

The Effects of the Bonny Method of Guided Imagery and Music (GIM) on
Adults in Chemical Dependency Treatment: Sense of Coherence, Salivary
Immunoglobulin A and Interpersonal Problems

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Errata

On page 5, the Samuels and Samuels (1975) citation should read (Samuels & Samuels, 1975, p. 22 as cited in McKinney, 1994)

On page 6, the final paragraph should cite McKinney (1994)

On page 13, the citations beginning with Bonde should be followed with: as cited in McKinney, 1994

On page 24, Martin (1998) should be followed with: as cited in McKinney, 1994

On page 26, Samuels (2005) should be as cited as (Jaffe and Bresler 1980, as cited in McKinney, 1994)

On page 30, the line with the Progoff (1963) citation should be followed with: as cited in McKinney, 1994

On page 38, instead of the entire sentence, it should only read as: See Appendix A.

On page 96, the paragraph starting with “Subjects were informed of the variety...” should cite to, and note that the methodology was adapted from, McKinney (1994)

On page 97, the paragraph starting with “During all...” should be followed by noting that participant response was similar to that described in McKinney (1994)

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Dedication

This thesis is dedicated to the subjects who were a part of this research study. The courage and strength you demonstrated in the therapy sessions and recovery process, continue to inspire my clinical work. I am thankful to have been a part of your process and to have learned from you. Thank you for being a part of my process.

Abstract

U.S. Department of Health and Human Services and the Substance Abuse and Mental Health Service's Administration's 2003 National Survey on substance abuse estimated that 19.5 million Americans were illicit drug users and 113 million Americans are alcohol users. Of these 113 million, 33 million engaged in binge drinking and 12.4 million were considered heavy drinkers. Individuals in chemical dependency treatment have a variety of psychological problems, physical health issues, demonstrate poor coping skills, and strained interpersonal relationships. Little research addresses these issues simultaneously, despite how these might all be influenced in the recovery process. The purpose of this study was to test the effectiveness of the Bonny Method of Guided Imagery and Music (GIM) on salivary Immunoglobulin A, interpersonal problems, and sense of coherence in adults undergoing inpatient chemical dependency treatment.

A two-group pretest, posttest quasi-experimental design study based on psychological and physiological responses to GIM sessions with 19 subjects undergoing inpatient chemical dependency treatment in the urban Midwest. Subjects (15 male, 4 female) with a mean age of 57.8 (SD 7.1) undergoing treatment due to declining physical health, family concerns, physician recommendations or court order enrolled in the study. Subjects were randomized to a weekly experimental GIM condition or to a control, no treatment condition. Interpersonal problems, sense of coherence and sIgA were measured at baseline and prior to discharge.

ANCOVA detected significant differences between groups on three subscales of the Inventory of Interpersonal Problems-Short Form (IIP-SC): domineering ($F(1,16) =$

5.2; $p < .05$), socially avoidant ($F(1,16) = 4.1$; $p < .05$), non-assertive ($F(1,16) = 4.6$; $p < .05$). Mean posttest scores: domineering 3.0(1.2) (experimental) and 4.9(2.6) control, socially avoidant 4.2(3.7) (experimental) and 6.4(3.0) control, non-assertive 6.4(3.8) (experimental) and 9.3(4.0) (control). ANCOVA was significant for manageability subscale of the Sense of Coherence Scale: ($F(1,16) = 7.8$; $p < .05$). Mean posttest scores 49.3(7.5) (experimental) and 41.8(5.4) (control). There were no significant differences between groups in sIgA.

GIM sessions were found to decreased aspects of interpersonal problems and increase manageability. Promising results from this study warrant further exploration of GIM as a therapeutic intervention to address the complex issues, in an effort to contribute knowledge to the discipline of music therapy.

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CHAPTER 1

The practice of music therapy is designed to address psychological and physical needs of an individual or group. The music therapist employs methods and interventions tailored to meet the presenting needs of the individual. An issue of concern in healthcare today is substance abuse. One hundred and thirteen million individuals age 12 and over currently engage in substance abuse. Thirty-three million individuals included in this group engage in binge drinking and 12 million are considered heavy drinkers (SAMSHA, 2003). As a result of substance abuse, these individuals may also encounter difficulties with employment, family, and social relationships (McNeece and Barbanell, 2005). Medical and health complications may arise as a result of the substance abuse and consequently the individual may develop a physical dependence upon the substance (APA, 2000).

In chemical dependency treatment, individuals present a variety of needs. The individual faces the stressors that may have led them to using the substance, along with the stressors that have surfaced as a result of abusing a substance. Addressing the issues that lead to substance abuse as well as the interpersonal, mental, and physical health issues is imperative for this clinical population.

In the practice of music therapy, music functions as a catalyst for human emotions. Music is able to tap into the deepest human emotions and provide a release for those feelings that words may not adequately express (Langer, 1967). Music also influences physiological functions. Sedative music can be utilized to induce a relaxation response, thus affecting blood pressure, respiration, galvanic skin response, heart rate, muscle activity, and pain perception.

Implementing the use of music and its therapeutic effects with individuals in chemical dependency treatment provides an alternative to manage life stressors. Turning to the use of a substance to manage these stressors creates a number of negative health impacts as well as a

detrimental influence on relationships. The use of music to manage life stressors is a healthy alternative, producing a positive impact on physical and psychological well-being.

For centuries imagery has played a role in health and healing. Early in the Christian era (150 C.E.) imagery was in the practice of medicine (Achterberg, 1985). Shamans and medicine men from ancient and primitive cultures have implemented the use of imagery in their healing practices (Achterberg, 1985; Samuels and Samuels, 1988). The images an individual projects can hold answers or insights into their health, well-being, and life issues (Achterberg, 1985). For example, images can include experiences about which an individual has no conscious awareness (Bruscia, 1991; Bush, 1995; Goldberg, 1995; Grof, 1988; Jacobi, 1994; Jung, 1960; Leuner, 1984; Tart, 1969; Wrangsjö and Korlin, 1995) such as traumatic memories that have been blocked from conscious thought (Blake, 1994; Borling, 1992; Pickett and Sonnen, 1993; Tasney, 1993; Ventre, 1995).

Music and imagery have often been utilized in a combined treatment modality because music assists in allowing the individual to reach altered states of consciousness (Bonny, 1969; Bonny and Pahnke, 1972; Bonny and Savary, 1973; Gaston and Eagle, 1970; Hamel, 1976). Grof (1988) describes the flow of music with imagery as a “carrying wave” (p. 185), which helps the patient move into deeper states of consciousness, work through difficult experiences, and explore new levels of awareness (Bonny, 1975; Grof, 1988). These authors contend that the music provides movement for latent emotional material and intensifies the images. The images themselves allow the emotional material to surface into conscious awareness for the individual to begin to process information (Bonny, 1975; Bush, 1995; Summer, 1988). The music and imagery experience may facilitate an emotional release (Jacobi, 1994; Tasney, 1993), self-realizations (Bonny and Savary, 1973), develop insights, and foster cognitive restructuring (Blake, 1994), or help foster a sense of purpose and meaning (Wrangsjö and Korlin, 1995).

Individuals with a chemical addiction often utilize the substance as a maladaptive coping mechanism. Utilizing music and imagery as therapy with this clinical population allows the individual to explore emotional and psychological issues contributing to the addiction, thus getting at the root of the problem. In confronting these issues, the individual can develop awareness into new and healthier methods of coping.

Numerous case examples have provided anecdotal support for the use of the Bonny Method of Guided Imagery and Music with individuals in chemical dependency treatment (Bonny and Pahnke, 1972; Bonny and Tansill, 1977; Pickett, 1991; Skagg, 1997; Summer, 1988). However, to date there has been no experimental research conducted implementing the use of GIM in chemical dependency treatment. The case studies provide an impetus to explore and investigate the application and effectiveness of GIM with this clinical population.

Several topics will be discussed in this chapter of the document. Following the present introduction, the section on music listening as therapy will review how music listening has been implemented, the types of music utilized, and the research on this therapeutic approach. The next section focuses on the combined use of music and imagery as a therapeutic method. This includes exploring the use of music listening as a therapeutic method, as well as, how music influences imagery. The third section addresses the mind-body connection and how the mind impacts the body. Since music and imagery both impact the mind (Jacobi, 1994; McKinney, 1994; Ventre, 1995; Wrangsjö and Korlin, 1995) and the body (McDonald, 1990; McKinney, 1994; McKinney, Antoni, Kumar, and Kumar, 1995; Rider, Floyd, and Kirkpatrick, 1985), the understanding and importance of this connection is explored. The focus of section four is on the impact of stress on health. Music and imagery are often utilized to address stress-related health issues (Hale, 1992; Jacobi, 1994; McDonald, 1990; Pickett, 1987; Pickett, 1991b); therefore understanding the impact of stress on health is critical to the manner in which music and imagery is implemented.

The final section explores the use of imagery as a therapeutic approach. The present study will use the Bonny Method of Guided Imagery and Music, as this therapeutic approach facilitates addressing the issues underlying substance abuse and assists the individual in developing new coping skills, which in turn improve overall health and well-being.

Background

The use of music as a healing art dates back to early times. Music and medicine have been close allies since the beginning of recorded history. This partnership has been documented from biblical times through the Middle Ages, the Renaissance, the Baroque, Classical, and Romantic eras, the 20th century; and now into the 21st century. In ancient times, shamans (the healers for a tribe or community) utilized music in the form of rhythms, songs, and dances, as a vital component of their healing rituals (Achterberg, 1985; Hall, 1972; Hamel, 1978; Samuels and Samuels, 1975;). In the early part of the Middle Ages (500-1450), Boethius (Weldin and Eagle, 1991) wrote of his views about music and the body. He explained that order and harmony are represented in the body and soul, and that music, with its inherent order and harmony, could positively influence these elements in the body (Lang, 1941). Through the Baroque Era, physicians frequently prescribed music listening to their patients (Weldin and Eagle, 1991).

While music was being explored and utilized to improve health and well-being, imagery was also implemented as a healing practice. Healers believed that imagery was the bridge between the mind, body, and spirit (Achterberg, 1985; Bush, 1995). Images are not only visual in nature, but are thoughts that are drawn from all of the senses (Achterberg, Dossey and Kolkmeier, 1994). They can include one, several, or all of the senses: sight, sound, touch, taste, and smell. Imagery can be projections of hidden hopes, fears, compulsions, and longings (Bush, 1995). Images can be memories from one's life. Imagery can be a means of expressing feelings, memories, and information that are hidden in the unconscious or has been suppressed (Bonny,

1975; Borling, 1992; Bush, 1995). Images provide a metaphoric representation or a personification of a problem, which allows an individual to view the issue more clearly (Bruscia, 1991; Clarkson, 1998-99; Goldberg, Hoss, and Chesna, 1988; Nolan, 1983; Skaggs, 1997; Stokes, 1985; Summer, 1988).

Since early in the Christian era, imagery has played a primary role in medicine and has influenced mental and physical health. Galen (130 C.E. - 200 C.E.), Hippocrates (469-399 B.C.E.), and Aristotle (384-322 B.C.E), considered the fathers of medicine, utilized imagery for diagnostic and therapeutic purposes (Achterberg, 1985). Asclepius (8th century B.C.E.) (Weldin and Eagle, 1991), a renowned healer in ancient Greece and Rome, was known for utilizing images obtained in a special state of consciousness that occurred immediately prior to sleep (a state referred to as hypnogogic sleep). The images would emerge automatically, much like movie frames viewed a screen. The imager would tell Asclepius about the images that were experienced, and based on the images Asclepius would suggest treatment for the patient (Achterberg, 1985).

In ancient Egyptian medicine, healers or ‘wabau’ as they were referred to, believed, “a person who holds a sacred image in his mind experiences the effects produced by the specific energy of the image” (Samuels and Samuels, 1975, p. 22). The history of health practices is fascinating, but it also provides a perspective regarding how the imagination served a primary role in the healing process. “In each instance of history, the gifts of the imagination took primacy over pharmacy and surgery, and those who were skilled at wielding the powers of the image were awarded the greatest stature in the healing hierarchy” (Achterberg, 1985, p. 7).

Despite the employment of these techniques in the ancient practice of mental and physical healing, it was only in the latter portion of the 20th century that researchers undertook the formal exploration of the use of imagery, and music in health, and healing (Achterberg, 1985; Samuels and Samuels, 1975; Standley, 1986). The use of music and imagery in modern times has

regained interest as a method of fostering the mind-body connection and a practice for healing (Achterberg, Dossey, and Kolkmeier, 2003; Achterberg, Dossey, Kolkmeier, and Sheikh, 1994).

Music Listening as Therapy

This section provides an overview of the types of music implemented to influence psychological and physiological states. This will include a review of the research literature implementing music listening in a variety of clinical areas. This section will also detail the many areas that music influences physiologically and psychologically.

Music is commonly used to maintain or change psychological and emotional states of patients, (Bonny and Pahnke, 1972; Bonny and Tansill, 1977; Goldstein, 1980; Harvey, 1987) as well as physiological states (Liebmann and Maclaren, 1991; Montello, 1995; Rider, 1987; Standley, 1986). Gaston (1968) wrote about the importance and value of music as a means of communication. "It is the wordless meaning of music that provides its potency and value. There would be no music and no need for it if it were possible to communicate verbally that which is easily communicated musically" (p. 23). The form and dynamic movement within music seems to match and capture the quality of human emotion in a way that is unmatched by any other medium (Goldberg, 1995). Music seems to express those feelings and experiences that we cannot find words to express. The influence of music is not limited to the psychological and emotional experiences; music also has the capacity to influence various physiological functions, as described below.

Many studies have explored the impact of music listening as an intervention on physiological processes such as managing pain, discomfort, and anxiety that patients experience as a result of a procedure or treatment. Researchers have explored the use of music listening with many patient populations including; cancer patients (Weber, Nuessler, and Wilmanns, 1997), undergoing dental procedures (Goff, Pratt, and Madrigal, 1997), patients who suffered

myocardial infarction (Davis and Cunningham, 1985; White, 1992), patients undergoing coronary bypass surgery (Barnason et al., 1995; Zimmerman et al., 1996), and patients on intensive care units (O'Sullivan, 1991).

Kaempf and Amodei (1989) evaluated the effects of relaxing music on the anxiety of patients in the pre-surgical waiting room area of operating room. The study included responses from 33 outpatients undergoing arthroscopic procedures. The patients were randomized to music or control group conditions and the State-Trait Anxiety Inventory, pulse, blood pressure, and respiration rates were used to measure anxiety. The music group listened to twenty minutes of researcher-selected relaxing music while the control group received no music. Data were collected upon arrival to the holding area and following twenty minutes of music listening via earphones and a cassette player for the experimental group and after twenty minutes of no music for the control group. The results showed a significant decrease in respiration (mean change: -3.18; $p < .002$), anxiety scores (mean change: -3.29; $p < .005$), and systolic blood pressure (mean change: -3.10; $p < .05$) for the experimental group. The data for the control group showed a significant decrease in systolic blood pressure (mean change: -4.30; $p < .02$) and anxiety scores (mean change: -2.76; $p < .049$). The results show that respiration rates for the experimental group were significantly lower than the control group when the mean differences in scores between these groups were compared. While experimental and control groups both demonstrated a significant overall change in systolic blood pressure and anxiety scores, the experimental group demonstrated a greater change overall. The results indicate the listening to music has a significant and positive impact on the physiological measures of respiration and blood pressure, and significantly reduces anxiety. This study illustrates that listening to music can positively impact patients' responses to stress.

Urdike (1990) explored the use of music listening with patients on a coronary and surgical intensive care unit. Patients in the experimental group listened to their choice of contemporary relaxing music or classical music for 30 minutes, while the control group received no music. The experimental group demonstrated significantly lower levels of blood pressure, heart rate, and arterial pressure compared to the control group that received no music. Patients in the experimental group also reported their mood shifted significantly toward a positive state of well-being. This study highlights the impact of music listening on the physiological measures of blood pressure, heart rate, and arterial pressure, as well as the positive psychological impact on mood state.

Schorr (1993) evaluated the effect of music listening on reported levels of chronic pain for patients with rheumatoid arthritis. In this experimental study, patients randomized to the experimental group listened for 20 minutes to their preferred music. Following the music listening period patients reported significant reduction in their reported levels of pain compared to the control group that received no music. The results demonstrated that following a time frame of 20 minutes of music listening the patients' experience of pain was reduced significantly.

Chlan (1995) conducted a randomized-control study with mechanically ventilated patients, the experimental group listened to music in a single listening episode for 35 minutes, while patients in the control group used headphones only with no music for the same 35 minute timeframe. There was not a statistically significant change in heart rate or respiration rate for the experimental or control group, however the experimental group did demonstrate a significant decrease in anxiety scores after a single episode including 35 minutes of listening to music. While the changes in the physiological measures of heart and respiration rates were not statistically significant for the experimental group in this study, these rates did decrease at differing rates for the patients in the experimental group during the music listening period. This study highlights

that a single episode of listening to music for at least 35 minutes can significantly decrease anxiety.

Researchers have continued to explore and discover the impact of music listening from the psychological and physiological perspectives (Rider & Achterberg, 1989). This has fostered research exploring the impact of music listening on neurophysiology (Rider et al., 1990). Some studies indicate that music listening may foster the production of chemicals within the nervous system that can block or dampen messages and signals at targeted cells (Goldstein, 1980) and stress hormones (Migeault et al., 2004). Increased production of stress hormones can be detrimental if not reduced, and this can lead to a negative impact on the body's immune response (Pert, 1997). If listening to music can decrease stress hormone production and increase the level of hormones that facilitate healing the body, as well as enhancing the production of molecules that carry this information, then it is feasible to theorize that music could positively impact the body's immune response.

Bartlett, Kaufman, and Smeltekop (1993) explored the impact of music on a stress hormone called cortisol, which is secreted when an individual encounters stress (Pert, 1997) and a protein called interleukin-1 that is produced to kill or slow the growth of a virus or bacteria (Vanderhaeghe & Bouic, 1999). Bartlett, Kaufman, and Smeltekop (1993) found after listening to relaxing music for 15 minutes and also 24 hours after listening, subjects in the experimental group demonstrated decreased levels of cortisol compared to the control group that did not listen to music. The results included a significant increase in the protein (interlukin-1) after 15 minutes of listening to the relaxing music; however, this increase was not maintained at the 24-hour measure. The results indicate that, after a brief period of music listening, patients are demonstrating a positive impact on the neurophysiological processes of the body.

Miluk-Kolasa, Obminksi, Stupnicki, and Golec (1994) explored the impact of music listening on salivary cortisol for patients awaiting surgery. Patients in the experimental group listened to one hour of client-selected music, while the control group had no music as they awaited surgery. Salivary cortisol was collected every 15 minutes during the one-hour time frame for both groups. Within the first 15-minute measure salivary cortisol levels showed a 50% increase in both groups. The cortisol levels gradually decreased for the control group, but at the end of the one-hour time frame, the levels were significantly higher than the initial cortisol level. The patients in the experimental group demonstrated a significant decrease in salivary cortisol levels throughout the one-hour music listening period.

Schneider, Schedlowski, Schurmeyer, and Becker (2001) explored the effect of music listening on patients undergoing a procedure called cerebral angiography. The researchers randomly assigned 15 patients to the experimental group; members of this group listened to music throughout the procedure. Another 15 patients were randomly assigned to the control group that included no music throughout the procedure. Physiological measures of interest included blood pressure, heart rate, and cortisol levels in plasma. All the measures were taken before, during, and after the procedure. Patients in the control group (no music) showed rising levels of cortisol throughout the procedure, while the cortisol levels of the experimental group (listening to music) remained stable. Patients in the experimental group also demonstrated significantly lower systolic blood pressure when compared to the control group. The results indicate the listening to music during the procedure helped mediate the body's stress reaction.

As early as 100 B.C., there is documented use of music to promote health and healing in ancient Greece, Rome, and Egypt (McClelland, 2000). Many cultures have incorporated the use of music into their health and healing practices, based simply on intuitive belief. The technological advances in science and medicine have allowed researchers to measure and

quantify the effect and influence of music on physiological change. However, due to the many elements and dimensions of music, theorists, aestheticians, and researchers continue to explore the nature of how music relates to man. The desire to understand music and its psychological and emotional impact has encouraged many to write about their experiences. Freud was greatly affected by music emotionally, yet unable to make sense of its impact; as a result, he found he could no longer derive any pleasure from it (Noy, 1967). Michel (1968) proposed that musical language has an ability to express several of ideas simultaneously, whereas verbal or spoken language can only express one idea at a time.

Noy (1967) wrote, “aestheticians view music as a symbolic language expressing overt feeling content and psychoanalytic theory regards it as a language lending symbolic expression to unconscious content” (p. 49). Meyer (1956) reflected on the fact that music has no fixed meaning and does not stop music listeners from assigning personal meaning to it. Music arouses images, thoughts, and emotions that have personal meaning for the listener. Langer (1967) concurred that the elements and form inherent in music connect and relate to the feelings experienced in life in ways that words and language cannot.

Bonny (1975) explored how music touches the various levels of consciousness. The movement of the music, “the rise and fall of dynamics brings about a wide sweep of those levels or layers of consciousness... an overview of important events and influences in a person’s life are experienced” (p. 129-130). She also explored how music can access different levels of consciousness. Bonny also describes the role of music in a simple metaphor, “music is like an elevator taking you from floor to floor, your willingness to relax and let go opens the door onto a new floor and allows you to explore new levels of awareness” (p. 130-131).

Wilhelm Reich (1949) summarized the essence of the human response to music when he stated: “the living organism has its own modes of expressing movement which simply cannot be

comprehended with words... yet music gives expression to the inner movement of the living organism, and listening to it evokes the sensation of some inner stirring” (p. 94). Again and again throughout history, music has demonstrated an ability to connect each aspect of a human being, from the physical (body) to the emotional (mind) and the spiritual (spirit) aspects of man (Gaston, 1968). Because of this, it is natural to progress from exploring how music helps express the depth of emotion to how it impacts the body.

Music and Imagery as Therapy

This section reviews the combined application of music and imagery as a therapeutic approach, including how these two distinctive techniques influence one another when utilized together, as well as the impact of music on the production of imagery and the overall imagery experience. The following paragraphs also include a review of how music and imagery can be utilized together as an approach to relaxation and as a psychotherapeutic approach.

Music can facilitate changes in emotions, mood, and physiological states. It can be an agent in producing a relaxation response (Chlan, 1995; Hanser, 1985, 1988). Music also has the capacity to “bring to the surface emotions that have been repressed for years, even a lifetime” (Rider, 1987, p. 116). Grof (1988) writes: “good music helps to mobilize old emotions and make them more available for expression, intensifies and deepens the process, and provides a meaningful context for the experience. The continuous flow of music creates a carrying wave that helps the subject move through difficult experiences and impasses, overcome psychological defenses, surrender and let go” (p. 185).

Due to the fact that music is evocative in nature, many clinicians and researchers have explored pairing music with various other methods to foster healing (Achterberg, 1985; Golderg, 1987; Grof, 1988; McKinney, 1990; Meadows, 2002). Music has frequently been paired with imagery as a method of therapy (Meadows, 2002). This combination has also been the subject of

numerous case studies, as well as formal and informal investigations (Achterberg, 1989; Bonde, 2005; Pickett, 1987; Rider & West, 2003). Many theories have been developed to implement the concurrent use of music and imagery in therapeutic settings.

Nerenz (1969) wrote that music facilitated dream-like scenes and that ‘musical symbol drama’ could be an important aspect of therapy, as it allows access to emotions and experiences that have been unexpressed. Achterberg (1985) writes that music can foster a trance-like state and that this non-ordinary state is helpful to bypass obsessive thoughts, fears, and defenses to help the individual connect to their innate ability to heal.

The first therapeutic work incorporating music and imagery was conducted at the Maryland Psychiatric Research Center. Bonny was invited to be a part of the research team that was exploring the use of music in psychedelic psychotherapy (using LSD) for patients struggling with addictions and diagnosed with terminal cancer (Bonny, 2002). Bonny observed that the music functioned as a catalyst for the imagery in that it helped the patient enter into a relaxed state, assisted in reaching an altered state of consciousness, and gave structure to the experience. She observed these differences between patients that utilized only LSD and those that implemented the use of music with LSD. Bonny (2002) elements of music also fostered the creation of images and facilitated the release of intense emotions. Bonny (2002) observed that those patients that utilized music more easily generated images and were able to experience and also express deep, unexpressed emotions.

Authors and researchers have written about the impact of music on the imagery experience (Bonde, 2005; Bonny, 1978a; 1978b; Bonny & Savary, 1973; Quittner, 1980;). Bush (1995) writes that music, specifically classical music stimulates associations, thus fostering the emergence of images. McKinney (1990) reported that music intensifies the emotional experience of the imager (the individual engaged in an imagery experience), as well as how music enhanced

and influenced the type of imagery experienced (1994). In case studies, clinicians have written that music impacts the emotional intensity of the image (Grof, 1988; Hamel, 1987;), stimulates the senses (Pickett, 1991), and provides a sense of support for the imager (Rinker, 1991), which creates a feeling of safety and security for emotions and experiences to be explored.

Quittner and Glueckauf (1983) compared music and relaxation as facilitators of imagery in a multiple measures study, using five dependent measures to assess the effect of music, relaxation, and a control condition (no music and no relaxation) on the production of visual imagery with undergraduate students. Subjects rated ease of evoking images, percentage of time imaging, vividness of imagery, the amount of time spent imaging, and EEG levels. The results indicate that participants who listened to music demonstrated significantly greater vividness in imagery, significantly greater ease in imaging, and a significantly greater amount of time imaging compared to the relaxation only group and the control group. No substantial difference was observed in EEG levels between the three groups, meaning there was not a significant difference in the amount of time subjects spent imaging in a deeper relaxed state. Overall, the findings suggest that music was more powerful as a facilitator of visual imagery than relaxation alone, helping patients focus and engage more in the imagery experience.

Nolan (1982) used music to stimulate imagery for diagnostic purposes in a forensic setting. In this experimental study, he found a correlation between his GIM Depression scale and Beck's Depression Inventory (BDI), which is a 21-item self-report inventory that is widely utilized in clinical practice and in research to measure the severity of depression. The BDI is based on a categorical diagnosis model that is utilized in the DSM-IV-TR. The reliability coefficient for the BDI is .83, with construct validity of .92 (Richter, Werner, Heerlein, Kraus, and Sauer, 1998). Nolan reported that the diagnostic procedure utilizing GIM was especially effective with clients who have minimal verbal ability and has the advantage of eliciting material

for beginning the therapeutic process.

After working with Bonny at the Maryland Psychiatric Research Institute, Leuner (1984) utilized classical music in his approach to Guided Affective Imagery. He identifies using primarily pastoral and intimate lute pieces, claiming that this music helped to induce a meditative state and enhanced relaxation. Grof (1988) reported on his use of evocative music in his holotropic therapy, which is “the use of hyperventilation to induce non-ordinary states of consciousness” (p. 184). Based on his own work with Bonny at the Maryland Psychiatric Research Institute, he writes: “skillful use of musical selections can also facilitate the emergence of specific contents, such as aggression, emotional and physical pain, sexual and sensual feelings, birth struggle, ecstatic rapture, and the oceanic atmosphere of the womb” (p. 185).

Rider and Kibler (1990) observed that healing images were blocked or weakened by images of repressed emotional experiences. Furthermore, these events represented experiences of unresolved pain or anger. Rider (1987) observed that fearful or negative images and feelings often emerge in the imagery of individuals diagnosed with a chronic illness. During the imagery experience, the researcher utilized improvised music that was designed to match the image the patient selected. The facilitator and the group members improvised the music incorporated in the imagery experience. The facilitator worked with the imaging patient and the group members to determine the instrumentation and elements needed within the music to support the patient’s image and the imagery experience. During the imagery experience with the improvised music, patients reported that their images transformed from an image that represented their illness into an image they described as a healing image. This fostered a sense of hope for their healing.

Rider and Achterberg (1989) studied the effect of music and imagery on white blood cell counts of university students and staff. Subjects were randomly assigned to two groups, either the neutrophil or lymphocyte group. Each group received training in progressive muscle relaxation

and training focused on the shape and location of neutrophils or lymphocytes. Subjects were given a 20-minute recording that incorporated a progressive muscle relaxation experience accompanied with relaxing music, followed by their designated cell group imagery, which was also accompanied by music designed specifically to support the imagery experience. Subjects were instructed to practice with the recordings several times each week for six weeks prior to the test session when white blood cell counts would be measured. Subjects began testing after they met all of the following conditions: (a) completed a minimum of ten practice sessions within the 6 week timeframe; (b) reported a positive shift in their imagery, meaning they noticed an increase in vividness, movement, or intensity of color; (c) reported they were not currently sick or suffering from any infectious disease, (d) reported not having ingested large amounts of alcohol or drugs in the last 24 hours; and (e) reported no food intake in the past two hours. In the testing session, blood draws were taken before and after subjects listened to the 20-minute imagery and music recording. The results demonstrated that the neutrophil counts in the neutrophil imagery group were reduced significantly ($p < .04$), while their lymphocyte counts did not change significantly ($p < .35$); similarly, the lymphocyte counts for the lymphocyte imagery group decreased significantly ($p < .03$), while their neutrophil counts did not ($p < .42$). The results provide support for the concept that imagery and music focused on physiological processes impact immune system response.

The research reviewed demonstrates how music influences and enhances the imagery experience. Music serves as a way of helping the patient relax and induces a meditative state that is conducive to imagery. When a patient is imaging music supports the imagery, giving a sense of movement to the images and intensifying the emotional experience of the imagery. This combined use of music and imagery helps the patient process their therapeutic issues as the music fosters movement from image to image. The patient is also able to express their emotions as the

music facilitates an emotional release within the imagery experience.

Shamans and physicians throughout history have utilized music and imagery in healing practices (Achtenberg, 1985). The skilled use of music and imagery in healing was revered and held in high regard due to the abilities these therapeutic tools have to help patients heal (Achterberg, 1985; Weldin and Eagle, 1991). Researchers and clinicians have continued to explore the impact and use of music and imagery in helping patients heal. The research has focused not only on how music and imagery impact psychological healing and well-being, but also on the physiological aspects of healing as well.

The Mind-Body Connection

Music and imagery are not only experienced *through* the mind and body, but also *impact* the mind and body (Achterberg, 1985; Samuels, 2003). The concept of the mind-body connection has not always been accepted (Gordon, 1996). This section outlines the history of the mind-body split and the research, events, and pioneering work that lead to the acceptance of this concept.

The origins of the mind-body split go back to the sixteenth century. Before this period, the church strictly prohibited any type of dissection on the human body. This restriction limited physicians' knowledge of the function of the brain and internal organs. Despite the church's declaration against dissection, some anatomists and academicians were willing to risk facing the wrath of the authorities to advance their knowledge of the body. In 1595, Professor Hieronymus Fabricius di Aquapendente served as the first professor of anatomy at the University of Padua in Italy. His vision was to build an amphitheater to teach students through dissection and help them learn the structures of the human body. The earliest recorded dissections began in *Theatrum Anatomicum* at the University of Padua that same year (Sternberg, 2000).

The process of discovery continued when French philosopher Descartes (1596-1650) was eager to understand the workings of the human body. He too wanted to study the human body

first hand through the use of autopsies. He was “forced to make a turf deal with the Pope in order to get the human bodies he needed for dissection” (Pert, p. 18, 1997). Under the terms of this agreement, Descartes agreed that he would not examine or explore anything connected with the soul, the mind, or emotions as these aspects of the human being were the exclusive domain of the church. He agreed to this as he could then claim the body or the physical aspects as his own (Pert, 1997; Sternberg, 2000). This agreement

set the tone and direction for Western science over the next two centuries, dividing the human experience into two distinct and separate spheres (the Cartesian model) that could never overlap, creating the unbalanced situation that is mainstream science as we know it today, the mind-body split. (Pert, 1997, p. 18).

Despite the historical restriction of study concerning the soul, the mind, and emotions, Aristotle believed there was a relationship between health and behavior. The Greeks maintained their philosophy of balance, which held that healthy eating, water, physical exercise, and support of loved ones were vital to good health. They understood intuitively that the emotions, activities, and behaviors that calmed them (such as adequate sleep, music, and daily prayer) were essential to their health (Sternberg, 2000). The Chinese also recognized the role the mind plays in healing the body and the importance of maintaining balance in life. The concept of balance was represented by the idea of the yang (over-fullness) and the yin (deficiency) and believing that balance maintains health in the body. The Japanese emphasized that the process of realizing one’s potential or self-actualization allows an individual to achieve a mind-body connection (Tsao, Gordon, Maranto, Lerman, & Mursako, 1991).

Although Descartes’ views were widely accepted, there were some physicians who still believed Hippocrates’ theory that the body and spirit were connected. For example, Dr. Josephus Struthius (1510-1569), professor of medicine at University of Padua, is recognized for his

conceptual approach to measuring pulse. He describes how the passions experienced in the mind can be felt in one's pulse (Naqvi and Blaufox, 1998). Dr. William Harvey (1578-1657), who discovered the process of blood circulation, was convinced that the heart was not only a mechanical pump, but also the site of vital energy. Although physicians like Struthius and Harvey were beginning to explore the link between the mind and body, the scientific world held steadfast to Descartes' theories for the next three centuries (Gordon, 1996; Lipton, 2005; Sternberg, 2000).

During the 1920s and 1930s, the continued study of balance within the human body brought the introduction of the theory of homeostasis, the body's feedback mechanism for restoring and maintaining balance. In the 1940s, Hans Selye was researching and developing his theories on the body's response to events. He observed the body's consistent response to stress events and deemed this the "general adaptation syndrome" (Selye, 1993, p. 12). Selye's research focused on the physiological responses to various stimuli and stressful events and the effects of these responses on the body. This vein of research continued to spur further studies (Gordon, 1996; Sternberg, 2000) and pose new questions concerning the extent of the body's reaction to stressful events.

These questions and realizations fostered exploration and development of the field of mind-body medicine in the 1940s. It was during this time that the shortcomings of biomedicine became apparent. Biomedicine could not "explain the origins or treat the consequences of the chronic illnesses, the disabilities, and the distresses that afflict more than 80 percent of those who seek medical attention" (Gordon, 1996, p. 22). This prompted the exploration and study of psychosomatic medicine, which entailed studying the relationship between behaviors, personality traits, and specific diseases (Tsao, Gordon, Maranto, Lerman, & Mursako, 1991).

In the late 1960s, the concept of psychoneuroimmunology (a field of medicine that emphasizes the connections between the mind, brain, and immune system) was introduced

(Gordon, 1996; Jacobi, 1994). This research explored the connections between “the mind and the emotions it produces, and the body’s most important regulatory systems – the autonomic nervous, endocrine, and the immune systems” (Gordon, 1996, p. 100). This meant that the type of stress we encounter and the way in which we make sense of and cope with it may play a vital role in the types of diseases we encounter.

The twentieth century world of medicine was better able to study these new theories with associated advances in medical equipment and technology. The intuitive beliefs of the Greeks were resurfacing, and now physicians and researchers possessed the knowledge and materials to provide the essential data to answer crucial research questions. These new pathways of understanding fostered scientific research and exploration of the effects of various experiences on the human body (Gordon, 1996).

Health and Stress

In the late nineteenth-century, physiologists from around the world began to explore the relationship between the environment and a living organism. French physiologist Claude Bernard postulated that the “internal environment of a living organism must remain fairly constant despite changes in the external environment” (quoted in Selye, 1993, p. 7). Bernard went on to conduct investigations that explored the adaptive changes a living organism undergoes in order to maintain a steady internal state. His theories and comments created a ripple effect, generating research by physiologists around the world. German physiologist Eduard Pfluger noted that, “the cause of every need of a living being is also the cause of the satisfaction of that need” (quoted in Selye, 1993, p. 8). The Belgian physiologist Leopold Frederic shared a similar view that a living being is influenced by outside factors (Selye, 1993), which in turn call forth reactions that neutralize or help repair the body.

Around the turn of the century, Cannon (1939), a Harvard physiologist, postulated that the body tended toward a state of balance (homeostasis); however, this state of balance was influenced by external factors, such as fearful situations. Cannon's studies "helped to establish the existence of many highly specific mechanisms for protection against hunger, thirst, hemorrhage, or agents tending to disturb the normal body temperature, blood pH, or plasma levels of sugar protein, fat, and calcium" (p. 333). He described "the fight or flight response as a series of biochemical changes that prepare the individual to deal with threats of danger" (p. 335). Cannon emphasized the living organism's response to pain or rage, which stimulated the sympathetic nervous system, resulting in a hormone discharge from the adrenal glands. This neuro-hormonal response supports the body's ability to adapt and respond to the situation or stimuli. Then, as the stimulus is no longer present, the neuro-hormonal response decreases, allowing the body to return to a homeostatic state.

Cannon's research was continued by Selye (1993), who became interested in what he considered the "syndrome of just being sick" (p. 9). During his time in medical school, he began to notice that patients suffering from a wide array of diseases exhibited strikingly similar symptoms. In 1936, Selye began conducting research in endocrinology. He explored the physiological responses to "cold, heat, infection, trauma, hemorrhage, nervous irritation, and a variety of other stimuli" (Selye, 1993, p. 10). He discovered that the changes that occurred in all the organs were identical, each organ became enlarged and began to bleed. Selye came to describe this response as the general adaptation syndrome (GAS) in his 1936 article in *Nature* (Selye, 1975). He described GAS as a "generalized call to arms of the body's defenses" (Selye, 1993, p. 10), which describes the body's ability to respond to external stimuli and to protect itself.

Selye continued to explore the GAS, and he began to notice distinct phases within the GAS. The initial alarm reaction was not the only or entire response of the GAS. When the

organism was exposed to a harmful or toxic agent on a continuous basis, the alarm reaction cannot be maintained. If the organism survived the alarm reaction, what followed was a stage of resistance (Selye, 1956, 1976, 1985, 1993). If exposure to the toxic agent continued, the organism then went into the exhaustion stage, which continues for as long as the stimulus remains. Selye continued to research the effects of these adaptation responses. In relation to the adaptation response he wrote: “we still do not know precisely what is lost, except that it is not merely caloric energy” (Selye, 1993, p. 10). These discoveries regarding how the body responds to stimuli showed similarities to the wear and tear a machine undergoes from use over time. During these stages of the adaptation response, the body does not and cannot adequately replenish and rejuvenate. These biological and physiological responses create wear and tear on the body.

Selye’s research provided information and insight about stress and the physiological effects on the body (1985, 1993). The fact that adaptive hormones were produced in response to stress generated inquiry regarding the overall impact of these hormones on the body (Selye, 1956, 1975, 1976). Hormones like cortisol and adrenocorticotropic hormone (ACTH) that are produced as a part of the body’s stress response. These hormones have anti-inflammatory properties; therefore, questions and uncertainty remained about whether the production of these hormones in response to stress would actually stimulate inflammation or counteract it as these hormones would under normal circumstances (Selye, 1956).

Advances in research and technology played a significant role in stress research. From Hippocrates (469-399 B.C.E.) understanding the relationship of the mind-body, through Dr. William Harvey’s (1578-1657) exploration of the mind-body connection, to Selye’s research detailing the stress response in the body (1985, 1993), the ability to measure hormonal, immune, and nervous systems responses to stress have helped to advance the understanding of how the mind is impacting the body (Gordon, 1996). Advances in science have permitted researchers to

detect the response and role of molecules and hormones in the stress response. As technology developed to measure these physiological and biological processes (Gordon, 1996; Seyle, 1993; Sternberg, 2000), researchers began to explore of the body's reactions and responses to life events. Immunologists began to "believe that stress might make you sick in day to day circumstances through the hormonal circumstances" that take place in the body (Sternberg, 2000, p. 63). Research continued to demonstrate the myriad effects that stress has on the human body including headaches, upset stomach, high blood pressure, insomnia, and chest pain; it can also exacerbate pre-existing health conditions (Gordon, 1996; Seyle, 1993; Sternberg, 2000).

The long-term effects of stress can produce negative effects on the body. Chronic stress can result in muscle tightness, feeling tired or fatigued, hypertension, headaches, peptic ulcers, and increase the frequency of bowel movements. Stress can also increase symptoms associated with asthma, bronchitis, and other respiratory conditions, and suspend tissue repair that leaves the body susceptible to developing chronic health conditions (Sternberg, 2000). Research has demonstrated that, when the body encounters stress, "the adrenal glands secrete corticoids which inhibit digestion, reproduction, growth, tissue repair, and the responses of the immune and inflammatory systems" (Davis, Rarey, & Laren, 1995, p. 2). Prolonged periods of stress can exacerbate chronic health conditions such as rheumatoid arthritis, pain, and diabetes. Suppressed immune and inflammatory systems leave the body vulnerable to cold and flu viruses and can worsen various diseases including cancer and AIDS (Gordon, 1996). Many researchers have explored the effects of stress and emotions on the incidence and course of many illnesses including, infectious disease (Cohen, Schwartz, Bromet, & Parkinson, 1991; Cohen, Tyrel, & Smith, 1991; Sheridan et al., 1994), auto immune disease (Epstein, 1995; Pelletier, 1977; Solomon, 1981), cancer (Achterberg & Lawlis, 1984; Chen, David, Nunnerly, Michell, Dawson, Berry, Dobbs, & Fahey, 1995; Cooper & Faragher, 1993 and 1997; Fox, 1988; Pelletier, 1977;

Shekelle, Persky, Kempthorne, & Rawson, 1987), diabetes (Achterberg, & Lawlis, 1984; Martin, 1998;), and AIDS (Davis & Laren, 1995).

The American Medical Association has estimated that about 80% of all medical disorders are psychosomatic or stress related (Gordon, 1996; Weil, 2000). Some reports are more conservative and estimate the percentage to be between 60 and 70% (Scartelli, 1989; Sternberg, 2000). Stress, negative emotions, and attitudes have been found to predict health and mortality (Martin, 1998). The power and influence of the mind over the body has been demonstrated by the placebo effect (Benson & Friedman, 1996; Stefano, Fricchione, Slingsby, & Benson, 2001). A placebo is an ineffectual treatment for a condition or disease that is intended to deceive the recipient, typically as part of a research study control group. Patients who have been given a placebo can have perceived or actual improvement, which is referred to as the placebo effect (Roberts, 1993; Gordon, 1996; Sternberg, 2000). This phenomenon points to the important role the mind plays in impacting the body. Biofeedback research has demonstrated that an individual has the ability to consciously alter physiological processes (Benson, Jacobs, & Friedman, 1996; Benson & McKee, 1993; Borysenko, 1998; Martin, 1998; Pert, 1997, Scartelli, 1989;). One way in which this information is being applied in health care is through the use of imagery to produce physical and psychological change.

Imagery as Therapy

This section provides descriptions of the broad definitions of imagery and how imagery is experienced through the senses. An overview of the many uses of imagery is included, as well as a review of the research literature including applications of imagery to trigger physiological and psychological change.

Imagery has long held a primary role in medicine. Shamans utilized imagery in their healing rituals for centuries. In Celtic and Greek (500 B.C.) cultures, the application of the

imagination in healing took precedence over the use of surgery or herbal medicines (Achterberg, 1985). Individuals who were skilled in the use of imagery were given the greatest respect in all areas of healing. The uses of the imagination and imagery have integrated into the healing practices of the twentieth century and researchers continue to study the effects.

Images are thoughts that evoke the senses: sight, sound, smell, taste, and touch (Achterberg, Dossey, & Kolkmeier, 1994). Images and imagery are the means of communication between the body, mind, and the spirit (Achterberg, 1985; Bush, 1995). Imagery is not only experienced in the visual sense, thus imagery and visualization are not synonymous terms (Achterberg, Dossey, & Kolkmeier, 1994; Bush, 1995; Naparsteck, 1994;). Images and imaging are full sensory experiences, drawing upon all of the senses. Imagery can involve recalling the smell of the bread your grandmother used to bake, it can be a recollection or reminiscence of the first snowfall of the season, or it can be remembering the sound of your father's voice as he told you he was proud of you. Imagery can also include recalling the sense of invigoration you experienced as you completed a task or achieved a long awaited goal.

The experience of imaging affects and influences the whole body (Samuels, 2005). To the body, the images are almost like real or actual events. In the imagery experience the body "does not discriminate between sensory images of the mind and what we call reality" (Naparsteck, 1994, p. 18). Although the body does not respond to the image with the same intensity, each event elicits essentially the same quality of experience. Which includes all of the senses engaging in the imagery experience (Achterberg and Lawlis, 1984; Naparsteck, 1994; Samuels, 2005).

Carl Jung (1963) wrote, "By allowing a mood or problem to become personified or given a cloak of an image, we cannot only begin to view it more clearly, more creatively, but also experience the emotions that are blocked behind it" (p. 46). Based on his work with patients, Jung

theorized that, if emotionally laden images were simply left in the unconscious, they would negatively impact one's health and well-being. Imagery serves as a vehicle to work through these experiences and to express the feelings connected to these experiences (Bush, 1995).

Samuels (2005) contends, "mental imagery mobilizes the latent, inner powers of the person, which have immense potential to aid in the healing process and in the promotion of health" (p. 17). Samuels and Samuels (1975) suggest that imagery initiates an emotional and physiological response that influences the person's whole being. More specifically, imagery not only affects the body, but also the state of mind and the perception of the environment (Achterberg, Dossey, & Kolkmeier, 1994; Naparsteck, 1994).

In recent years the use of imagery has increased within the field of medicine and the treatment of pain, cancer, ulcers, cardiovascular and nervous system diseases, and suppressed immune function (Achterberg, 1984; Achterberg, Lawlis, Goven, Toledo, and Butler, 1990; Achterberg, Lawlis, Simonton, & Matthews-Simonton, 1977; Andrews and Hall, 1990; Fernandez & Turk, 1989; Graham-Pole, Rockwood-Lane, Kitakis, & Stacpoole, 1995; Jasnosski & Kugler, 1988; Meares, 1976; Orme-Johnson, 1987; Rider, 1989; Rider, Zachariae, Kristensen, Hokland, Ellegaard, Metze, & Hokland, 1990; Schneider, 1983; Smith, 1989).

Achterberg and Lawlis (1984) explored the use of imagery in the treatment of 126 patients diagnosed with cancer. The patients were diagnosed with either Stage IV (metastatic) or terminal cancer. All of the patients completed a battery of tests including both psychological and biological measures. Researchers collected blood samples to measure white blood cell counts, cortisol levels, and monocyte reactions. These biological measures were utilized to understand the progression of the disease during the study. The psychological measures included the Minnesota Multiphasic Personality Inventory (MMPI), looking specifically at the subscales targeting locus of control (Psychopathic Deviate Scale) and denial (Hypochondriasis Scale). Patients were also

interviewed following the imagery sessions and asked to describe their images as well as draw pictures of the images they experienced. For the imagery experience, each patient was instructed to get into a comfortable position and then listened to a recording of relaxation instructions. Then, they received a short educational session about their cancer, the treatment process, how the treatment fights their disease, and the role of the immune system. Through the educational session, each patient was given instructional materials that explained what happened on a cellular level in the development of cancer, and the immune system response to the treatment. The educational session helped patients understand the physiological process and gave them information to assist in formulating their own images of the process. The researchers did not give the patients specific suggestions for their image; rather, patients selected their own image. Following the imagery sessions, researchers interviewed the patients and asked them to describe their image as well as draw a picture of the image(s).

The data demonstrated the psychological measures were predictive of future events. For example, patients with high scores in denial and low scores on locus of control, experienced deterioration in their disease status by the time of the two-month follow up, while those with low scores in denial and high scores in locus of control experienced better outcomes. Researchers reported that the most effective predictor of disease status and future events was the patient's imagery. Researchers reviewed patient images and the images were categorized by their content. These images included those of their cancer and continuing to experience it as unchanged and images of a warrior defeating their cancer. The imagery data were compared to patient outcomes as they continued to throughout the course of their cancer treatment. Imagery data were reported to provide 100% certainty in predicting which patients died or showed significant deterioration at the two-month follow up, while there was 93% certainty regarding which patients would be in remission at the two-month follow up. Patients who experienced images of warriors fighting the

good fight were associated with positive outcomes. Patients who had vivid images of their cancer or imaged their cancer as unchangeable experienced very poor outcomes. The researchers reported that the patient's own images provided the most consistent insight into disease progression and future health outcomes for patients in this study. It is important to note that the images were analyzed by the researchers and not reviewed for reliability by an independent or outside reviewer.

Rider, et al. (1990) explored the use of imagery focused on immune function with college students. Subjects were divided into three groups. Group 1 received a short educational training on the production of secretory immunoglobulin A and listened to a 17-minute recording of immune imagery instructions that included music specifically composed to enhance the imagery. Group 2 listened to the same 17 minutes of music, but they received no imagery instructions. Group 3 sat quietly in a room while doing nothing. Groups 1 and 2 listened to their respective recordings at home every other day for six weeks. Researchers found that group 1 (music and imagery) demonstrated significantly higher levels of secretory IgA than group 2 (music only) and group 3 (control) at the three and six week measures. Group 2 did demonstrate higher levels of sIgA than group 3, but the results did not achieve statistical significance

Danish researchers at the University of Aarhus asked healthy volunteers to use imagery and relaxation techniques in a conscious effort to boost their immune system (Flach & Seachrist, 1994). Volunteers were randomly assigned to two groups; the experimental group utilized imagery combined with relaxation techniques, while the control group utilized relaxation techniques only. Results revealed that volunteers who utilized imagery combined with relaxation techniques demonstrated a significant increase in natural killer cell activity (cells activated by the immune system to fight tumors and viruses) (Sternberg, 2000) compared to volunteers in the control group.

Imagery is most commonly used in psychotherapy. Since the discovery of the potential of imagery in therapy, physicians and clinicians have been incorporating imagery in psychotherapeutic practices. Freud (1952) was recognized for his use of imagery in psychoanalysis. His approaches of free association and dream analysis incorporated the use of imagery. He also developed an imagery technique in which he would press on the patient's head and instruct him or her to notice the images that appeared when he released the pressure. Freud (1952) reported that patients would experience a quick succession of scenes that related to their therapeutic issues. He felt that, since the patient was able to describe the images, this provided the avenue to express and vent the emotions aroused by the images, which in turn allowed for a cathartic experience (Samuels & Samuels, 1988).

Jung also utilized imagery as an integral part of his work and developed two techniques to incorporate images; these include dream analysis and active imagination (Jung, 1958; Jung, 1960; Samuels & Samuels, 1988). Jung believed that "emotionally laden images" (Samuels & Samuels, 1988, p. 185) left unexplored could negatively impact health and well-being. Jung developed his techniques to access the unconscious. In his technique of active imagination, the patient is guided to a relaxed state and describes the images he or she observes. Jung (1960) wrote that the story or the experiences of the individual comes to life in the images. This became an important method of helping him understand the patient (Chodorow, 1997).

Freud and Jung both found that "bringing certain emotionally-charged images into awareness relieved neurotic symptoms" (Samuels and Samuels, 1988, p. 182), and simply experiencing certain images allowed a patient to feel better. Releasing the image from the unconscious and bringing it to awareness allowed the patient to begin to heal or change. Achterberg (1985) also supports the notion that "those systems that use the imagination in its fullest preverbal and transpersonal sense, then, would not only be influencing the biological

processes, but the psychological process as well” (p. 146). These early psychotherapeutic uses of imagery have demonstrated that accessing the unconscious through imagery techniques served as a way of working through experiences and emotions that lay at the heart of the issue for the patient.

Numerous practitioners went on to develop their own variations of therapeutic techniques incorporating imagery. These include active imagination (Jung, 1963) psycho-synthesis (Assagioli, 1965), implosion/flooding (Rachman, 1968), systematic desensitization (Wolpe, 1969), guided affective imagery (Leuner, 1978), waking dreams (Epstein, 1978), systematic desensitization (Wolpe, 1958, 1969), twilight imaging (Progoff, 1963), psycho-imagination therapy (Shorr, 1972, 1978), and cognitive restructuring (Meichenbaum, 1977, 1978).

The development of imagery methods was fostered through Freud’s work in the early 1900s and Jung’s work starting in 1917. Assagioli, Progoff, Rachman, and Wolpe continued to explore and develop the use of imagery in their work through the 1960s and carried into Leuner, Epstein, Shorr, and Meichenbaum’s work through the 1970s. Clinicians explored the various patient needs that could be addressed with the use of imagery. While these approaches continued to develop, imagery practitioners were beginning their investigation of the use of music in the imagery process.

The Bonny Method of Guided Imagery and Music (GIM)

This section provides an overview of the Bonny Method of Guided Imagery and Music (GIM). Bonny’s early work as a music therapist and a member of a research team is reviewed as well as how these experiences influenced and fostered the development of her specialized approach.

GIM is “a depth approach to music psychotherapy in which specifically programmed classical music is used to generate a dynamic unfolding of inner experiences” (Goldberg, 1995,

p.112). The rhythms, melodies, harmonies, and timbres of music are capable of evoking a wide range of images (Bonny & Pahnke, 1972; Clark & Keiser Mardis, 1992). The music facilitates consistent communication with the unconscious, allowing the patient to relinquish their usual control and for images to be projected onto the music (Bonny & Pahnke, 1972). The therapist or guide gives structure throughout the experience by maintaining an ongoing dialogue. This dialogue allows the guide to respond to and explore feelings and images that arise in the experience (Bonny, 1978a).

Helen Bonny developed GIM in the early 1970s. The method evolved from her work as a music therapist at the Maryland Psychiatric Research Center. She found that “when subjects listened to carefully selected programs of classical music in a relaxed state, powerful feelings and symbolic images were evoked, leading to significant insights into therapeutic issues” (Goldberg, 1995, p. 112). Bonny’s research stemmed from her desire to find a method to induce a therapeutic experience similar to the experience in hallucinogenic drug psychotherapy. Her desire was to mirror the therapeutic approach without the use of drugs.

Music was used in drug research to help the patient release control and move more fully into the inner world experience, facilitate the release of intense emotions, contribute to a peak experience, provide continuity in an experience of timelessness, and structure the experience (Bonny, 1980). The drug introduced in the therapeutic setting proved to be a profound therapeutic catalyst, as patients experienced a cathartic release, and an overall more intense sensory experience (Bonny & Pahnke, 1972). Based on her observations in the drug research, Bonny reasoned that, if music enhanced the sensory experience (Godfrey, 1967) and facilitated the action of the drug (Sherwood et al., 1962), then music alone might be just as effective (Bonny, 1980). She found that subjects were able to experience the inner images and emotions of the unconscious with the music and without the drug (Bonny & Pahnke, 1972).

In developing and refining the GIM method, the theories and works of Freud, Jung, and Maslow influenced Bonny. She was also influenced by the imagery techniques of Assagioli (1965, 1969). Bonny later introduced a relaxation phase prior to the onset of the music. The relaxation exercises were based on techniques developed by Jacobson (1938) and by Schutz and Luthe's (1959) Autogenic Training. The introduction of the relaxation phase was also suggested by Leuner's (1969), which was known as Guided Affective Imagery (GAI). Bonny felt this relaxation phase helped to increase the subject's initial focus (Bonny & Pahnke, 1972).

The psychotherapeutic influences and applications of GIM will be discussed in the review of literature section in Chapter 2.

Guided Imagery and Music Research

This section reviews case studies and research incorporating GIM. Much of the literature surrounding this approach is qualitative and in the form of case studies. To date, only a small number of studies have been conducted utilizing an experimental design with this therapeutic method.

The research focusing on the Bonny Method of Guided Imagery and Music is limited. There are currently around one hundred certified practitioners worldwide (AMI, 2005). The small number of practitioners has limited the amount of research that has been conducted. Due to the increasing number of individuals completing GIM training in recent years, the amount of GIM research being conducted is increasing.

As stated previously, a large portion of the literature pertaining to GIM is in the form of case studies. These case studies have explored the use of GIM in a wide range of clinical populations, as described below. Bonny (1978b) reported using GIM with long-term, inpatient psychiatric clients suffering from a personality disorder. Based on her clinical observations, she found sessions were characterized by swift mood changes, intense abreactions, and some

disorientation, but that the patients were making adequate to optimal adjustment to the outside environment.

In her clinical GIM sessions with elder residents in long-term care, Summer (1981) observed increased self-awareness, improved self-acceptance, and improved interpersonal relationships. Nolan (1983) explored the use of GIM with short-term forensic clients. He found through his clinical observations that the incarcerated clients were able to work through dependency issues, process their experience of being alone, and work through emotions related to repressed trauma.

Stokes (1985) treated patients suffering from chronic pain who had undergone multiple surgeries, implants, utilized pain killers, or were considered disabled. The subjects in this short-term pilot study participated in group and individual GIM sessions. These sessions provided the subjects with emotional support, a means to access repressed feelings, and a process to access unconscious material. Goldberg (1989, 1995) has applied GIM to her work with clients on a short-term psychiatric intensive care unit. The GIM sessions provided avenues for the clients to work through issues surrounding grief, loss, depression, panic, and divorce.

A variety of case studies utilizing GIM have been presented in the literature. These cases have included individuals diagnosed with a variety of mental health disorders: depression (Nolan, 1983; Zwerling, 1979), multiple personality disorders (currently referred to as dissociative identity disorder)(Pickett, 1991; Pickett & Sonnen, 1993), victims of abuse (Borling, 1992; Rinker, 1991; Tasney, 1993), dual or co-occurring diagnoses of depression and substance abuse (Pickett, 1991), post-traumatic stress disorder (PTSD) (Blake, 1991), autism (Clarkson, 1998-99; Clarkson, 1995), depression (McKinney, Antoni, Kumar, & Kumar, 1995), and grief and loss issues (Smith, 1996-97). Additionally, case studies have focused on the use of GIM for individuals coping with various medical or physical health issues. These included a woman

suffering with brain damage (Goldberg, Hoss, & Chesna, 1988), women coping with fibroid tumors (Pickett, 1987), women recovering from a mastectomy (Hale, 1992), men diagnosed with AIDS (acquired immune deficiency syndrome) (Bruscia, 1992), individuals diagnosed with a type of arthritis called ankylosing spondylitis (1993), and women during pregnancy (Short, 1993).

Several case studies have explored the use of GIM with clients in chemical dependency treatment, using individual and group therapy sessions. These case studies are reported in Chapter 2, along with studies relating to types of imagery experienced in GIM sessions. To date, no experimental research has been conducted utilizing GIM with individuals in chemical dependency treatment.

Summary

Millions of Americans struggle with an addiction to drugs or alcohol each year. Individuals undergoing substance abuse treatment can present with a variety of needs to be addressed: interpersonal relationships, legal consequences (DWI), medical and health issues, other psychiatric or mental health diagnoses, as well as financial and employment struggles. While some of these needs are issues that have led to abusing the substance, such as struggles in relationships, depression, anxiety, or pain; some of these issues are a result of substance abuse (McNeece & Barbanell, 2005). Substance abuse can cause legal, financial, and employment problems; negatively impact physical health; and interpersonal relationships. These needs are multifaceted, including both psychological and physiological aspects. Therefore, in order to meet the myriad needs presented by patients in substance abuse treatment, a multifaceted approach may be warranted.

Research has demonstrated that stressful life events and prolonged stress negatively impact health and well-being (Davis et al., 1995; Seyle, 1993; Sternberg, 2000). Managing these stressors is critical to reducing the negative impact of stress on the mind and body (Antonovsky,

1987; Seyle, 1993). Imagery and music have long been employed to address to physical, emotional, and psychological needs in numerous cultures (Achterberg, 1985; Weldin and Eagle, 1991). When imagery and music methods are combined, individuals are able to express deeper and more complex emotions (Bonny & Tansill, 1977; Bonny & Pahnke, 1972; Grof, 1988), as well as access information that lies within unconscious awareness (Blake, 1994; Bonny 2002; Bonny & Savary, 1973; Goldberg, 1995; Wransjo & Korlin, 1995;).

Researchers have discovered that music and imagery provide a vehicle for individuals to address and work through psychological issues, repressed emotions, traumatic experiences, and grief and loss issues. These issues contribute to how individuals cope with stress in their lives. Addressing these issues initiates the process of helping the individuals improve their overall health and well-being. GIM allows an individual to explore, address, and resolve these issues. Because these are similar problem areas for individuals with chemical addictions, testing the effectiveness of GIM with this clinical population is needed.

Statement of the Problem

A wide array of approaches incorporating music and imagery are being applied in the treatment of psychological and physical diseases. Previous research has demonstrated that both music and imagery affect psychological and physiological aspects of human functioning. These findings indicate that further systematic investigation into the psychological and physiological effects of the combined use of music and imagery is needed.

Because the Bonny Method of Guided Imagery and Music (GIM) allows for the release of emotions and emotional memories, it seems warranted to further examine the effects of the method on measures related to psychological and physiological functioning. The vast majority of studies incorporating GIM are case studies, which cannot be replicated. Despite the amount of anecdotal evidence that exists in the GIM literature, no experimental research investigating the

method with individuals in chemical dependency treatment has occurred to date. The incidence of chemical dependency in American society is significant. The 2003 National Household Survey on Drug Abuse estimates that 19.5 million Americans are current illicit drug users (meaning they engaged in using an illicit drug at least once during the past 30 days), while 33 million individuals engaged in binge drinking (meaning they drank five or more drinks on one occasion during that 30 day period). Individuals dealing with chemical dependency issues face increased risk of mental health and general physical health issues (Cook, 1998; Gordon and Lieber, 1986; Pavia et al, 2004; Szabo, 1997). Given that the literature that does exist on GIM consists mostly of case studies and the negative impact of chemical addiction on health, further study is warranted with more rigorous, empirical designs.

This present study examined the effect of a series of weekly GIM sessions on individuals undergoing chemical dependency treatment to address issues related to interpersonal relationships, comprehending and managing the events that occur in one's life, and improving immune function. The dependent measures included Immunoglobulin A levels, interpersonal problems, and sense of coherence (meaningfulness in one's life, one's ability to manage life and comprehensibility in one's life). Operational definitions for interpersonal problems and sense of coherence are included at the end of this section.

The study used a two-group experimental design (GIM treatment condition and the wait list control condition). The within-group variable was length of treatment and included repeated measures of the three dependent measures listed above. The method utilized is described thoroughly in Chapter 3.

Purpose and Hypotheses

The purpose of this study was to investigate the effect of GIM (Bonny, 1978a) on interpersonal problems, sense of coherence, and salivary Immunoglobulin A levels in a sample of

adults undergoing inpatient chemical dependency treatment. Refer to definitions and operational terms later in this chapter for complete descriptions of measures utilized for the study. The present researcher poses the following alternative hypotheses.

1. Subjects assigned to GIM sessions will report a decreased number of interpersonal relationship issues from the pretest to the posttest as measured by the Inventory of Interpersonal Problems: Short Circumplex form (IIP-SC) when compared to those who do not receive GIM.
2. Subjects assigned to GIM sessions will report an increase in manageability, comprehensibility, and meaningfulness of their life from the pretest to the posttest as measured by the Orientation to Life Questionnaire (Sense of Coherence Scale) when compared to those who do not receive GIM.
3. Subjects assigned to GIM sessions will experience an increase in immune function from the pretest to the posttest as demonstrated by an increase salivary Immunoglobulin A levels when compared to those who do not receive GIM.

The role of GIM is to address psychological and mental health issues. The GIM process allows the individual to begin to uncover latent repressed material, which has not been addressed and is interfering with the individual's ability to manage interpersonal and intrapersonal relationships. This therapeutic process fosters and allows emotions that have gone unresolved or unexpressed to be released. These may include emotions that have been suppressed or denied, such as anger, depression, anxiety, and/or grief. The process also allows for an individual who has encountered a traumatic event (e.g., natural disaster or abuse) to begin to process those experiences and emotions and find resolution. In turn, this can mean the individual no longer has the need or desire to utilize a substance because the very issue that prompted the behavior has been resolved.

When these issues are addressed therapeutically, new methods of managing life's challenges can be developed. This, in turn, allows an individual to decrease the number of interpersonal and intrapersonal problems experienced, improving the ability to cope with life stressors in general. As an individual is better able to cope, the negative impact of stress is reduced. When the impact of stress is reduced, immune function is improved, resulting in an increase in salivary immunoglobulin A.

Operational Definitions of Terms

The Bonny Method of Guided Imagery and Music

GIM is a method defined by Bonny as “a technique which involved listening to music in a relaxed state to elicit imagery, symbols, and/or feelings for the purpose of creativity, therapeutic intervention, self-understanding and religious (spiritual) experience” (Summer, 1988, p. 10). GIM is a method of self-exploration that incorporates specifically selected sequences of classical music. Listening to therapist-selected music in a relaxed state allows images to come into conscious awareness, while the client simultaneously shares these images with the guide as they occur (Clark and Keiser, 1986). (See Appendix A for a more extensive description of GIM, including the structure of a GIM session).

Chemical Dependency

The Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV-TR), classifies any chemical addiction under substance-related disorders. Substance or chemical dependence is defined as “a maladaptive pattern of substance use, leading to clinically significant impairment, distress” (APA, 2000, p. 110). To receive this diagnosis, an individual must demonstrate three or more of the seven criteria outlined in the DSM-IV-TR anytime in a twelve-month period. These seven criteria include the following: (a) tolerance in which increased amounts of a substance are required to reach the desired result or a diminished impact is

experienced when the same amount of the substance is utilized; (b) withdrawal symptoms are experienced; (c) an increased use of the substance is demonstrated over time; (d) efforts to control substance use are unsuccessful; (e) a significant amount of time is spent working to secure the substance; (f) the use of the substance interferes with social, work, and recreational activities; and (g) substance abuse continues despite awareness of the problematic nature of its use. (See Appendix A for a more in-depth delineation of the seven criteria for substance dependence).

For this study all of the participants had received a diagnosis of substance dependence and had been admitted to an inpatient chemical dependency treatment program.

Addiction

Addiction refers to the physiological dependence on a psychoactive substance. It also includes how substance abuse impacts relationships, work, and recreational activities (McNeece & Barbanell, 2005). Additionally, some psychoactive substances do not induce a physiological dependence but bring about a psychological dependence the term encompasses as well. Doweiko (2002) also identifies that addiction is defined by a preoccupation with the substance and an “inability to control the use of the drug(s)” (p. 13).

Substance dependence

Physiological dependence is indicated by an acquired tolerance of a substance or by the withdrawal from the substance (APA 2000). Physiological dependence creates strong cravings, and this is what fosters addictive behavior (McNeece & Barbanell, 2005). Additionally, the individual may use the substance to avoid or relieve the unpleasant symptoms experienced as a part of withdrawal (APA, 2000).

Salutogenesis

Salutogenesis is a term created by Aaron Antonovsky. The term describes a concept of exploring the relationship between stress, one’s ability to cope, and health (Wransjo & Korlin,

1995). Antonovsky (1987) developed this concept from in-depth interviews with survivors of concentration camps and survivors of other life traumas. He delineated three health-promoting factors: sense of comprehensibility, manageability, and meaningfulness. Salutogenesis is the underlying concept for the Sense of Coherence Scale. (See Appendix A for a further description of salutogenesis and a copy of the Sense of Coherence Scale).

Individuals who abuse or develop an addiction to drugs or alcohol frequently feel unable to manage life situations and events, and use a substance as a means of coping. This maladaptive method of coping interferes with feeling capable in life and achieving a sense of coherence, as defined below.

Sense of Coherence

Antonovsky (1987) defines sense of coherence as a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that 1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable (comprehensible); 2) the resources are available to meet the demands posed by these stimuli (manageable); 3) these demands and challenges are worthy of investment and engagement (meaning) (p. 941).

A strong sense of coherence is “associated with effective coping, reduced stress, fewer health damaging behaviors, and, ultimately, improved morale, somatic health, and social adjustment” (Antonovskky, 1987, p. 942). When an individual is better able to cope with life stressors, he is less likely to turn to maladaptive methods of coping, therefore, reducing the likelihood of developing a chemical addiction. This improved sense of coherence can then demonstrate a positive impact on life through an improved ability to cope (Antonovksy1986, 1987).

Interpersonal Problems

Interpersonal problems are those relating to or involving relationships between people. Interpersonal problems stem from how an individual interacts and relates to others. The Inventory of Interpersonal Problems: Short Circumplex form (IIP-SC) categorizes qualities of these interactions and behaviors into eight categories: domineering, vindictive, cold, socially avoidant, nonassertive, exploitable, overly nurturant, and intrusive. Interpersonal problems often cause or increase stress and frequently are at the center of psychotherapeutic work. (See Appendix A for the Inventory of Interpersonal Problems: Short Circumplex form (IIP-SC)).

Psychosocial Stress

A stressor is defined as an agent or condition that “disrupts equilibrium or produces strain” (Seyle, 1993, p. 9). Psychosocial stressors include major life events, such as divorce, unemployment, financial struggles, loss of a loved one, health issues, and the birth of a child. Psychosocial stressors also include everyday demands such as heavy workloads, conflict in relationships, and pressures of school (Davis, Eshelman, & McKay, 1995).

Salivary Secretory Immunoglobulin A (IgA)

Secretory IgA “protects the mucosal membranes from invading organisms and plays an important role in mucosal defense against upper respiratory tract infections” (Lane, 1991, p.19). Research suggests that IgA levels decrease significantly in the presence of stress.

Summary

Music and imagery have played a role in health and healing practices throughout history. While music and imagery have each been utilized independently to foster healing in a variety of clinical settings, their combined use has also been implemented to meet the physiological and psychological needs of patients. GIM has been utilized to meet the needs of patients living with various medical and mental health issues. Individuals struggling with substance abuse are often

dealing with co-morbid mental health and medical complications. This requires a method of treatment that addresses the complex needs of this patient population. This study will explore the role of the Bonny Method of Guided Imagery and Music on the psychological and physiological health of adults receiving chemical dependency treatment. Chapter 2 provides an overview of the use of music and imagery in psychotherapy, chemical dependency, and the impact of stress on immune system.

CHAPTER 2
REVIEW OF LITERATURE
INTRODUCTION

This chapter includes an exploration of the extent to which chemical dependency impacts society and the lives of those addicted. This includes reviewing manners of coping and managing stress and how this influences overall immune function in individuals that are addicted. Lastly, the chapter includes a review of how these issues are addressed in psychotherapy, how it impacts immune function and how the combined use of music and imagery are employed as an approach to address the myriad of issues in chemical dependency treatment.

Music, Imagery and Psychotherapy

Although Helen Bonny developed the Bonny Method of Guided Imagery and Music using music as a key component to the approach, several psychiatrists and psychotherapists also recognized the value of music in the psychotherapeutic process. Some of these individuals incorporated music into their own imagery approach and in a number of cases even worked with Helen Bonny and consulted with her due to her knowledge and expertise in this area.

In 1956, Carl Jung had an encounter with Margaret Tilly. Tilly was a concert pianist and a music therapist at Langley Porter Psychiatric Institute in San Francisco. Jung invited Tilly to his home in Zurich. During this visit, Jung shared with Tilly that he had never been very impressed with music therapy, but that he was quite interested in her writings.

Tilly quickly recognized that Jung understood how emotional a music experience can be. She then demonstrated uses of music and her work on Jung's grand piano. Jung experienced the impact of music on emotions. His understanding of imagery in the psychotherapy process and this new awareness of the impact of music, introduced him to the idea of how music can better allow the therapist to access the depths of unconscious material. Music better facilitates

the therapist's ability to access this material and provides a vehicle for fully expressing the emotions tied to this material. These therapeutic elements are necessary for the client to find resolution and develop healthier methods of coping.

Hanscarl Leuner also began to explore how music could be utilized with his approach, Guided Affective Imagery therapy. Leuner himself did not write about his uses of music with guided affective imagery. Bonny identifies the impact of her experiences with Leuner at the Maryland Psychiatric Research Center and her observations of his work. She recounts, "He was using music to intensify and provide for an affective response within the set imagery sequence" (Bonny, 2002, p. 13).

Stanislov Grof (1988) acknowledges the use of music in healing traditions of many cultures and that the music is utilized to induce a trance or an altered state of consciousness. He therefore chose to incorporate music in the program of psychedelic therapy at the Maryland Psychiatric Research Center in Baltimore, Maryland. He instilled the expertise of Helen Bonny to develop the music programs for this therapy process. It was through his experiences with Helen and the psychedelic research that he further discovered how music can influence the state of consciousness and that prompted him to incorporate music in his holotropic therapy.

Grof (1988) recognized that music can mobilize old emotions, thus bringing them to a point where they can be expressed. He also identified that music deepens and intensifies the process and gives the therapeutic experience a meaningful context. He felt that music provided a continuous flow that carries the client through difficult experiences and impasses in session and helps the client surrender and let go of their defenses.

There is limited research around these various methods of imagery in the psychotherapeutic process. The research that is available does not indicate that music has been incorporated into the method during the course of the research. More specific research utilizing

music and imagery in psychotherapy lies within the body of research on the Bonny Method of Guided Imagery and Music.

Guided Imagery and Music and Chemical Dependency Treatment

The Bonny Method of Guided Imagery and Music was developed from Helen Bonny's work along with a group of research scientists at the Maryland Psychiatric Research Center in the late 1960's (Bonny, 2002). The research focused on the use of LSD and other psychedelic drugs in therapeutic interventions for chemically dependent and addicted patients. Bonny was invited to become a part of the research team to select the music and develop music programs to be incorporated in the therapeutic experience. Bonny reports that "the team of therapists at MPRC have experimented with the use of music in more than 600 drug sessions during a period of several years and agree that music is a very effective stimulus and complement to drug action (Bonny, 2002, p. 22).

Bonny's experiences at MPRC were the impetus for the development of the Bonny Method of Guided Imagery and Music. Bonny discovered that individuals who imaged with the use of LSD developed a selective amnesia recalling little of the session. In contrast, the absence of LSD allowed the imager to easily recall the experience (Summer, 2002).

Additionally in the early 1970's the political and national climate had changed. An anti-drug campaign was moving to the forefront and psychedelic drug research soon became suspect, discouraged and experienced a lack of support by the public and mental health professionals. These factors fostered the exploration of non-drug stimuli for the imagery experience; thus began Helen Bonny's exploration into the use of music as the therapeutic catalyst (Bonny, 2002).

The earliest account of GIM with clients in chemical dependency treatment is a case presented by Bonny and Tansill in their 1977 paper entitled "Music Therapy: A Legal High". The case study provides accounts of the six session series that occurred over a five month time period. During the course of therapy, the client also entered a vocation training program, secured his own

housing, and began to develop social relationships. The client demonstrated a significant change in severity of illness according to an overall MMPI score. The client demonstrated significant improvement self-esteem and ego strength.

Despite the fact that GIM originated from sessions with individuals undergoing drug treatment, limited exploration continued in this clinical realm. Summer (1988) believes that GIM can assist the client in achieving sobriety (letting go), which is the first step in the twelve step Alcoholics Anonymous (AA) process. Summer further states that GIM brings to light issues that often interfere with the therapy process and sobriety. And furthermore, that “GIM changes the basic addictive formula from tension – alcohol – tension reduction to tension – GIM – tension reduction” (p. 43).

Borling (1992) proposes a rationale for the use of GIM in the recovery process of addictions. He suggests that GIM can assist in dealing with emotions that have long been denied or repressed, often the very emotions that may have fueled the addiction. Confronting these emotions begins the process of changing old behavior patterns.

Pickett (1991) described her work with a woman with a dual diagnosis, including addiction to alcohol. She identifies that it was during the course of the GIM sessions that the client began to confront her feelings of rejection, deprivation and abuse. Pickett purports that the creative process of GIM allows the client to discover their own human potential and ability to heal.

The most recent publication of GIM with individuals in chemical dependency treatment is by Ruth Skaggs. She provides accounts and case illustrations of her work with this population in her book entitled, *Finishing Strong: Treating Chemical Addictions with Music and Imagery* (1997). Skaggs identifies that the complexities and scars of addicted individuals are often the result sexual, emotional, physical, and verbal abuse. These issues are then compounded with

fears, a lack of control and helplessness, and self-defeating behaviors. She suggests that to achieve sobriety, these images and memories must be brought into conscious awareness, be reorganized and replaced with images of hope, strength, and self-confidence.

Skaggs also writes that the music and imagery process is beneficial in the treatment process in that it allows clients to: view their life from various perspectives, develop a sense of inner trust, resolve internal conflicts, alter moods, develop self awareness, experience a healthy model of coping, and create a sense of cohesion with the fragmented parts of one's life. The GIM experience allows the individual to access and confront those parts of themselves that they have utilized the substance to avoid and repress.

The author provides accounts of numerous images that individuals experienced during the GIM sessions. The images and experiences of addiction included: seeing the internal tug of war, seeing the struggle between the good self and the addicted self, seeing the addiction as a steel ball covered with spikes, seeing herself walking down a deserted street trying to buy drugs and heading toward death, and watching himself destroy his life. The imagery illustrations also include images of healing and recovery. Images include reflections of themselves transformed from the addiction, walking down a path filled with peace and serenity, and experiencing the ability to walk away from the drug of choice.

Despite the fact that GIM has its roots in substance abuse and addictions treatment, little research exists in this area. Clinicians have provided anecdotal support and rationales for the implementation of this approach in this clinical arena, however, research has not been conducted to date with regard to this particular client population.

Chemical Dependency

Chemical dependency is perhaps the most common disease encountered by modern medicine. In 1991, C. Everett Koop, the United States Surgeon General announced that, "An

estimated 18 million adult Americans have medical, social, and personal problems directly related to the use of alcohol, as do several million adolescents for whom alcohol is an illegal drug” (Milkman & Sederer, 1990, p.7). The figures he reports are from the 1991 National Household Survey on Drug Abuse. The Department of Health and Human Services and the Substance Abuse and Mental Health Services Administration regularly conducts a national household survey on drug abuse to better assess the extent of chemical dependency in the United States.

The 2003 survey estimates that 19.5 million Americans are current illicit drug users. This means that they had engaged in using an illicit drug at least once during the 30 days prior to the interview. This number represents 8.2 percent of the population 12 years old and older. This is a significant increase from the 1991 survey. The 2003 survey results indicated that 113 million persons age 12 and over reported current use of alcohol, meaning they used alcohol at least once during the 30 days prior to the interview. About 33 million of this group engaged in binge drinking, meaning they drank 5 or more drinks on one occasion during that 30 day period. 12 million were heavy drinkers, meaning they had 5 or more drinks on one occasion 5 or more days during the past 30 days.

A National Longitudinal Alcohol Epidemiological Survey (NLAES) was conducted by the Bureau of the Census in 2003. This included face-to-face interviews with 42,862 respondents age 18 and older. The study was designed to better understand drinking practices, behaviors and related problems in the general public. The survey included an extensive set of questions designed to assess the presence of symptoms of alcohol abuse and dependence during the prior 12 months. The questions were based on the criteria from the Diagnostic Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (American Psychiatric Association, 1994). NLAES estimates that 4.4 percent of adults were alcohol dependent and another 3 percent were classified as abusing alcohol with the past year.

The 2002-2003 United States National Probability Sample of Non-institutionalized Abusers between 15-54 years of age, provides statistics on individuals meeting the diagnostic criteria relating to drug and alcohol use. This sampling utilized the diagnostic criteria from the DSM-III-R. The results indicate that roughly 14% met the diagnostic criteria for alcohol dependence at some time in their lives, 7% having met the criteria within the last year. The survey also reported that 7% of the population engaged in non-medical use of amphetamines, while 4% of those surveyed met the criteria for cannabis dependence or abuse at some time in their lives. Twelve percent of those surveyed had used cocaine one or more times in their life and 3% had used cocaine within the last year. Eight percent of those surveyed reported using hallucinogens or PCP at least one or more times in their life. Two and a half percent of those surveyed used analgesics or pain medications for non-medical purposes within the last year, while .7% had used them within the last month and 4% had used sedatives for non-medical purposes.

The Executive Office of the President and Office of Drug Control Policy (ONDCP) conducted a study in 1996-2002 to evaluate the economic costs of drug abuse in the United States. The study was published in July 2003 and indicates that the overall cost of drug abuse to society increased by a rate of 5.9% annually. Thus by 2002 the societal cost of drug abuse was \$143.4 billion. The study estimates that by 2003 the cost would rise to \$152.5 billion and by 2004 to \$160.7 billion. In the first half of 2002, hospitals in the United States reported 292,098 estimated drug related emergencies in which illegal drugs were the presenting problem and 535,646 emergency room visits in which drugs were mentioned in the physicians report but were not the presenting problem (SAMSHA, 2001a).

These statistics illustrate the widespread and national problems of substance use and abuse (McNeece & Barbanell, 2005). The statistics seem overwhelming and yet chemical dependency is rarely diagnosed (Doweiko, 2002) and even the experts are still in disagreement as

to whether it is a disease or a behavior problem (McNeece & Barbanell, 2005). These issues related to diagnosis are simply one point of consideration. There are additional factors even when the diagnosis is given.

Even in instances when the diagnosis is given and treatment is recommended many individuals still do not undergo treatment. The 2003 National Survey on Drug Use and Health (NSDUH) reported that 41.2% of those surveyed were not ready to stop using, 33.3% encountered cost or insurance barriers, 19.6% decided to forgo treatment because of the stigma have having a chemical or drug addiction, 17.2% did not feel the need for treatment or they could handle the problem without treatment. Others surveyed reported access barriers to treatment, they felt would not help, they did not know where to go for treatment or they did not have the time to go to treatment.

Many issues complicate the process of recognizing an addiction and the individual receiving the necessary treatment. The challenge for families and healthcare providers is that chemical dependency and addiction expresses itself differently from one individual to the next. The addiction may manifest itself differently in an individual depending on the duration of the addiction or use, the individual's overall health, financial situation, social and personal resources (Edwards & Lader, 1994; Doweiko, 2002; Buelow & Buelow, 1998; Wilcox & Erickson, 2005).

Symptomology

The American Psychiatric Association (APA) developed diagnostic criteria in an attempt to organize various definitions of mental disorders, including substance dependence and abuse, contained in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, 2000). The manual was originally developed to facilitate research of mental disorders improve communication among clinicians and researchers, and function as an educational tool for teaching psychopathology (DSM-IV-TR, p. xv). However, most importantly the manual was designed as a

practical and useful guide to help practitioners provide accurate diagnoses (based on the diagnostic criteria).

Despite the fact that addictions are expressed differently from one individual to the next, healthcare professionals have delineated hallmarks or pillars of addiction. McNeece & Barbanell (2005) noted three elements necessary for the diagnosis of alcoholism. These elements include:

1. A deterioration of work performance, family relationships and social behavior.
2. Withdrawal symptoms following a period of abstinence from the substance and symptoms severe enough that the individual would try to avoid them by resuming use of the substance.
3. Medical complications relating to the use of the substance, such as cirrhosis of the liver, nutritional disorders and neurological damage.

The American Psychiatric Association (2000) identifies the following as pillars of addiction; tolerance, dependence and withdrawal. Tolerance is the need for increased amounts of the substance to achieve the desired effect. McNeece & Barbanell (2005) postulate that an individual's tolerance of a substance is often indicative of the level of dependence, and an individual's withdrawal from the substance is indicative of the level of tolerance. Withdrawal occurs when the blood or tissue concentrations of the substance decline in the individual that has demonstrated heavy use. It is typically expressed through a variety of unpleasant symptoms, including cravings to readminister the substance, insomnia, sweating or increased pulse rate (greater than 100), hand tremors, nausea or vomiting, transient hallucinations or illusions, psychomotor agitation, anxiety and grand mal seizures (DSM-IV-TR, 2000).

McNeece and Barbanell (2005) identify three hallmarks that define addiction. These include tolerance, physical dependence and psychological dependence. Flores defines physical dependence as, "an altered physiological state produced by repeated administration of a drug" (p. 305) and continued use is required to remain in this altered state. Psychological dependence is an emotional drive to continue taking the substance and the individual feels this substance is necessary to his or her well-being.

The Expert Committee on Drugs of the World Health Organization (WHO) coined the term “drug dependence” and defined it as “a state of psychological and/or physical dependence resulting from chronic use of a drug” (Kinney, 2000, p.134). They further proposed that the nature of the dependence varies from drug to drug. They therefore describe several specific types of drug dependence:

1. opiate type
2. alcohol-barbiturate (depressant) type
3. amphetamine (stimulant) type
4. hallucinogenic (LSD – etc.) type
5. cannabis (marijuana) type

This system is similar to the system utilized in the DSM-IV-TR. This system is flexible in that as new drug categories are discovered, they can be added to the list. It also recognizes a dependence on one drug is quite different from another and that the term dependence shifts the emphasis from the user to the drug itself. The word addiction places the focus on the excessive behavior of an individual, while the term dependence describes the characteristics of the drug (Kinney, 2000; McNeece & Barbanell, 2005).

The full diagnostic criteria for the various diagnoses relating to substance abuse and dependence will not be provided within the body of this paper. Refer to the DSM-IV-TR for a full listing of all the diagnostic criteria. It is important to note these hallmarks are essential to diagnosing define abuse or dependence to a substance. According to the DSM-IV-TR an individual must meet three of the criteria to receive a diagnosis of substance dependence (this is not a complete listing of the diagnostic criteria; for a complete listing please refer to the DSM-IV-TR). The three of the following symptoms must be present within the same 12 month period:

1. increased tolerance to the substance
2. withdrawal from the substance
3. increased amounts of time are spent obtaining the substance
4. social, occupational and recreational activities are altered due to the use of the substance
5. substance use continues despite persistent or recurrent physical or psychological problems directly relating to the use of the substance.

The diagnostic criteria for substance abuse vary from substance dependence. The diagnosis for substance abuse does not include the hallmarks of tolerance, withdrawal, or the compulsive use of the substance. Instead the focus is on the harmful consequences related to the repeated use of the drug. These symptoms include substance use leading to significant impairment or distress, failure to fulfill major obligations, recurrent use in situations where it is physically hazardous (driving, operating a machine, swimming, rock climbing), recurrent legal problems relating to substance use, and continued use despite social and interpersonal problems.

McNeece and Barbanell (2005) define substance abuse as, “the persistent administration of a drug for purposes (for kicks or to escape) that are not medically indicated” (p. 7). He describes misuse as a behavior in which the individual feels the drug is necessary to maintain their well-being and that it is characterized by overwhelming involvement in obtaining the drug. Essentially the time it takes to find and use the substance begins to consume and overrun the life of the individual.

A diagnosis of substance abuse is more common for individuals who have recently started taking a substance. Some individuals continue to experience substance related consequences over a long period of time without developing dependence to the substance or meeting the criteria for a diagnosis for substance dependence. The DSM-IV-TR also includes diagnostic criteria for other classes of substances. These include amphetamines (such as speed and diet pills), caffeine, cannabis (marijuana and hashish), cocaine (crack and ‘rocks’), hallucinogens (LSD and ecstasy), inhalants (gasoline, paint thinner, glue, spray paints and halogenated hydrocarbons found in cleaners, typewriter correction fluid, spray-can propellants), nicotine (cigarettes, chewing tobacco, snuff, pipes, cigars), opioids (morphine, heroine, codeine and methadone), phencyclidine (PCP, angel dust, hog and tranq), and sedatives, hypnotics, and anxiolytics (anti-anxiety substances, including barbiturates and sleeping pills). There is also a

category for polysubstance abuse. This classification is used when no single substance is predominant (APA, 2000).

Chemical Dependency and Coping

The genesis of substance use and dependence varies from person to person, as do the theories surrounding it. There is not one explanation for why people become addicted to drugs or alcohol (Milkman & Sederer, 1994; Edwards & Lader, 1994; McNeece & Barbanell, 2005). In fact, there are multiple risk factors involved: an individual's psychological state [using the substance to relieve stress, anxiety or tension] (Gottheil, Druley, Pashko & Weinstein, 1987; Wilcox & Erickson, 2005), psychopathology (Robson, 1999; Estes & Heinemann, 1982; Doweiko, 2002; Wilcox & Erickson, 2005), family history, biology, and genetics (Galanter & Kleber, 1999; Leonard & Blane, 1999; Wilcox & Erickson, 2005), social and cultural influences (Dodgen & Shea, 2000; Estes & Heinemann, 1982; Hawkins, 2005), and medical conditions (Schukit, 2000; DiNitto & Webb, 2005). Due to the many factors influencing the process, numerous theories have been formulated and explored.

Researchers have concluded that biological factors are a crucial component in this phenomenon (Milkman & Sederer, 1994; McNeece & Barbanell, 2005). However, the genetics and biology have not been the only factors that influence individuals. In the diagnostic criteria, the physiological aspects of chemical dependency are addressed, along with the psychological aspects of dependency and abuse. Researchers (Doweiko, 2002; Wilcox & Erickson, 2005) argue that the use of one model of treatment, merely focusing on the biological aspects of addictions, is not effective treatment. The psychological component is an essential factor in the process of treatment.

Through the centuries, many people have experimented with substances that possess the ability to produce or alter a particular mood. An unfortunate consequence is that over time it can

lead to a compulsion, loss of control, or a continuation of use despite the harmful effects of the substance. Some theorize that the widespread abuse of drugs and alcohol is a consequence of an innate desire or a need to change the way one feels (Dodgen & Shea, 2000; Leonard & Blane, 1999; Milkman & Sederer, 1994; Edwards & Lader, 1994; Kessler, Zhao, Nelson, Hughes, Eshleman, Hans-Ulrich & Kendler, 1994).

Some research indicates a relationship between chemical dependency and various forms of psychopathology (Vaillant, 1983; Wolkstein, 2002). Researchers report that individuals with a diagnosis of major depression are seven times more likely to also be diagnosed with a drug use disorder (Wise, Cuff and Fisher, 2001). Kessler, Nelson, McGonagle, Edlund, Frank & Leaf (1994) found that 41 percent of those with any Axis I mood (affective) disorder, also have some type of addictive disorder. Thirty eight percent of those diagnosed with an anxiety disorder also have an addictive disorder. And 82 percent of those diagnosed with an Axis II disorder (conduct disorder or adult anti-social behavior also have an addictive disorder. Khantzian (1999) found that addicts often reported sensation seeking and anxiety reduction as reasons why they began daily opiate use.

Edwards and Lader (1994) report there is no evidence that demonstrates that depression leads to dependency on any drug. However, Merikanagas, Mehta, Molnar, Walters, Swendsen, Aguilar-Gaziola, Bijl, Borges, Caraveo-Anduaga, DeWitt, Kolody, Vega, Wittch & Kessler (1998) completed an international study based on six countries. They also found strong associations between substance use disorders and mood, anxiety, conduction and antisocial personality disorders across their sites.

The National Clearinghouse on Child Abuse and Neglect Information (2001) reports that alcohol and drug related family violence remains high, with an estimated 826,000 child victims of family violence in 1999. The National Institute for Alcohol Abuse and Alcoholism (NIAAA,

2000) report that as many as 60 percent of male alcoholics were violent toward a woman partner within the last year, and alcohol is also implicated in 30 percent of all child abuse cases.

Liebsuchultz, Mulvey & Samet (1997) found that 42 percent of the women they sampled who were seeking chemical dependency treatment had been physically or sexually abused at some point in their lives. Windle, Windle, Scheidt & Miller (1995) found that of the individuals undergoing inpatient treatment for alcoholism, 49% of the women and 12% of the men reported they had been sexually abused.

It is clear from the research that substance use and abuse is linked to mood states, various types of abuse and psychopathology. The genesis of the addiction is not the only aspect to explore when trying to understand coping and chemical dependency. Quinn and Shepard & Rose (1973) conducted a National Quality of Employment Survey and the results revealed that a variety of stress indicators including low self-esteem and depression were associated with escapist drinking. Dare (1998) also explored the issue of individual's utilizing a substance to alter their affect following a particular experience. The model demonstrates how the individual experiences or recalls a painful experience, which produces a negative affect or emotion. Khantzian (1999) and Forrest (1985) hypothesized that addicts turn to a chemical in order to regulate their internal life, more specifically their emotional state. The individual does not wish to experience these feelings and uses a substance to alter their affect. The pattern is maintained as the individual continually attempts to escape the negative emotional experiences.

According to the National Household Survey on Drug Abuse, one in ten Americans ages 12 or older had driven under the influence of alcohol at least once in the preceding 12 months (SAMSA, 2001). Among young adults between the ages of 18-25, the rate is nearly 20%. The Bureau of Justice (1988) report that between 1970 and 1986, arrests for drunk driving increased by 223%. According to the United States Department of Justice (1999) the number of individuals

under correctional supervision for driving under the influence (DUI) increased from 270,100 in 1986 to 454,500 in 1997. Six percent of prison inmates and 12% of jail inmates reported they had previously been sentenced for DUI five or more times (BOJS, 1999). These individuals also reported that they drink to relieve tension, to relax, to be more social, and for comfort.

Many studies that focus on stress and alcohol consumption have reported that the subjects acknowledge they drink in response to stress. The studies indicate that subjects drink as a means of coping with economic or job stress, marital problems and the absence of social support (Kalant, 1990; Jennison, 1992; Sadava & Pak, 1993; Kinney, 2000; McNeece & Barbanell, 2005). Additionally, subjects also reported the more severe or chronic the stressor, the greater the consumption of alcohol (Pohorecky, 1991). However, this response is also dependent upon if the individual's perceives a sense of control in the situation, feels adequate social support, type of stressor, and the range of ability to cope (Sadava & Pak, 1993; Volpicelli, 1987). Pohorecky (1991) also reported that alcohol consumption increased by 30% in the 2 years following a flood in Buffalo Creek, West Virginia.

The research also addresses issues of coping following treatment episodes and issues related to relapse. Following treatment for chemical dependency or substance abuse, individuals experience a high relapse rate. Relapse rates vary from one treatment program to another but these rates can be as high as 90% (Edwards & Lader, 1994; Wilcox & Erickson, 2005). A considerable amount of research has focused on the reasons for relapse. Cummings, Gordon and Marlatt (1980) found that 71% of alcohol relapses were related to three high risk situations. These include: negative emotional states (such as anger and depression), a conflict, argument, or unpleasant encounter with another person and pressures from others.

Situations that an individual in recovery encounter can be the trigger to once again turn to the substance. Relying on the substance or chemical as a method of coping with a situation or

mood state is often referred to as 'escapism'. The individual may be utilizing the substance to escape or avoid the negative emotional state or situation (Kinney, 2000; McNeece & Barbanell, 2005). Rhoads (1983) and Judson, Goldstein & Inturrisi (1983) found that heroin addicts relapsed mainly due to negative emotional states and a lack of social support. Kosten, Kreek, Ragunath, Kleber (1986) found after a two and a half year follow up study, heroin addicts encountered more negative life experiences following treatment, as well as increased levels of depression in subsequent treatment intakes.

The research literature and clinical data demonstrate that individuals often use a substance to cope with stressful life events, psychological traumas, and psychopathology. This is a primary factor of consideration in the treatment process. Whether the substance is utilized to reduce negative affect or gain a more positive affect, essentially the substance is used to alter how one feels. This method of coping may be one pathway to addiction and the research also illustrates that this is also a factor in relapse. It is evident that finding ways to manage these experiences and feelings is essential in the process of treating individuals with a chemical addiction. Without adequately addressing and treating these coping styles, the individual will leave treatment unable to manage stressful life events. Thus, simply relying on old, maladaptive patterns and coping methods. Essentially the recovering individual is drawn back into the cycle of use, abuse and addiction for lack of a better way to manage these life experiences.

Individuals frequently engage in using a substance as a means of coping with psychological, emotional, or interpersonal issues they feel ill equipped to manage. Engaging in substance use to manage these issues does not bring resolution for these issues and often brings to the forefront a variety of other issues. These may include marital and family problems, work related issues, increased substance use, chronic health concerns related to substance use, and financial or legal problems. Addressing these issues is a necessary component of treating the

addiction and helping the individual change these maladaptive ways of coping. Additionally, tailoring the approach to the individual is a key component of the treatment process, including the implementation of innovative approaches such as GIM.

Chemical Dependency and Psychotherapy

Over the years psychotherapy has evolved from its psychoanalytic roots. It has evolved not only to meet new and current demands of individuals seeking therapy but also to the changes needed to work within a managed care system. These new demands require the use of short-term or brief therapy interventions, not years of therapy sessions that were the historic hallmark of psychoanalysis.

The new trends and financial constraints facing healthcare demand a method that is effective but within a shorter time frame. This evolution and change in psychotherapy has created a plethora of definitions with theorists unable to reach agreement of a universal definition.

Norcross (1996) developed a working definition of psychotherapy as, “an informed and intentional application of clinical methods and interpersonal stances derived from established psychological principles for the purpose of assisting people to modify their behaviors, cognitions, emotions, and/or personal characteristic in directions that the participants deem desirable” (p. 218). Corsini & Wedding (1995) defines psychotherapy in terms of a process of interactions between two people with the purpose of alleviating distress related to problems in thinking emotional discomforts and behavior problems or patterns. Others have defined psychotherapy as a method that centers on pathological or more serious emotional problems that require the reconstruction of their personality (Nugent, 2004). Others simply define psychotherapy by the characteristics within the method, such as the emphasis on the client gaining insights into their unconscious (Burke, 1988).

Bruscia (1998) further explores the elements of psychotherapy by breaking down the word itself. The word psychotherapy means a form of treatment of the psyche. Psychotherapy is a process of helping the client make psychological changes that are necessary in achieving a sense of well-being. Brusica further outlines that psychotherapy is a process of “gaining self-awareness, resolution of inner conflicts, emotional release, self-expression, changes in emotions or attitudes, improved interpersonal skills, resolution of interpersonal problems, development of healthy relationships, healing of emotional traumas, gaining deeper insight, reality orientation, cognitive restructuring, behavior change, greater meaning and fulfillment in life, or spiritual development” (p. 1-2).

Despite the many definitions and various forms of psychotherapy, there are commonalities. These common elements and characteristics include support and interpretation by the therapist, behavior change, and a good therapeutic relationship (Prochaska & Norcross, 1994). One of the greatest areas of agreement among practitioners is that the most important factor in psychotherapy is the interpersonal relationship between the client and therapist (Norcross, Prochaska, Hambrecht, 1991). Psychotherapists strongly agree that the key to successful psychotherapy is the development of a strong therapeutic alliance (Norcross & Prochaska, 1994). Bruscia (1998) also contends that what differentiates psychotherapy from other forms of therapy is the relationship between the client and the therapist.

An important factor to consider is what makes treatment effective. The research surrounding the effectiveness of chemical dependency treatment has often produced confounding results. Miller and Hester (1986) reported that predictors of a favorable outcome are not the same for all treatments, but rather they vary substantially. In fact, characteristics that may predict failure for a client in one treatment program can predict success in another treatment program. Therefore, what may benefit one client may not be beneficial to another client.

The factors that have been identified as having the greatest influence of treatment success include: an individual's degree of motivation for treatment, the number of years of use/drinking or using history and psychiatric status. There are additional factors that can influence the success of treatment and these include: age, gender, marital status, educational and occupational status (Moos, 1997; Milkman and Sederer, 1994). Annis (1988) encourage treatment plans to be tailored to the needs and characteristics of each individual. This would mean that a comprehensive treatment program would need to include a wide range of alternatives to match to the needs of the client.

The research around what is most effective in chemical dependency treatment may foster more questions than answers at times. The data demonstrates that there is not a simple answer. Just as there is not one road to addiction, there is not one road to sobriety. Milkman and Sederer (1994) have attempted to simplify the myriad of confusing facts into six conclusions:

1. Treatment can be effective.
2. There is no one approach that is superior.
3. All treatment approaches have equal ineffectiveness.
4. Ideal treatment varies based on the client's characteristics.
5. Setting, length and intensity are overall not powerful factors in the effectiveness of treatment.
6. The therapists' characteristics appear to have an important impact on the treatment.

Tarter (1996) proposes that individuals must be accurately assessed to determine what is driving the substance use. He identifies nine areas in which individuals need thorough evaluation: behavior patterns, health status, psychiatric disorder, social competence, family system, school performance, work adjustment, peer relationships, and leisure and recreation. Upon completion of the in depth assessment, areas that need to be addressed in the course of treatment can be identified and the treatment tailored for the individual. Tailoring the treatment to the individual allows for the treatment process to address the specific needs.

There is not one simple solution to the treatment of substance use or abuse. There is not one approach that has proven to be more or less effective. What can be deduced from the lack of answers is that one method of treatment is not effective for all. The individual entering treatment must be treated as an individual. An addiction develops for a myriad of reasons. Understanding the purpose it serves in the individual's life is necessary to find the solution and extinguish the behavior. This process is an individualized, tailored process, just as the research suggests.

Stress and Immune Function

Hans Selye (1936) first introduced the concept of stress and the idea that a response to stressful stimuli generates alterations in the immune system. Selye's concept was met with controversy and confusion and over the years many have argued against the concept (Lazarus, 1974; Mason, 1971 & 1975; Selye, 1976). However, throughout the 1970's and until today, the number of research studies further exploring this issue of stress and immune function has steadily increased and gained interest.

The building body of research in this area has led Selye's concept of the stress response to be a widely accepted foundation in the field of medicine (Biondi & Picardi, 1999). It has moved from a concept of if stress influences the immune system to how does stress influence the immune system?

The process begins with the occurrence of the stressor or life event. The event is then perceived, interpreted and evaluated by the individual. The emotional and behavioral response is determined by the individual's specific defense and coping strategies (Olf, 1999). The coping strategies that an individual possesses or lacks will influence the manner in which the situation is perceived. The neuroendocrine response is influenced not only by the individual's evaluation of the situation, but also by the emotional response to the event. These reactions in turn influence the immune system's response.

Overview of the Immune System

The immune system is a network of cells and organs that work in synchrony to defend the body against invaders. These invaders are primarily germs, bacteria, viruses, parasites and fungi. It is the role of the immune system to not only keep these invaders out, but if they do enter the body, to seek out and destroy them. The key element to the success of the immune system is its elaborate communication system (NIH, 2005).

The organs of the immune system are located throughout the body. They are called lymphoid organs because they serve as the home to lymphocytes (small white blood cells). These organs include the tonsils, adenoids, lymph nodes, lymphatic vessels, thymus, spleen, appendix and bone marrow. All immune cells begin life in the bone marrow. They respond to signals (cytokines), which direct them to grow into specific immune cells. These some of these immune cells include T-lymphocytes (also known as T-cells), B-Lymphocytes (B-cells) and phagocytes. Lymphocytes (B-cells and T-cells are the main type of lymphocytes) travel through the blood and lymphatic vessels, thus allowing them to monitor the body for invading organisms (NIH, 2005)

B-cells release substances called antibodies. These antibodies attack the invaders (antigens) that are circulating in the bloodstream. These antibodies belong to a network of molecules known as immunoglobulins. The different molecules (immunoglobulins) each play a different role in the immune system defense (Jenkins, 2004).

T-cells vary from B-cells in that “they do not recognize free floating antigens” (NIH, 2003, p. 11). They recognize fragments of the antigen on infected cells. The Helper T-cells direct Killer T-cells to attack the antigen. Natural Killer (NK) cells are another type of lymphocyte that possesses the potential to attack foreign cells.

The immune system maintains a large arsenal of cells. The system stores only a few of each kind of cell that is needed to recognize the millions of potential invading enemies. When an enemy (antigen) is detected, those cells needed for the task multiply into an army of cells. After they have destroyed the invader, they fade away leaving the original few to monitor for future attacks (NIH, 2005).

The process may appear simple but there is a complex set of reactions that occur within this experience. When the stressor is encountered, the hypothalamus releases corticotrophin-releasing hormone (CRH), which in turn acts upon the pituitary gland. This triggers the release of another hormone called adrenocorticotropin hormone (ACTH) which is released into the bloodstream. ACTH signals the adrenal glands, which begin to release a number of other hormones. These hormones include epinephrine (adrenaline), norepinephrine and cortisol. There are many other hormones that are also released in the body, but these particular hormones have been widely studied.

These hormones that are released enable the body to respond to the threat that is posed. Each hormone serves a distinct purpose in how they direct the body to respond. Epinephrine increases the blood pressure and heart rate, diverting blood to the muscles and speeding up reaction time. Cortisol releases sugar (in the form of glucose) from reserves in the body to power the muscles and the brain to respond (Chrousos & Gold 2002).

Chrousos and Gold (2002) refer to this hormonal system as the hypothalamus-pituitary-adrenal (HPA) axis. The HPA axis serves as a feedback system that signals the brain to release the hormones required to respond to the stressor. The HPA axis also communicates with the limbic system (which controls motivation and mood), the amygdala (generates a fear response), the hippocampus (plays a vital role in memory function, mood and motivation), as well as regions of the brain that control body temperature, control pain, and suppress appetite (Motzer & Hertig,

2004).

The HPA axis also interacts and communicates with the immune system. The stress hormones that are released in response to the stressor dampen the body's ability to produce substances that fight infections (interleukins), switching off the inflammatory response and leaving the body susceptible to infection (Chorusos & Gold, 2002; Motzer & Hertig, 2004).

The steps in this process occur whether in response to acute stress or chronic stress. This process is also influenced by psychological characteristics an individual possesses. The resources the individual possesses, or has available to them, can influence the manner in which an event is perceived. The coping strategies an individual utilizes can hinder or assist in the process. Those that lack the resources to manage such a life event may feel overwhelmed by the situation, in turn compounding the stress response. For example, individuals that employ more active coping strategies may gain a sense of control over the situation, in turn reducing the stress response to the event. Brosschot, Godaert, Benschop, Olf, Ballieuz, & Heijnen (1998) found that subjects that perceived having little control over the stressor exhibited decreased T helper cells, while those that perceived high control demonstrated an increase in their number of B cells.

The stressors and/or stressful life events people encounter throughout life are numerous. The research has focused on a wide variety of clinical populations and myriad of stressful life events. Researchers have also utilized various measures to better understand how the immune system is influenced by stressful events.

Researchers have focused on the stress of bereavement and its influence on the immune system (Batrop, Lazarus, Luckhurst & Kiloh, 1977; Irwin, Daniels, Risch, & Weiner, 1988; Schleifer, Keller & Stein, 1985), finding decreased natural killer cell activity in individuals that experienced the loss of a loved. Subjects that have experienced natural disaster (hurricane) encountered significantly lower levels of natural killer cell activity (Ironson, Wynings,

Schneidermann, Baum, Rodriguez, Greedwood, Benight, Antoni, LaPerriere, Huang, Kilmas & Fletcher, 1997), and individuals that were victims of an earthquake showed lower levels of natural killer cells (Segerstrom, Solomon, , Kemeny & Fahey, 1998) and a significant increase in respiratory illness following the event (Boyce, Adams, Tschann, Cohen, Wara & Gunnar, 1995).

Many studies have focused on stress and immune function for those anticipating or undergoing surgery. Tanabe (1993) found that patients undergoing surgery for gastric cancer experienced a significant decrease in lymphokine activated killer cells. Subjects diagnosed as HIV positive showed decreased natural killer cell activity (Ironson, La Perriere, Antoni, O'Rearn, Schneidermann, Klimas & Fletcher, 1990) or in the case when a spouse was diagnosed, subjects demonstrated impaired natural killer cell activity (Irwin, Hauger, Patterson, Sempler, Ziegler & Grant, 1997). Individuals encountering job related stress or general life stress demonstrated higher levels of blood cortisol (Aragona, Muscatello, Losi, Panetta, La Torre, Pastura, Bertolani & Mesiti, 1996). Individuals experiencing marital problems, separation or divorce showed decreased killer cell activity (Kiecolt-Glaser, Garner, Speicher, Penn, Kennedy & Glaser, 1984; Kennedy, Kiecolt-Glaser & Glaser, 1993) and exhibited lower levels of T-cells (Brosschot, Godaert, Benschop, Olf, Ballieuz, & Heijnen, 1998).

Some researchers have been focusing on the development of more integrative research and exploring the various mechanisms that link health, stress and immune function (Uchino, Hol-Lunstad, Uno & Flinders, 2001). This research supports a multi-level approach in analyzing immune function. This integrative approach proposes that social/interpersonal, personality traits, behavioral patterns, psychological makeup (e.g. stress appraisals, depression) and biological processes are all important factors in explaining immunological variations and health outcomes (Kiecolt-Glaser, Glaser, Gravenstein, Malarkey and Sheridan, 1996; Padgett, Sheridan, Dorne, Bernston, Candelora and Glaser, 1998).

Social stressors appear to significantly affect mood states (Bolger, DeLongis, Foster & Vinokur, 1996) and immunity (Herbert and Cohen, 1993). Cohen, Frank, Doyle, Skoner, Rabin and Gwaltney (1998) reported that long-term stressors (those lasting 1 to 6 months) increased the individual's susceptibility to the common cold. The stress most frequently reported by these subjects were primarily related to interpersonal or work issues.

Personality traits are another potential factor influencing immune function. Bolger and Eckenrode (1991) and Smith, Gallo & Ruiz (2003) reported that personality traits related to anxiety and nervousness are linked to great levels of subjective stress and thus responsible for changes in health and immunity. Other research has also explored personality traits such as hostility and optimism. These traits also appear to influence the physiological processes and health of individuals (Scheier & Bridges, 1995; Segerstrom, Taylor, Kemeny & Fahey, 1998; Smith & Draper, 1992; Smith, Gallo & Ruiz, 2003).

The body of research in this area continues to grow as researchers explore the array of stressors individuals encounter and the many factors that influence the response of the immune system. The research is demonstrating that acute, chronic and naturalistic stressors (exams) appear to suppress immune function (Segerstrom and Miller 2004). These physiological processes which were designed to protect us from eminent danger are being activated by a multitude of life events, influenced by our psychological makeup, interpersonal relationships, behavioral patterns, and personality traits Uchino, Hol-Lunstad, Uno & Flinders, 2001).

Immunoglobulin A and Immune Function

Immunoglobulins are a family of antibodies. An antibody is a substance that is secreted into the body's fluids and attacks antigens or invaders. The different antibodies serve different functions within the immune system. Antibodies seek out the antigens they are designed to destroy by interlocking with the antigen and identifying it for destruction.

Secretory Immunoglobulin A appears in seromucous secretions in body fluids. It can be found in saliva, tears, nasal fluids, sweat, colostrums and secretions of the lungs and gastrointestinal tracts (Jenkins, 2004). The specific role of secretory IgA is to defend exposed external surfaces of the body against attack by microorganisms. Salivary IgA helps protect the body by mixing and coating food as it is being chewed, protecting the respiratory and digestive tracts against any bacteria in the food. Deficiencies in IgA result in increased risk for respiratory and gastrointestinal infections and are also associated with autoimmune diseases (NIH, 2005).

Many researchers have utilized salivary IgA levels as a measure of immune function in subjects. McClelland, Floor, Davidson and Saron (1980) found that college students that possessed lower concentrations of salivary IgA were also associated with more frequent reports of illness. Jemmott, Borysenko, Borysenko, McClelland, Champman, Meyer and Benson (1983) reported that students encountering high levels of academic stress demonstrated lowering levels of salivary IgA than during periods of low academic stress. Jemmott and Magloire (1988) discovered that salivary IgA levels were lower during exam periods for students, but that students who reported adequate social support had consistently higher IgA levels. Lowe, Urquhart, Greenman & Lowe (2000) found that students' IgA levels were lower before and after giving an oral presentation or taking an exam.

Yang, Koh, Ng, Lee, Chan, Dong, Goh, Anantharaman and Chia (2002) discovered that emergency department nurses who reported higher levels of job related stress showed significantly lower levels of salivary IgA. Koh, Yang, Khoo, Nyunt, Ng and Goh (2004) compared salivary IgA levels among patients with mild and severe psoriasis to a control group. Although no differences were observed between the mild or severe cases of psoriasis, the psoriasis patients did have lower concentrations of salivary IgA.

There has also been research utilizing salivary IgA as a measure that has produced confounding and contradicting results. Pettingale, Greer and Tee (1977) found that breast cancer patients and individuals with benign breast disease who suppressed their anger had higher IgA levels than those patients that expressed their anger. Pettingale, Philalithis, Tee and Gree (1981) also reported that breast cancer patients experiencing emotional repression or denial demonstrated higher levels of IgA. Evans, Bristow, Hucklebridge, Clow and Walter (1993) found that negative mood states tended to be associated with subjects that recorded their daily life events. Ohira, Watanabe, Kobayashi and Kawai (1999) discovered that baseline salivary IgA levels were higher in individuals that did not demonstrate type A behaviors.

Attempting to understand the contradictions in this research can prove complex. However, these type A individuals experienced lower levels of immune reactivity when exposed to brief stressors as compared to those individuals that do not demonstrate type A behaviors. This physiological process is influenced by a multitude of factors. While a “stress induced down regulation of the immune system may place an individual at risk for infections or malignant disease, it may be beneficial in the context of an autoimmune disease” (Uchino, Holt-Lundstand, Uno & Flinders, 2001, p. 32). As the research works to clarify how stress and the immune system interact, clinicians and research continue to discover how various health related concerns also influence this process.

The process of GIM works to uncover information and material that is problematic and producing stress in an individual’s life. In uncovering this information the individual is able to work through this material and develop new ways of coping. When an individual learns healthier ways of coping and is better able to manage the stress in their life, this in turn reduces their overall stress and negative impact on their immune system and health.

Chemical Dependency and Immune Function

The United States Department of Human Services and the Substance Abuse and Mental Health Services Administration published a report providing data from services research outcome studies (SROS). A component of this report is to collect data on the overall physical health of individuals that received substance abuse treatment. The 2003 report sampled over 3,000 clients following their discharge from treatment. Thirty-three percent of those surveyed identified that five years prior to this treatment episode were already encountering fair or poor physical health. Twenty-six percent of those surveyed identified health issues that related to internal conditions such as ulcers, diabetes, kidney problems and liver problems. Twenty-two percent of those surveyed reported issues relating to breathing conditions, 21% identified having high blood pressure and 35% reported a history of hepatitis or jaundice.

Smith, Meyers & Miller (2001) report that individuals with substance abuse issues can encounter a wide array of medical complications. In addition to those reported in the 2003 SROS study, issues with malnutrition, the gastrointestinal system, anemia/hematological problems, along with cardiovascular problems. Cook (1998) also identifies that various endocrine and metabolic issues may arise as a result of substance use. Lieber & Rosman (1992) also report a strong link between alcohol consumption and cancers of the mouth, larynx and esophagus.

Many studies have made efforts to further understand comorbidity factors of substance abuse. Szabo (1997) reports that chronic, acute and even moderate use of alcohol can increase the body's susceptibility to bacterial and viral infections. Alcohol appears to interfere with antigen response in the immune system. Cook (1998) identifies that alcohol abuse manipulates the cytokine (chemical messengers of the immune system) balance. This imbalance is what leaves the body susceptible to infections and other complication associated with alcoholism (Pavia, La Mothe & Kavanagh, 2004).

Gordon and Lieber (1986) report that alcohol inhibits the immune system by interfering with hormone (the chemical messengers that control the functions of tissues and organs) secretion from the hypothalamus, pituitary gland, thyroid, and pancreas. The disruption in this communication process not only impedes hormone production but can also alter and/or exacerbate blood sugar levels (Crane, Sereny & Gordis, 1988). When the immune system process is interrupted it leaves the individual vulnerable to serious medical consequences.

Spies and colleagues (2004) found individuals that were long-term alcoholics and undergoing surgery encountered a higher infection rate following the surgical procedure. They reported that 54% of the alcoholic patients experienced infections, compared to the 26% of the nonalcoholic patients. The data showed that T-helper cell levels were suppressed prior to surgery which led to inadequate cytokine levels following surgery.

Flanders, Boring, Annet and Mili (1992) evaluated the effect of alcohol consumption on the immune system of middle-aged men. They found as alcohol consumption increased, subjects demonstrated lower immunoglobulin and lymphocyte levels. Redwine, Dang, Hall and Irwin (2003) report that alcoholics demonstrated a suppression of interleukin and a reduction in natural killer cell activity. Adinoff, Ruether, Krebaum, Iranmanesh and Williams (2003) found that chronic alcohol dependent subjects demonstrated significantly increased levels of salivary cortisol during periods of intoxication and withdrawal.

Further understanding the role that alcohol and drug abuse have on the immune system provides insight into why there is such a high co-morbidity rate for individuals with substance abuse issues. The addict's suppressed immune system leaves them vulnerable and susceptible to a variety of bacteria, viruses, and infections. All in all, the individual's health issues become more complex.

The complexity of addictions is only complicated by these physical health issues. It is clear that to fully address the addiction the therapeutic approach must first address the issues that are the impetus for substance use. Uncovering and working through these issues, allow the individual to learn to cope in new ways. Changing the manner of coping can then reduce the need for substance use. Eliminating the use of the substance will positively impact the individual's immune function and health.

The Effects of Psychosocial Interventions on Immunglobulin A

Due to the complex nature of stress and the manner in which it is processed, experienced, and managed, researchers have explored many methods to inhibit its influence on the immune system. These psychosocial interventions are designed to help individuals cope with the stressor. Kiecolt-Glaser and colleagues (1985) discovered that relaxation training increased natural killer cell activity in healthy older adults. Spiegel, Bloom, Kraemer, and Gottheil (1989) found that the psychosocial intervention they designed for metastatic breast cancer patients increased their rate of survival. Fawzy and colleagues (1990) evaluated the effects of a six week structured group intervention for stage I and II cancer patients. The intervention was implemented for a six week time period and incorporated education, problems solving skills, and stress management exercises (relaxation and emotional support). The subjects engaged in the group intervention experienced increases in natural killer cell activity, a six year follow up also revealed lower mortality rates than those in the control group.

This early research in psychosocial interventions and immune function helped provide support for continued research in this area. A number of studies have focused on psychosocial interventions and their affect on immunoglobulin A. Jarnoski and Kugler (1987) compared a progressive muscle intervention with focused breathing and a progressive muscle relaxation intervention with mental imagery to a control group. Following the one hour intervention, the

subjects engaged in both interventions demonstrated higher levels of salivary immunoglobulin A (sIgA) than the control group.

Green, Green and Santoro (1988) investigated the effect of daily relaxation on salivary immunoglobulin A. Subjects experienced significant increases in sIgA after 20 minutes of relaxation. Additionally, sIgA levels increased significantly over the three week practice period. Rider, Achterberg, Lawlis, Goven, Toledo and Butler (1990) reported that individuals who received six weeks of training in two different music and imagery interventions (incorporating immune specific imagery and nonspecific imagery), encountered significant increases in sIgA. Lane (1991) found that hospitalized children demonstrated a significant increase in sIgA following a single music therapy session.

Montello (1995) developed an integrative group music therapy intervention to reduce anxiety, increase confidence, and improve performance of musicians. The findings suggest that musicians who acknowledge and express their feelings regarding their performance experience significantly higher sIgA levels than musicians who deny and remain detached from those feelings. Johnson, Walker, Heys, Whiting (1996) had subjects attend relaxation training sessions which incorporated hypnosis on three separate occasions. Subjects experienced significant increases in sIgA over the three week period. Gregerson, Roberts and Amiri (1996) found that subjects who engaged in a one hour intervention which incorporated relaxation and immune imagery experienced a significant increase in IgA.

Hucklebridge and colleagues (2000) examined the affect of mood manipulation through mental recall and mood manipulation by music on sIgA. sIgA levels were elevated in response to a positive mood; however the mood induction by music demonstrated significant elevations in sIgA. Reid, Mackinnon and Drummond (2001) monitored cold symptoms, mood, and sIgA of university students. Students demonstrated fewer cold symptoms and significantly increased sIgA

levels following individual relaxation sessions.

Numerous studies have explored the benefits of psychosocial interventions on immune function. Additionally, several studies have specifically utilized salivary immunoglobulin A as the measure of immune function. The results provide support for future research in this area and for the continued use of sIgA as a measure for immune function.

Imagery and Psychotherapy

The use of imagery in the psychotherapeutic process has its early roots in Europe. European psychiatrists and psychologists demonstrated a greater sensitivity to the realm of imagination, while at the same time in the United States; the emphasis was on the behavioral approach to therapy (Sheikh, 1983). Many individuals explored and employed the use of imagery in their clinical work, however only those individuals with notable contributions will be included in this section. Pierre Janet (1889) was likely the first to utilize imagery in his therapeutic work. He discovered that having hysterical patients substitute one image for another was helpful in overcoming fixated thoughts or ideas.

Also during the 1880's and 1890's, Freud was aware of the spontaneous images that his patients experienced. He acknowledged that the vividness of their images mirrored that of reality. Freud's use of imagery in his work was quite extensive up until about 1900 (Breuer & Freud, 1955). He even abandoned the use of hypnosis in favor of an imagery technique. He felt that utilizing the imagery technique allowed the patient to have more conscious control.

Also in the early 1900's, Ludwig Frank discovered that when he employed deep relaxation techniques with his patients, they frequently encountered hypnagogic images. He believed that these images to be cathartic and emotional in nature (Singer & Pope, 1978). Alfred Binet (1922) also encouraged his patients to converse with their own visual images in an introspective state, that he called, 'provoked introspection'. He along with Janet believed that the

images that emerged during this introspection exercise, revealed the individual's unconscious subpersonalities.

Binet's work was later expanded by Carl Happich in Germany (Sheikh & Jordan, 1983). Happich encouraged his patient's to engage in muscle relaxation, breathing and meditation and allow images to emerge. He postulated that between the conscious and unconscious lies a meditative region in which concepts or ideas from the unconscious have come to fruition and are now visible by the mind's eye. Happich utilized several predetermined scenes, such as a meadow, mountain or chapel, to stimulate the imagery experience.

At this same time, French psychologist Eugene Caslant was implementing the use of imagery in his own practice. He encouraged his patients to practice ascending and descending in their imagination. His patient's often reported experiencing various emotions during this movement and the vividness of the imagery changed with the movement. In Switzerland, Marc Guillerey was exploring how resolving conflicts through an imagery experience produced deep muscle relaxation and greater psychophysiological harmony (Singer, 1974).

Around 1909, Silberer was the first to recognize the therapeutic value of hypnagogic images and their value in the exploration of the unconscious and preconscious processes in his psychoanalytic practice (Kosbab, 1974). Others that continued to explore the use of imagery in their practice included Pierce Clark (1925). He employed the use of visual images to attain access to childhood memories and also incorporating free association with the use of imagery. Anna Freud also utilized free and directed imagery in the clinical work with children (Crampton, 1974).

Carl Jung had been a student of Freud's, however in the early 1900's he part ways with Freud and underwent a period of intense personal work from about 1912-1917. Jung viewed mental imagery as a creative process of the psyche that can be utilized to assist an individual to

discover interpersonal and spiritual integration (Jung 1960). He believed the psyche consists primarily of images and that these images are sequenced in a meaningful manner. Jung's work was strongly influenced by this belief, much as the techniques he developed. Jung developed to approaches for working with images: dream analysis and active imagination.

Through his intense self-exploration, Jung discovered that the unconscious was in a sense always dreaming. However, since an individual's attention is focused elsewhere, she or he is unaware of the images, and only becomes aware of these images if specific focus is placed on these images. Jung's method of active imagination is delineated by two distinct qualities, the images have a life of their own and as the images unfold the story comes alive for the client or imager (Sheikh & Jordan, 1983) and secondly that the images unfold in their own logical manner (Chodorow, 1997). Furthermore, Jung felt that in relating the imagery material to their own life, the patient was able to assist the analyst with his or her own abilities and thus breaking the cycle of dependence with the analyst. He ultimately believed it helped to liberate the client and helped them in finding their own courage to be their true self (Jung, 1960).

In the 1950's, Hans Carl Leuner began developing his imagery technique of guided affective imagery. His background as a psychiatrist led him to develop this approach into a psychoanalytically based method of psychotherapy and he credits the genesis of his approach to Freud's early uses of imagery (Leuner, 1978). Guided affective imagery is more systematic in nature. Leuner developed ten standard imagery scenes. Each imagery scene is symbolic in nature. Utilizing the imagery scenes allowed the therapist to understand more about the patient and assess therapeutic issues would be addressed through the course of therapy. Later in the course of therapy, he would create spontaneous imagery scenes to address more specifically the therapeutic issues of his clients.

Leuner (1978) believed that imagery was a valuable therapeutic vehicle. The patient would essentially project their core issue or conflicts onto the imagery, and because the imagery process is actively unfolding, the individual is therefore connected to the experience. Due to the connection with the imagery in this experiential manner, Leuner felt it allowed for a spontaneous transformation on the part of the patient. Thus the imagery experience itself was the catalyst or healing agent, therefore eliminating the need to process the experience verbally.

Another psychiatrist by the name of Stanislav Grof, began developing his own technique during the 1960's. Grof's focus grew from his work with LSD psychotherapy. He developed a technique called Holotropic Breathwork. This experiential psychotherapeutic approach was designed to unblock emotional energy that was trapped in the body and causing psychosomatic conditions (Grof, 1985). During his early work he mapped a cartography of the human psyche. This map consists of four layers with which the clients connect during the process of the Holotropic Breathwork session. These layers included 1) aesthetic experiences, 2) psychodynamic, biographical or recollected experiences, 3) perinatal or birth experiences, and 4) transpersonal or spiritual experiences (Grof, 1985).

Grof (1985) was convinced that the greater therapeutic value lay in the experience of the imagery and not in the processing that followed the experience. The group processing that follows the sessions is implemented simply for a means of support, it is not a time to analyze the experience.

Around this same time, Roberto Assagioli was developing a technique called psychosynthesis. Assagioli, an Italian psychiatrist believed that Freudian psychoanalysis did not effectively address or work to integrate all aspects of the human experience (Assagioli, 1965). He felt an approach needed to consider the concept of human growth and integrate the individual's personality to allow the client to reach their highest potential. Assagioli incorporated

a variety of imagery techniques into his theory and method of therapy. He utilized; 1) Jung's method of active imagination, 2) meditating on positive images (suggested by the therapist), 3) spontaneous imagery (the client reports images that occur spontaneously, 4) symbolic visualization (client meditates on spiritual/religious images to connect with their spiritual self), 5) symbol projection (client focuses on images offered by the therapist), 6) guided daydreaming (the therapist guides the client through an imagery experience (Assagioli, 1965).

Psychosynthesis consists of two stages. The first stage focuses on helping the client develop an understanding and knowledge of their own personality and focus on the self (Parfitt, 1990). Assagioli utilized imagery techniques in this stage to focus on developing desired qualities, developing and enhancing self-esteem and interpersonal relationships (Moleski, Ishii & Sheikh, 2001). The second stage of his approach consisted of having the client explore their spiritual or transpersonal dimensions. This stage of the process focused specifically on finding value and meaning in one's life. In both stages of psychosynthesis, Assagioli incorporated a variety of imagery techniques, tailoring the techniques to address the needs of the individual (Parfitt, 1990).

Also at this time in the 1960's, Eugene Gendlin was developing his approach called experiential focusing or also referred to as focus oriented psychotherapy. Gendlin's approach is an eclectic variation of a wide array of other therapeutic approaches. The approaches that most influenced his work include Freudian and Jungian psychoanalysis, Fritz Perls' Gestalt therapy, Carl Roger's Client-Centered therapy and Assagioli's Psychosynthesis (Gendlin, 1996). Gendlin and his colleagues (Gendlin, 1981 & 1996; Gendlin & Olsen, 1970) utilized this focusing approach to bring awareness to all aspects of the individual's emotions. As the image emerges, the individual moves from a global focus on their feelings to a focus on a particular feeling. The image remains stable and constant until the individual acknowledges the feeling relating to this

image. As the individual is able to release the emotions relating to this image, the image then shifts along with the emotional state (Gendlin & Olsen, 1970).

Gendlin (1981) believed that the focus on the emotions allowed him to address the core therapeutic issue of the client. These emotions or emotion were bodily experiences as well, meaning these emotions are experienced, sensed and felt within the body. By focusing in on those emotions, the individual could identify the core issue of their therapeutic work and then move forward in the process of therapy (Gendlin, 1996).

The imagination also plays a key role in hypnotherapy. Additionally, there is significant overlap between hypnosis and several imagery techniques (Heap, 1991a; Sheikh & Jordan, 1983; Barber & Wilson, 1979). These similarities include the fact that the individual enters an altered state of consciousness, the client is directed to imagine a variety of situations (Honiotes, 1977; Weitzenhoffer & Hilgard, 1962), and the use of selective attention or focus on certain stimuli/images (Heap, 1991a),

Though no one individual can be credited with the creation of hypnotherapy, several individuals are cited for their influence on its development. A few individuals were instrumental in its development; Jean Charcot, Sigmund Freud, and Milton Erickson (Fromm & Shorr, 1979; Heap, 1991a). It was Erickson that advocated for the use of hypnosis because he believed individuals possess the resources within to solve their own problems. For him, hypnosis provided the means of accessing the material that needed to be addressed in the course of therapy (Erickson, Rossi & Rossi, 1976).

In the hypnotic state, the client may encounter a variety of experiences, memories, regression, traumatic events and metaphoric imagery (Heap, 1991b). Following the experience, the therapist assists the client in returning to a normal state of consciousness. The therapist may or may not instruct the client forget the experience. This is dependent upon the approach of the

therapist and the nature of the client's experience. Therefore, the client and therapist may take time to process the experience before concluding the session.

The use of imagery in psychotherapy has evolved and expanded with each clinician and new approach. In the various approaches, imagery may be interpreted in different ways or interpreted utilizing a specific theoretical framework, the manner in which the imagery is emphasized and the role of the therapist may vary. However, many commonalities exist among these methods; the imagery experiences have multiple layers and meanings, they allow access to conscious and unconscious material, the therapist employs techniques to help focus or relax the client in the imager process, and lastly the relationship of the therapist in the imagery experience (Meadows, 2002).

The application of imagery in psychotherapy has a long standing history. This method is often employed to address deep seeded issues that have remained latent for a number of years. Latent material can often remain outside of an individual's conscious awareness. Imagery approaches provide for the type of depth work to address these core and complex issues. In getting to the root or base of the problem works to ensure the individual can fully work through the pertinent issue and find resolution. This process allows the individual to resolve the interpersonal problems they have encountered in the past and improve their ability to cope with future issues.

The research surrounding these various methods is limited. Leuner (1984) does report various studies in his writings about Guided Affective Imagery (GAI) reports on a study conducted by Roth, working with fifteen women between the ages of 18-35. All of the women suffered from psychosomatic gynecological symptoms. The women received anywhere from 6 to 50 sessions. The results demonstrated that 75% of those reporting secondary amenorrhea showed significant improvement or were absent of symptoms, 75% that reported premenstrual dystonia

reported improved symptoms or absence of symptoms, while 66.% percent of those reporting symptoms of dysmenorrheal, dyspareunia, organic problems and absent or lowered sexual desire experienced significant improvement or absence of symptoms by the end of their treatment.

Leuner (1984) also reports on a study conducted by Wachter and Pudel. The subjects consisted of 29 neurotic patients that had been referred to the psychiatric clinic at the University of Gottingen in Germany. The subjects in the treatment group received fifteen GAI sessions. In comparison to the control group, the subjects in the treatment group demonstrated significantly improvement on psychosomatic complaints and psychopathology symptoms.

Lastly, Leuner (1984) details a study conducted by Kulesa and Jung. This study explored the use of GAI with individuals in outpatient treatment receiving treatment for phobias, anxiety disorders, depression, psychosomatic disturbances, sexual dysfunction and acute adjustment reactions. Subjects in the treatment group reported lower levels of anxiety and neuroticism following the fifteen sessions. Additionally, they also reported a decrease in fatigue, cardiac and circulatory problems, should and neck pain, and sexual and sleep disturbances.

Many other studies have demonstrated the benefits of the use of imagery health. King (1988) conducted a study utilizing imagery with graduate nursing students and found it helped to decrease levels of anxiety. Holden – Lund (1988) discovered decreased anxiety and increased wound healing in postoperative cholecystectomy patients. Thompson and Coppens (1994) found that guided imagery decreased state anxiety and overall client movements during magnet resonance imaging (MRI) procedures. Syrjala, Donaldson, Davis, Kippes, and Carr (1995) showed that relaxation and imagery decreased cancer treatment related pain. Tusek, Church, and Fazio (1997) found a decrease in preoperative and postoperative anxiety and pain and decreased postoperative narcotic medication use with patients, using guided imagery tapes.

Deisch, Soukup, Adams and Wild (2000) found that patients that utilized guided imagery following coronary artery bypass graft reported lower levels of pain, fatigue, anxiety, and spent fewer days in recovery. Further research explores the use of guided imagery on various physiological measures. Achterberg, Dossey, Kolkemeier, Sheikh (2003) report that cardiac patients utilizing guided imagery have lowered heart rate, increased oxygen consumption, and decreased blood pressure.

The body of research exploring the use of guided imagery and imagery in treating psychological and physiological disorders continues to grow. The applications in health continue to expand as well from treating trauma victims (Taal and Krop, 2003), individuals with PTSD (Weis, Smucker, and Dresser, 2003), alleviating depression (Schultz, 2003), treating eating disorders (Esplen, 2003) and phobic disorders (Yahnke, Sheikh and Beckman, 2003).

Summary

It is clear from the research that chemical dependency is a common problem in our society. Addiction is a complex disorder in that it is influenced by psychological issues, stressful life events, personality traits, and genetics. The picture is also complicated by the fact that substance use suppresses immune function and causes and contributes to a variety of health issues. The negative impact of substance use is not limited to physical health, but also impacts emotional and psychological well-being. Research also has demonstrated that our psychology also influences our biology. Therefore the psychological aspects must be addressed in order to positively influence the biology.

Despite this understanding of how substance use impacts immune function and overall health, research surrounding immune function during chemical dependency treatment has not been explored. The proposed research addresses this gap. The nature of an addiction is often in response to an inability to cope with life's challenges, problems or negative life events. Many of

these unresolved issues and the addiction itself impact the individual's relationship with others or how they relate to others. These points provided the basis for the use of the Sense of Coherence Scale and the Inventory of Interpersonal Problems.

Various GIM therapists, as well as in Dr. Bonny's early work, have documented the anecdotal support of GIM in chemical dependency treatment. Despite this clinical support, research in this clinical area has not been conducted. This study will work to begin to fill is gap in the field.

The therapeutic approach of GIM was selected based on the fact that it is an in-depth psychotherapeutic approach that is aimed at uncovering latent material and information the individual has suppressed or has been engaging in substance use to suppress. Accessing this material and information allows the individual to uncover, address and resolve these issues. When resolution is achieved it impacts how the individual relates to and interacts with others, thus improving their interpersonal relationships.

Another by product of the therapeutic process is that as an individual begins to resolve these issues, they discover new ways of managing events that happen in their life. An individual begins to develop a sense of competence in managing life's challenges and in their ability to cope. Changing these patterns demonstrates an overall impact in their general health. As one's ability to cope improves and problems are resolved, the impact of stress on the immune system is reduced. The need to engage in substance use is also eliminated, also reducing the level to which the immune system is suppressed. Based on the research around the impact of stress, coping and life events and substance use on immune function the physiological measure of salivary immunoglobulin A was selected. The following figure 2.0 illustrates this conceptual framework for the study.

CHAPTER 3

METHODS AND PROCEDURES

Introduction

The purpose of this study was to test the effectiveness of the Bonny Method of Guided Imagery and Music on the level of interpersonal problems, sense of coherence and salivary immunoglobulin A of adults in chemical dependency treatment.

Design

A quasi-experimental design with pretest and posttest measures was used to address the purpose of this study. The measures utilized tested the effect of GIM on interpersonal problems, sense of coherence and salivary immunoglobulin A. The between group variable had two levels, control and experimental conditions. The experimental group received one GIM session each week for the duration of their time in treatment, this included a maximum of seven sessions.

The within group variable included pretest and posttest measures of interpersonal problems, sense of coherence and salivary immunoglobulin A. Interpersonal problem variables were scores on eight different subscales. These subscales include: domineering, vindictive, cold, socially avoidant, non-assertive, exploitable, overly nurturing, and intrusive. Sense of coherence variables include scores from three subscales, these include: meaning, comprehensibility and manageability. Physiologic measures included measuring pre and post salivary immunoglobulin A levels. The measures were analyzed to evaluate statistically significant change between the pretest and posttest measures.

Hypotheses

The hypotheses tested by this study were:

Hypothesis #1: Subject assigned to GIM sessions will report a decreased number of interpersonal relationship issues from the pretest to the posttest as measured by the Short

Form of the Inventory of Interpersonal Problems Circumplex Scales, as compared to those who do not receive GIM.

Hypothesis #2: Subject assigned to GIM sessions will report an increase in manageability, comprehensibility and meaningfulness of their life from the pretest to the posttest as measured by the Orientation to Life Questionnaire (Sense of Coherence Scale) as compared to those who do not receive GIM.

Hypothesis #3: Subjects assigned to GIM sessions will experience an increase in immune function from the pretest to the posttest as demonstrated by an increase in salivary Immunoglobulin A levels as compared to those who do not receive GIM.

Setting

University Good Samaritan Center (UGSC) is a non-profit 338 bed facility located in Minneapolis, Minnesota that is owned by the Evangelical Good Samaritan Society. It serves a variety of individuals that require short-term or long-term care. UGSC has several specialty programs that are housed on self-contained units and these programs are managed as individual care centers. These programs include: geriatric long-term care/men's behavior units; Alzheimer's care; sub-acute/rehabilitation; chemical dependency/traumatic brain injury; young adult long-term care/traumatic brain injury; and Huntington's disease. Programming at UGSC is focused on meeting the physical, psycho-social and spiritual needs of each individual.

Bridgeway is an inpatient chemical dependency program at University Good Samaritan Center. The unit offers two distinct treatment programs. There is an Elder program which is designed to meet the physical, emotional, and social needs of chemically dependent older adults, typically ages 50 and up. The Brain Injury, Disability and Illness (BIDI) program focuses specifically on chemically dependent individual's ages 18–50, that also suffers from cognitive, neurological, or physical impairments or illness.

Bridgeway's programming was comprised of only group therapy sessions. This included verbal group therapy, spirituality, music therapy, 12 step group based on the 12 steps of Alcoholics Anonymous, recreational group sessions which included staff supervised outings and family group sessions. Individual therapy for patients was not a part of Bridgeway's regular therapeutic programming. Thus, there was no overlap for those assigned to GIM.

Sample

The number of subjects for study participation was determined based on the number of admissions to the Bridgeway program on an annual basis and within the limits of available resources. Approval was granted by the Institutional Review Board at the University of Minnesota for 30 subjects total for the study. Power analysis calculations were not utilized to determine size sample for the study based on the literature, due to the lack of experimental research testing GIM in the chemical dependency treatment setting.

Subjects were approached for enrollment in the study following their admission to Bridgeway. The researcher scheduled and held individual meetings with each new admission. Clients were given a brief description of the nature of the study and of GIM in oral and written form (see Appendix D for information sheet). Clients were provided opportunities to ask questions of the researcher. If they continued to demonstrate interest, individuals were then asked about exclusionary diagnoses or if the researcher observed evidence of exclusionary diagnoses which was confirmed with the nursing staff by review of the patient's chart. If they had been diagnosed with some form of dementia or psychosis, subjects were informed of their ineligibility for participation. These individuals were also thanked for their time and willingness to participate in the study.

The subjects were clients admitted to the inpatient chemical dependency treatment program at the University Good Samaritan Center. The length of treatment varies for each client

admitted into the program. The length of treatment typically ranges from thirty to sixty days. Clients admitted into the Bridgeway program were informed of the study and were invited to participate. Subjects received no payment for their participation in this study.

One year after the study had been initiated, the University Good Samaritan Center decided to close their inpatient program and only provide chemical dependency services on an outpatient basis. Due to the change in the status of the program the research study had to terminate early. Therefore the goal of 30 subjects was not attained and only 19 subjects were recruited. No subjects withdrew from the study.

Descriptive data

Descriptive data were collected from the subjects and their charts for purposes of establishing reasonable comparability between groups with respect to the following variables: age, gender, previous treatment episodes, drug of choice, years of use, mental health diagnoses and medical conditions or diagnoses. No subjects currently received treatment for multiple substance use.

Measures

Short Form of the Inventory of Interpersonal Problems Circumplex Scales

Many clients enter psychotherapy to address interpersonal issues or difficulties. Due to the presentation of these issues at the onset of therapy, these interpersonal problems are often the focus of therapy. A successful course of therapy should then lead to a decrease in these interpersonal problems. The Inventory of Interpersonal Problems (short form) was developed out of the need to measure and assess the interpersonal challenges that clients often report when entering psychotherapy. This inventory allows the clinician to differentiate interpersonal and non-interpersonal (e.g. depressed mood, unreasonable fears) stressors the client may be encountering.

The Inventory of Interpersonal Problems (IIP-SC) is a 32 item short circumplex form. It is a shortened version of the 127-item Inventory of Interpersonal Problems (IIP) and the 64-item circumplex form of the IIP (IIP-C). Horowitz, Rosenberg, Baer, Ureno and Villasenor (1988) identify that the IIP and IIP-C were developed as a method of predicting the types of issues to be addressed in psychotherapy. The length and number of items on the IIP and IIP-C make these instruments difficult to use in therapeutic settings where time is of the essence or if multiple measures are being used.

Soldz, Budman, Demby and Merry (1995) developed this shorter form to provide a more efficient method of screening patients in a relatively brief period of time. The IIP-SC, like the IIP and IIP-C is designed to capture the clinically important aspects of a client's interpersonal functioning and as a measurement of self-reported interpersonal distress. The eight subscales include five areas (domineering, vindictive, cold, socially avoidant and intrusive) that create difficulties within an individual's interpersonal relationships and three areas (non-assertive, exploitable and overly nurturant) in which a person can be more vulnerable within their interpersonal relationships.

Each subscale being comprised of four questions. The items are scaled along a five point differential scale, ranging from 0 to 4 with two anchoring phrases. The eight scales include characteristics associated with interpersonal relationships: domineering, vindictive, cold, socially avoidant, nonassertive, exploitable, overly nurturant, and intrusive. The IIP-SC yields scores ranging from 0-128. A lower score represents fewer interpersonal problems, while a higher score indicates significant struggles with interpersonal issues.

The IIP-SC has demonstrated an internal reliability of .88 in the pre-therapy samples (Soldz, Sudman, Demby, Merry, 1995). The overall pre-therapy – post-therapy correlation mean is .71, which is virtually identical to the parallel correlations on treatment and control samples for

the mean of the 127-item IIP and for the mean of the IIP-C.

The Sense of Coherence Scale (SC)

The Orientation to Life Questionnaire or Sense of Coherence Scale is designed to explore three interrelated components of coping: comprehensibility, manageability and meaningfulness on one's life. These three aspects are essential in the manner in which a person manages their outer world. The way individuals understand or comprehend events that occur in their lives influences the method of coping. Our ability to draw upon or find the necessary resources to meet life's demands demonstrates how we manage these life events. Lastly, whether we feel these demands are worth the investment our time and energy illustrates where we find meaning in life. A strong sense of coherence is associated with effective coping, reduced stress, engaging in fewer behaviors that compromise our health, improved morale, somatic health and social adjustment.

The Sense of Coherence Scale (Antonovsky, 1987) is comprised of 29 items. Eleven items correspond to comprehensibility, 10 items correspond to manageability and 8 items correspond to meaningfulness. Items are scaled along a 7 point differential scale with two anchoring phrases. Thirteen of the items are reverse scored to avoid response set bias. The 29 items yield scores ranging from 29 to 203, with high scores reflecting a stronger sense of coherence.

Meaningfulness is defined as the sense of involvement in the events that create meaning in one's daily life and destiny. Manageability is the experience that one has the resources to meet the demands of inner and outer stimuli. Comprehensibility is the extent to which one experiences inner and outer stimuli as ordered, cohesive, structured, and tangible. The SC was implemented for the measurement of the inner growth dimension. The inner growth dimension is an individual's ability to alter their adaptive responses to stressful situations.

The reported reliability of the scale according to Cronbach's is alpha, .88 to .93, which reflects a fairly strong degree of internal consistency. The concurrent validity is in relationship to Rotter's Internal-External Locus of Control Scale and in clinical studies (Antonovsky, 1987). The Sense of Coherence Scale is designed and considered to measure those traits that are hard to influence through psychotherapy.

The Scale for Assessing Responsiveness to Guided Imagery and Music – Imagery portion

The Scale for assessing responsiveness to Guided Imagery and Music was developed by Kenneth Bruscia, Ph.D., FAMI. The scale was developed as a method for allowing the guide to evaluate how the individual imaging/traveler is responding to the imagery, music and the guide. For this study, the only portion utilized was the imagery portion. The imagery portion allows the guide to evaluate the manner and depth the imager is engaging in the imagery experience.

The Scale for assessing responsiveness to GIM (imagery portions) was designed to evaluate the manner in which the imager is engaging in the imagery. The imagery scale focuses on how easily the imager is able to generate the imagery, how they are able to sustain images, how vivid the images are and the manner in which the imager responds on a kinesthetic level. The scale also explores the level of emotional engagement in the imagery, the nature of the images (personal or autobiographical), the level of interaction with the imagery and the level of openness to the images.

When a client is more engaged in the imagery experience on these various levels, it is indicative of the individual's ability and willingness to explore and address these issues in the therapeutic process. Therefore, the less engaged the individual is in the imagery experience, the less engaged the individual is in the therapeutic process. If the individual is not responsive to the image, they will not likely be responsive to addressing that issue in therapy.

The imagery questionnaire consists of 11 questions. Items are scaled along a 5 point differential scale (1-5) utilizing two anchoring phrases. Scores range from 11 to 55. The higher score indicating that the imager is deeply responsive to the imagery experience. The lower score indicating the imager is less responsive to the imagery experience.

The scale focuses on the ease in which images are generated, the vividness of the images, the emotional and physical experience of the images, the imager's interaction or lack there of with the images. Additionally, there is a focus on the nature of the images and the imager's responses to the images.

If the imager is not engaged in the process it would reason that the experience would be less meaningful. As the level of engagement increases with an imager, images would become more vivid, images would sustain for longer periods of time, the imager can generate imagery more easily. Additionally, the imager may interact more with characters in the imagery experience and the imager may feel more open and accepting of their images, and have a stronger emotional experience with the images.

The scale is scored using a five point scale, 1 being the least often or the least amount of time and 5 being the most often of the most amount of time. Therefore the higher an individual scores on the scale the more engaged they are in the imagery experience. The guide is able to assess how engaged the individual is the imagery experience not only by the way in which each image is described but also by the manner in which the body is responding throughout the experience. The independent reviewer reviews the transcript from the imagery session and is only able to assess the manner in which the imager engaged in the imagery experience through their descriptions of the imagery.

The Scale of Assessing Responsiveness to Guided Imagery and Music was developed in 1999. Research has not been conducted upon the scale to evaluate its psychometric properties.

This study utilized inter-rater reliability to evaluate an individual's response to the music and imagery sessions.

Physiological Measures

Salivary Immunoglobulin A Test (IgA)

Secretory Immunoglobulin A appears in seromucous secretions such as saliva, tears, nasal fluids, sweat, colostrums and secretions of the lungs and gastrointestinal tracts. The role of IgA is to defend exposed external surfaces of the body against attacking microorganisms.

Salivary IgA helps protect the body by mixing and coating food as it is being chewed, in order to protect the digestive system against any bacteria in the food.

The salivary IgA samples were processed, frozen, stored at Fairview-University Medical Center Patient Laboratory. When all the samples were collected, that staff at Fairview-University Medical Center Patient Laboratory analyzed the samples. The lab technician utilized a Beckman imagery automated nephelometer to process the assays. The analysis process utilized the nephelometric assay, which is based on the antigen/antibody pattern. This is a light scatter assay. Sensitivity for this assay is less than 2ml per decileter. The inter-assay coefficient variation is 3% and the intra-assay coefficient is 2.9%. The analysis of sIgA is sensitive to the 1.8 level. Levels lower than 1.8 are rounded up to the nearest whole number. The normal range of sIgA is 4-37 ml/dL. The lab technician that ran the assays for this study holds a bachelor of science in clinical lab science and has five years experience working at the Fairview-University Medical Center Patient Laboratory (personal communication with Mary Berry, Lab Technician at the Fairview-University Medical Center Patient Laboratory, July 29, 2005).

Lower levels of salivary IgA are associated with suppressed immune function, depressed mood states, and increased levels of stress. When an individual demonstrates low levels of immunoglobulin A it can indicate illness, depressed mood or that the individual is encountering

acute or chronic levels of stress.

Salivary Immunoglobulin A is a test that detects the amount of secretory IgA in saliva. Salivary IgA is an indicator of mood and reflects some aspects of immune functioning, as it is an antibody that attacks antigens or foreign bodies in the body. Salivary IgA helps protect the body against any bacteria in the food. It can be thought of as 'molecular Teflon', in that it coats the substance with a 'nonstick' surface, inhibiting the adherence of microorganisms and preventing their entry into the body (Jenkins, 2004). It plays an important role in protecting the body from upper and lower respiratory tract infections. Studies have shown that lower concentrations of salivary IgA were significantly associated with frequent reports of illness (McClelland, Floor, Davidson, Saron, 1980). There is no research that indicates the salivary IgA is influenced by nicotine, caffeine or body temperature. Due to the fact that sIgA is an antigen in the body it is not susceptible to such factors. Levels of sIgA can be influenced by an inflammatory disease or disorder, as this type of disorder would activate the immune system to produce antibodies to assist in fighting the antigen causing the inflammation (Jenkins, 2004).

Research also suggests that IgA levels decrease significantly in the presence of stress, anxiety and during periods of life change (Jemmott, Borysenko, McClelland, Chapman, Meyer, Benson, 1983; Jemmott & Magloire, 1988).

Researchers focusing on a more integrative approach to immune research advocate a multi-level approach to analyzing immune function. This integrative approach includes social/interpersonal relationships, personality traits, behavioral patterns, psychological makeup (e.g. mood states and how the individual appraises a stressful situation) and biological process. All of these are important factors in explaining immunological variations and health outcomes (Padgett, Sheridan, Dorne, Bernston, Candelora and Glaser, 1998).

An addiction to a substance places an individual at increased risk for additional health issues. Researchers have reported that alcohol abuse suppresses the immune system (Gordon & Lieber, 1992; Flanders, Boring, Annet and DeStefan, 1992; Redwine, Dang, Hall and Irwin, 2003). Reports indicate that individuals with substance abuse problems experience higher rates of ulcers, diabetes, kidney and liver problems, breathing related problems, high blood pressure and hepatitis (Wartenburg & Liepman, 1998; Smith and Seymour, 2001).

Treatment Conditions

Subjects were randomly assigned into one of two groups. Upon their admission a coin flip was utilized to determine the group assignment.

Control Condition

Subjects (N=9) randomized to the control condition did not receive the GIM sessions. The subjects engaged in the regular treatment programming provided by University Good Samaritan Center. Control group subjects completed all the same paper and pencil measures and salivary IgA measure as the experimental group subjects at the pretest and posttest. The posttest measures occurred on the day prior to discharge, which was the final full day of treatment.

Experimental Condition

The experimental group, the group that received the GIM sessions during their treatment contained 10 subjects. The experimental group participated in the following three phases: 1) pretest, 2) intervention and 3) posttest.

The sessions took place in a vacant patient room on the Bridgeway unit at UGSC. This room remained vacant during the duration of the study and was utilized only for study sessions. The room included one single hospital bed, two chairs and a nightstand. During the sessions a sign was placed on the door to ensure that sessions would not be interrupted. The GIM sessions were schedule as to not interfere with regular programming. The sessions typically occurred

during the afternoon, evening or weekend times, following the guidelines for visitors. The GIM sessions were conducted by the researcher. The researcher has completed the training in the Bonny Method of Guided Imagery and Music and is a Fellow with the Association for Music and Imagery.

Equipment

The equipment utilized during each treatment included the standard hospital bed for the client to lay down on during the imagery portion of the session. The researcher sat in a chair adjacent to the bed, while the sound source was placed on the night stand at the head of the bed on the opposite side where the guide was seated. Blankets and pillows were provided to ensure the comfort of the client during the sessions.

The sound system utilized during the sessions was a Magnavox AZ 1407 portable 3 CD changer with a remote control. The music programs were from the compact disc set of *Music for the Imagination* published by Barcelona Publishers (Bruscia, 1996). The music programs were utilized according to the program guidelines and the guidelines taught in the training of the Bonny Method of Guided Imagery and Music.

Procedures

Pretest

Subjects that were eligible were then scheduled to meet again individually with the researcher to review and sign the consent form. The sessions took place in a vacant patient room on the Bridgeway unit. The room was equipped with a hospital bed, two chairs and a night stand. The subjects that signed the consent form were then randomly assigned to either the experimental or control group. All participants completed the Inventory of Interpersonal Problems (IIP-SC), the Sense of Coherence Scale (SOC), and provided the first saliva sample. For the saliva sample collection, subjects were asked to expectorate in a Nunc 1.8 ml cryotube. A line was clearly

marked on each tube to indicate the amount of saliva required which was 400uL (microliters), which allowed enough of a sample for duplicate analysis. Following the collection of the saliva sample, each sample was processed, frozen and stored at the Fairview – University Medical Center Patient Laboratory until the posttest samples were collected and deposited. After the completion of the paper and pencil physiological measures, subjects were scheduled for the first Guided Imagery and Music (GIM) session.

GIM Intervention

The purpose of the intervention for this study was to begin to uncover and address the issues contributing to the individual's method of coping, interpersonal problems, trauma or abuse. Addressing these issues thus leads to changes in methods of coping, overall health and immune function.

Subjects in the experimental group had one GIM session per week during the length of their treatment. The sessions ranged in length from 1 ½ to 2 hours. The length of each session was dependent on the music program selected for that session. At the initial session, GIM was defined as a method of self-exploration which involved listening to specifically designed programs of sequenced classical music to allow images to be experienced and that those images are shared with the guide. Subjects were informed that the guide would be keeping a transcript, a written log of the images as the imagers described them. They were also informed that they would be given a copy of the transcript immediately following the session. The transcript was provided so the subjects could review the images from one session to another.

Subjects were informed of the variety of experiences possible and of the broad definition of images which includes feelings, physical sensations, sensory-kinesthetic experiences, thoughts and memories. GIM was differentiated from relaxation sessions which could also involve music and imagery. This was done by informing participants that although GIM is relaxing at times, it

includes a broad range of experiences, some of which can be uncomfortable. They were told that the purpose of GIM is to experience the images to the extent that one is willing to allow change to occur within them. Subjects were then asked to identify two or three issues or problems that they recognize in their life and would like to address in the sessions.

The music utilized in the sessions was selected according to the individual's needs. No formal assessment tool was utilized to select the music program. Selection of the music program was consistent with the method taught and utilized in the training of the Bonny Method of Guided Imagery and Music.

The music programs were from the Music for the Imagination produced by Barcelona Publishers and utilized according to the guidelines of Bonny (1978b) and Bruscia (1996). (Discography of music programs is in Appendix H). These programs each contain sequences of four to seven selections of classical music. The music programs may be used in their entirety, a portion of two or more programs may be used sequentially as deemed appropriate or individual selections may be employed to extend the music of the program as needed.

The initial phase of each guided imagery and music session consisted of a brief assessment that was conducted by the researcher. No formalized tool was utilized for this assessment. The assessment was conducted according to the technique taught in the training of the Bonny Method of Guided Imagery and Music. The researcher assessed the subject's stress, anxiety and energy levels, asked the subject to identify any particular feelings they may be experiencing and if there were experiences and/or images from previous sessions they felt needed to be addressed.

During all the guided imagery and music sessions, the subject spoke aloud, describing the imagery experience as it occurred. The guide maintained a duplicate written transcript of each session. One copy was given to the subject and one was retained by the guide. Following the

imagery portion of each session the subject was provided an opportunity to discuss any feelings, thoughts, memories or experiences pertaining to the imagery experience or related therapy issues. This post sessions processing ranged in length from twenty to thirty minutes and occurred following each imagery experience. Following the final imagery session, the guide scheduled the posttest session with each subject in the experimental group.

Posttest

The posttest phase for both groups occurred one day prior to discharge, which was the last full day of treatment for each subject. The last day of treatment was selected as the time of posttest data collection, as the time discharge or the day of discharge varies from one patient to the next and it tends to be a busy day of completing paperwork and follow up plans.

Each subject met individually with the author for the posttest session. Subjects from both groups were again asked to complete the SOC, IIP-SC and provided a cryotube for their saliva sample. The samples were processed, frozen and stored at Fairview-University Medical Center Patient Laboratory until each posttest sample was collected. When the samples were collected, they were then delivered to the laboratory.

Data Analysis Procedures

The researcher entered the data into a Microsoft Excel electronic database. The data was reviewed three times to insure accuracy. SPSS-PC was utilized for all data analysis. Kay Savik, MS, a biostatistician in the School of Nursing and School of Medicine at the University of Minnesota conducted the data analysis. Level of significance was set prior to analysis at $p < .05$ for all inferential statistical tests. Data analysis was carried out on pretest and posttest data (Sense of Coherence, Inventory of Interpersonal Problems and salivary immunoglobulin A) to ascertain measures of central tendency (mean, standard deviation and change within each group). The data was not found to be normally distributed on all these measures with the exception of the

meaningfulness subscale on the Sense of Coherence scale.

Analysis of Descriptive Data

Descriptive statistics were carried out on all demographic data (age, sex, drug of choice, mental health diagnoses, medical diagnoses, previous treatment episodes). Mann-Whitney U test was utilized to examine the data for any significant associations between groups on the categorical data of age, number of years of use, previous treatment episodes, and length of current treatment episode. These categories of data were normally distributed and there were no significant differences between groups. Chi-square test of Association was utilized to examine the data for any significant associations between groups on the categorical data on gender, drug of choice, and level of education. These categories of data were normally distributed and no significant differences were demonstrated between groups.

It was anticipated that significant associations for some of the demographic and descriptive data, like the years of use or previous treatment episodes, may impact the findings on these dependent variables and would need to be controlled for statistically. The Mann-Whitney U was utilized to control for any differences. No significant differences were detected between the two groups.

Analysis by Hypotheses

Hypothesis #1: Subjects assigned to GIM will report a decreased number of interpersonal relationship issues from the pretest to the posttest as measured by the Short Form of the Inventory of Interpersonal Problems Circumplex Scales as compared to those who do not receive GIM.

Analysis of Covariance was utilized to ascertain any significant differences between the two groups on pretest and posttest scores of the Inventory of Interpersonal Problems. The variable that was controlled for was the baseline measure.

Hypothesis #2: Subjects assigned to GIM sessions will report an increase in manageability, comprehensibility and meaningfulness of their life from the pretest to the posttest as measured by the Orientation to Life Questionnaire (Sense of Coherence Scale) as compared to those who do not receive GIM.

Analysis of Covariance was utilized to compare variables between groups on pretest and posttest scores of the Sense of Coherence Scale. The variable that was controlled for was the baseline measure.

Hypothesis #3: Subjects assigned to GIM sessions will experience an increase in immune function from the pretest to the posttest as demonstrated by an increase in salivary Immunoglobulin A levels as compared to those who do not receive GIM.

Analysis of Covariance was utilized to compare variables between groups on pretest and posttest levels of salivary immunoglobulin A. The variable that was controlled for was the baseline measure.

CHAPTER 4

RESULTS

Demographic Data

The study included nineteen subjects that were admitted for inpatient chemical dependency treatment. Ten subjects were assigned to the experimental group and nine in the control group. For a more in depth profile of the subjects please refer to Appendix F for experimental group profiles and Appendix G for control group profiles. The subject profiles include information on: gender, age, ethnic background, a brief family history, education, drug of choice, years of use and significant life events. The names of the subjects have been changed to protect their identity.

Table 4.1 provides an analysis of subject demographic data. The experimental group included 8 male subjects and 2 female subjects, while the control group included 7 male subjects and 2 female subjects. The age of subjects in the experimental group ranged from 41 to 64 years with a mean age of 54.2 (SD 7.3). The age of the control subjects ranged from 42 to 63 years with a mean age of 57.8 (SD 7.1). The overall drug of choice for subjects in both groups was alcohol, this being the drug of choice for 17 (89.5 %) of the subjects and cocaine for 2 (10.5 %) of the subjects. Nine (90%) subjects in the experimental group reported alcohol to be their drug of choice, while one (10%) subject reported cocaine as their drug of choice. In the control group, 8 (88.8%) reported alcohol as their drug of choice and 1(11.1%) reported cocaine as their drug of choice. Many subjects reported that at different times in their lives they have engaged in using other substances, even multiple substances at a time. However, the drug they reported was currently their drug of choice.

The number of years subjects have been addicted to their drug of choice is included. The years of use for experimental group subjects ranged from 1 year to 35 years with a mean of 21.1

(9.4) years of use. The control group subjects reported a range of 1 year to 44 years of addiction to their drug of choice with a mean of 20.4 (13.0) years.

Table 4.1
Subject Demographic Information

	Experimental	Control	Total
Number of subjects	10	9	19
Gender			
Male	8 (80%)	7(77.7%)	15 (78.9%)
Female	2 (20%)	2 (22.2%)	4 (21%)
Mean age (SD)	49.0 (7.3)	57.8 (7.1)	55.9 (7.2)
Ethnicity			
Caucasian	9 (90%)	8 (88.8%)	17 (89.5%)
African-American	1 (10%)	0	1 (5.3%)
Native American	0	1 (11.1%)	1 (5.3%)
Drug of choice			
Alcohol	9 (90%)	8 (88.8%)	17 (89.5%)
Cocaine	1 (10%)	1 (11.1%)	2 (10.5%)
Means years of use (SD)	21.1 (9.4)	20.4 (13.0)	20.8 (10.9)
Mean number of previous treatment episodes (SD)	5.7 (3.7)	4.0 (3.4)	4.9 (3.6)
Education level			
GED	1 (10%)	1 (11.1%)	2 (10.5%)
High school graduate	7 (70%)	5 (55.5%)	12 (63.5%)
Associate degree	1 (10%)	1 (11.1%)	2 (10.5%)
Bachelor's degree	0	1 (11.1%)	1 (5.3%)
Master's degree	0	1 (11.1%)	1 (5.3%)
Doctoral degree	1 (10%)	0	1 (5.3%)

The number of previous treatment episodes for subjects was an overall mean of 4.9 (SD 3.6). The mean number of previous treatment episodes for the experimental group was 5.7 (SD 3.7) with a range of 2 to 13. The mean number of previous treatment episodes for the control group was 4.0(SD 3.4) with a range of 1 to 10. The difference in number of previous treatment episodes between the experimental and control groups was not statistically significant. The educational levels for the experimental and control group ranged from a GED to a doctoral degree. In the experimental group 10% of the subjects had a GED, 70% were high school graduates, 10% held an associate's degree and 10% a doctoral degree. In the control group, 11.1% held a GED, 55.5% were high school graduates, 11.1% held a associate's degree, 11.1% held a bachelor's degree, and 11.1% held a master's degree.

Subjects were asked to describe medical/physical diagnoses or concerns. Diagnoses were confirmed with their charts. Table 4.2 includes a summary of these medical and physical conditions. Many subjects were diagnosed with multiple conditions and/or disorders. In many of the cases, the condition was often related, or a result of, or exacerbated by the substance disorder. Each diagnosis or condition is represented by the number of individuals in each group that carried the diagnosis. Overall, every subject was diagnosed with at least one medical condition or physical concern. Twenty-six percent of subjects suffered from liver damage or cirrhosis, 37% experienced chronic pain, back pain and/or arthritic pain, while nearly 16% had high blood pressure, and 10.5% had diabetes. Twenty-six percent were diagnosed with neuropathy or balance issues resulting from their substance use. Nearly 32% experienced hearing, memory or vision loss. The individual reporting total loss of vision indicated that the vision loss occurred following an episode of drinking gasoline.

Table 4.2
Subject Co-morbidities

	Experimental n=10	Control n=9	Total N=19
Liver damage/cirrhosis	2	3	5
Chronic pain/back pain	1	1	2
High blood pressure	2	1	3
Neuropathy	1	1	2
Problems with balance	2	1	3
Diabetes	2	0	2
COPD	0	1	1
Hearing loss	1	0	1
Arthritis	3	2	5
Memory loss	2	2	4
Traumatic brain injury	1	1	2
Stroke	1	1	2
Ulcers (bleeding)	2	1	3
Heart problems	2	2	4
Lupus	0	1	1
Heptatitis C	0	1	1
Poor kidney function	0	1	1
Vision loss/Blindness	0	1	1

COPD = Chronic Obstructive Pulmonary Disease

Five percent reported being diagnosed with Chronic Obstructive Pulmonary Disease (COPD) and Lupus. Nearly 11% of the subjects had suffered a traumatic brain injury or a stroke and 16% experienced bleeding ulcers.

Table 4.3 includes the various mental health diagnoses subjects had received in addition to their substance related diagnosis. Each diagnosis includes a representation of how many individuals from the experimental and control groups reported this as a current issue. It is also possible for an individual to be diagnosed with multiple diagnoses. For example, a subject could be diagnosed with substance abuse, depression and posttraumatic stress disorder.

In the experimental group, only two individuals did not have co-occurring mental health diagnoses and in the control group only one individual did not have a co-occurring mental health diagnosis. The co-occurring diagnosis is the diagnosis that an individual has in addition to their chemical dependency diagnosis. Overall, 10% of the subjects were diagnosed with an adjustment disorder. These were related to the loss of a spouse and declining health. Nearly 16% of the subjects were diagnosed with a generalized anxiety disorder, 11% diagnosed with a personality disorder and 5% diagnosed with intermittent explosive disorder. Forty-seven percent of the subjects were diagnosed with depression and 26% were diagnosed with posttraumatic stress disorder. Those individuals diagnosed with posttraumatic stress disorder were all Vietnam veterans. These diagnoses were given shortly after returning from the war.

Table 4.3
Subject Mental Health Diagnoses

	Experimental n=10	Control n=9	Total N=19
Adjustment disorder	1	1	2
Generalized anxiety disorder	2	1	3
Depression	5	4	9
Personality disorder			
Anti-social	0	1	1
Borderline	1	0	1
Posttraumatic stress disorder	3	2	5
Intermittent explosive disorder	1	0	1

Table 4.4 represents what prompted the subjects to enter treatment. In some cases there were multiple motivators for individuals to enter treatment. Overall, nearly 79% of the subjects were prompted to treatment due to their declining health, 42% entered treatment due to concerns raised by family members, 60% of the individuals were recommended to treatment by a physician, and almost 32% of the subjects were court ordered to treatment.

Table 4.4
Subject Motivation to Enter Treatment

	Experimental n=10	Control n=9	Total N=19
Declining physical health	7	8	15
Family concerns	4	4	8
Physician recommended	7	4	11
Court ordered	4	2	6

The length of treatment in this study varied for each individual in the experimental and the control group. The variance in length of treatment is due to whether an individual is court ordered for a certain number of treatment days or by the number of days covered by their insurance. The number of days covered by insurance varies from one insurance company to another. Table 4.5 includes the data on length of the current treatment episode for the experimental and control groups. The mean number of days for the current treatment episode for both groups was 42.7 (SD 10.7). The range of days of this current treatment for the experimental group was 25 to 60 days with a mean of 40.7(SD 11.4) days, a median and mode of 40 days. The range of days of this current treatment episode for the control group was 30 to 60 days, with a mean and median of 45 (SD 10.0) days and a mode of 45 days. The difference between the two groups on the length of current treatment was not normally distributed, so the Mann-Whitney U test was utilized to control for these differences. The result demonstrated that the differences

between the experimental and control groups was not statistically significant; $z(1,2) = -1.1, p = .24$.

Table 4.5
Data on Length of Current Treatment Episode

	Experimental n=10	Control n=9	Total N=19
Range of treatment (days)	25–60	25–60	25–60
Median	40	45	40
Mean length (days) of stay for current treatment episode (SD)	40.7 (11.4)	45 (10.0)	42.7 (10.7)

The length of treatment for subjects varied depending on insurance carrier and whether there was a court order to attend treatment. This variation in length of stay in treatment was evident in the experiment and control groups. These differences are a reality in chemical dependency treatment. In order to work with these variations, measures occurred as follows; pretest measures for control group subjects occurred on the day following admission into treatment and posttest measures occurred the last full day of treatment which was the day prior to discharge. Table 4.6 illustrates the number of days between measures for the control group. The range of days between pretest and posttest measures was 33 to 58 days with a mean of 43 (SD 10.7) days.

Table 4.6
Data on Days Between Measures for Control Group

Subject	Days between measures	Length of Stay in treatment
1	43	45
2	33	35
3	43	45
4	58	60
5	58	60
6	28	30
7	43	45
8	38	40
9	43	43

The individuals assigned to the experimental group received one Guided Imagery and Music (GIM) session per week during the course of their treatment. The sessions were scheduled during the subject's free time or down time. This was done to insure subjects did not miss any portion of their regular treatment program. Table 4.7 illustrates the number of GIM sessions that the experimental subjects received during their course of treatment. All of the sessions occurred between 2:00 – 4:30 pm, Monday through Friday. The subjects did not have programming during this time frame; sessions were only scheduled during this time period so that the GIM sessions would not interfere with their regular treatment programming. The control subjects utilized this time for reading assignments for therapy groups or to work on the Twelve Steps.

The number of sessions ranged from 4 to 7 sessions with a mean of 5.8 (SD 1.0) sessions, a median of 6 sessions and a mode of 5 sessions. The number of sessions an individual received was determined by their length of stay in treatment. The GIM sessions varied in length (between 1 ½ to 2 hours) depending on the music program utilized for each session. Table 4.7 illustrates the data on the average length of GIM sessions. (Refer to Appendix I for a complete discography of the GIM music programs). The programs in each session were selected by the researcher/guide on an individual basis following a pre-session dialogue with the subject. Each session included a period of time for pre-session dialogue. This time allowed for introducing the individual to the GIM sessions if it was the initial session. Following the initial session, this pre session time allowed for the researcher to follow up on any thoughts or insights the subject may have from the previous session. After the pre session period, the researcher initiated the music and imagery portion of the session. Then, following the music and imagery period, time for processing the music and imagery experience was allowed. Overall, sessions lasted from 1 ½ hours to 2 hours in length with averages ranging from 1.7 to 1.8 hours in length

The Scale for assessing responsiveness to GIM developed by Ken Bruscia was utilized to evaluate the experimental subjects' responsiveness to the imagery sessions. The researcher and another music therapist (GIM fellow) trained in the Bonny Method of Guided Imagery and Music each evaluated 29 randomly selected session transcripts. The music therapist/GIM fellow that also reviewed the transcripts had no contact with the subjects. She lived out of state and was only mailed the transcripts to be reviewed.

Table 4.7
Length of GIM Sessions for the Experimental Group

Subject	Number of GIM sessions	Average length of sessions (hours)
1	6	1.75
2	7	1.80
3	5	1.80
4	7	1.70
5	7	1.80
6	6	1.80
7	6	1.75
8	5	1.80
9	4	1.75
10	5	1.80

An individual's responsiveness can be influenced by a number of factors. These include: energy level/fatigue or tiredness, motivation for therapy, stress, anxiety and rapport with the therapist. Prior to each imagery session the researcher assessed the subject's energy level, stress and anxiety levels and what the subject wanted to accomplish as a part of the therapy process. These factors were taken into consideration when selecting the music program for the session.

There were 58 transcripts total from all the guided imagery and music sessions conducted with experimental subjects. Twenty-nine of these transcripts were independently reviewed and rated by the research and an independent rater, utilizing the Imagery Responsiveness Scale by Kenneth Bruscia. The researcher then tallied all the scores. These scores ranged from 40 to 52, the lowest possible score of 11 and maximum score of 55. The inter-rater reliability was

calculated by the researcher. On the questions that the two raters gave a matching score a value of 0 was assigned, if there was a one point difference between scores on a question a value of .5 was assigned and on questions where the difference was greater than 1 point a value of 1 was assigned. The scores were totaled and averaged with an inter-rater reliability of .86.

Results of Analyses by Hypotheses

Hypothesis #1: Subjects assigned to GIM sessions will report a decreased number of interpersonal relationship issues from the pretest to the posttest as measured by the Short Form of the Inventory of Interpersonal Problems Circumplex Scales as compared to those who do not receive GIM.

The higher an individual scores in an area the more problems they encounter within that area of their interpersonal relationships. The lowest score an individual can achieve on a subscale is 0 and the highest is 16. A decrease in scores from pretest to posttest would indicate that an individual is encountering few problems in that area of their interpersonal relationship.

An independent t-test was utilized to compare the two groups at baseline. The data for the experimental and control groups did not demonstrate significant differences at baseline. Analysis of Covariance was utilized to analyze posttest measures. The covariate being controlled was the baseline measure.

Table 4.8 illustrates the means and standard deviations of the pretest scores of the experimental and control groups on the eight subscales of the Inventory of Interpersonal Problems.

Table 4.9 illustrates the means and standard deviations of the posttest scores of the experimental and control groups on the eight subscales of the Inventory of Interpersonal Problems.

Table 4.8
Mean Pretest Scores on the Inventory of Interpersonal Problems for Experimental and Control Group

Subscale	Experimental Group n=10 Mean (SD)	Control Group n=9 Mean (SD)	t (df)	p-value
Domineering	4.2 (2.4)	4.2 (2.2)	-.02(17)	.98
Vindictive	4.2 (2.9)	4.9 (2.4)	-.55(17)	.59
Cold	7.0 (5.0)	7.1 (2.4)	-.06(17)	.95
Socially avoidant	6.1 (4.3)	6.7 (2.1)	-.36(17)	.73
Non-assertive	9.2 (3.3)	8.1 (3.2)	.73(17)	.48
Exploitable	7.0 (2.6)	8.6 (2.1)	-1.4(17)	.17
Overly nurturant	9.6 (2.5)	8.4 (2.1)	1.1(17)	.29
Intrusive	5.1 (3.1)	6.2 (3.6)	-.73(17)	.48

Table 4.9
Mean Posttest Scores on the Inventory of Interpersonal Problems for Experimental and Control Groups

Subscale	Experimental Group n=10 Mean (SD)	Control Group n=9 Mean (SD)	ANCOVA(df)	p-value
Domineering	3.0 (1.2)	4.9 (2.6)	5.2(1,16)	.04*
Vindictive	3.4 (2.1)	5.7 (2.9)	3.8(1,16)	.07
Cold	5.5 (4.4)	8.4 (2.8)	8.1(1,16)	.01*
Socially avoidant	4.2 (3.7)	6.4 (3.0)	4.1(1,16)	.06
Non-assertive	6.4 (3.8)	9.3 (4.0)	4.6(1,16)	.048*
Exploitable	6.2 (3.9)	7.9 (2.6)	.003(1,16)	.96
Overly nurturant	6.6 (3.1)	8.8 (1.9)	3.3(1,16)	.09
Intrusive	4.5 (2.3)	6.6 (3.4)	1.8(1,16)	.20

* = p<0.05

Table 4.10 provides an illustration of the comparison data between the two groups. Analysis of Covariance was utilized to evaluate the changes between the groups. The covariate being controlled for was the baseline measure.

Table 4.10
Overall Group Change within Experimental and Control Groups on the Inventory of Interpersonal Problems

Subscale	Experimental Group	Control Group
	n=10 Mean (SD)	n=9 Mean (SD)
Domineering	-1.2 (2.2)	+0.7 (2.6)
Vindictive	-0.8 (4.1)	+0.8 (3.5)
Cold	-1.5 (2.0)	+1.3 (2.6)
Socially Avoidant	-1.9 (1.7)	-0.2 (2.2)
Non-assertive	-2.8 (3.4)	+1.2 (4.1)
Exploitable	-0.8 (2.5)	-0.7 (1.5)
Overly Nurturant	-3.0 (4.3)	+0.3 (1.7)
Intrusive	-0.6 (3.3)	+0.3 (1.7)

Overall, the control group decreased on two of the subscales and increased on the remaining six subscales. The overall comparison between the two groups produced significant change on three of the eight subscales including, domineering, vindictive and non-assertive. Therefore, hypothesis #1 is not totally rejected since scores on three of the eight subscales of demonstrated statistical significance.

This significant change occurred on the domineering subscale, $F(1,16) = 5.2, p = .04$, on the cold subscale, $F(1,16) = 8.1, p = .01$ and on the non-assertive subscale, $F(1,16) = 4.6, p = .05$. The changes between the groups on the five remaining subscales did not produce significant changes, however the level of significance is as follows: vindictive $F(1,16) = 3.8, p = .07$, socially avoidant $F(1,16) = 4.1, p = .06$, exploitable $F(1,16) = .003, p = .96$, overly nurturant $F(1,16) = 3.3, p = .09$, and intrusive $F(1,16) = 1.8, p = .20$.

Hypothesis #2: Subjects assigned to GIM sessions will report an increase in manageability, comprehensibility and meaningfulness of their life from the pretest to the posttest as measured by the Orientation to Life Questionnaire (Sense of Coherence Scale as compared to those who do not receive GIM).

Table 4.11 illustrates the means and standard deviations on pretest scores of the experimental group and control group on the Sense of Coherence Scale. Table 4.12 illustrates the means and standard deviations of the posttest scores for the experimental and control groups on the Sense of Coherence Scale.

Comparisons on the pretest measures were completed utilizing an independent t-test. The data for experimental and control group subjects on the Sense of Coherence Scale did not demonstrate any significant differences at baseline on the comprehensibility or the manageability subscales, however, a significant difference was demonstrated on the meaningfulness subscale. The experimental group scored significantly higher on this subscale than the control group, $P=.04$. The Analysis of Covariance was utilized to control for this pretest difference.

The experimental group did demonstrate significant change on the comprehensibility subscale and on the manageability subscale. The pretest scores of the experimental group were significantly higher than the control group on the meaningfulness subscale. The control group did demonstrate significant change on the meaningfulness subscale.

Table 4.11
Mean Pretest Scores on the Sense of Coherence Scale for Experimental and Control Groups

Subscale	Experimental Group	Control Group	t(df)	p-value
	n=10 Mean (SD)	n=9 Mean (SD)		
Meaningfulness	39.0 (7.3)	32.4 (5.0)	2.3(17)	.04
Comprehensibility	34.1 (8.8)	34.1 (3.4)	-.004 (17)	.99
Manageability	44.3 (8.3)	42.9 (4.8)	.45(17)	.86

Figure 4.12 illustrates the means and standard deviations of the posttest scores of the experimental and control groups on the Sense of Coherence Scale.

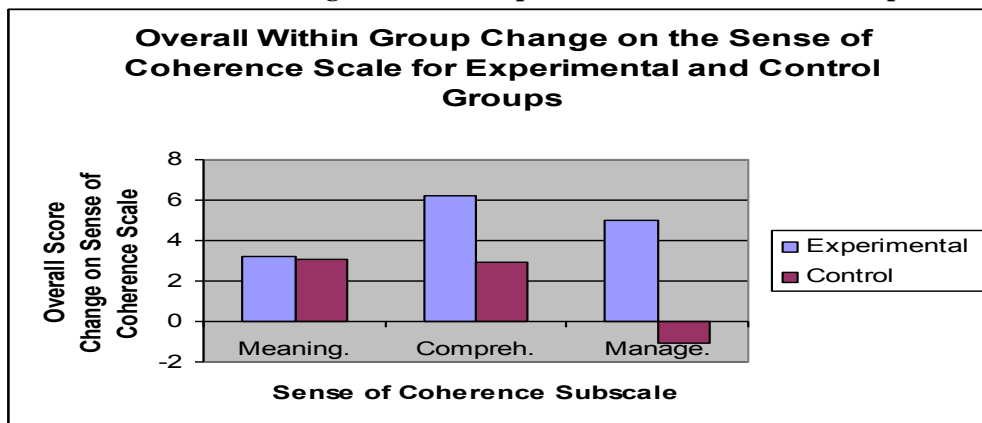
Table 4.12
Mean Posttest Scores on the Sense of Coherence Scale for Experimental and Control Groups

Subscale	Experimental Group n=10 Mean (SD)	Control Group n=9 Mean (SD)	ANCOVA(df)	p-value
Meaningfulness	42.2 (4.1)	35.6 (5.6)	3.1(1,16)	.10
Comprehensibility	40.3 (5.1)	37.0 (5.8)	1.6(1,16)	.22
Manageability	49.3 (7.5)	41.8 (5.4)	7.8(1,16,)	.01*

* = $p < 0.05$

Figure 4.1 illustrate the overall mean change within the experimental and control groups on the Sense of Coherence Scale, along with the standard deviations and p -values.

Figure 4.1
Sense of Coherence: Changes with the Experimental and Control Groups



Analysis of Covariance was utilized to control for the baseline differences between the experimental and control groups. In comparing the overall change on the meaningfulness and comprehensibility subscales, no significant change was found for the experimental or control group. The overall score change on the comprehensibility subscale for the experimental group was an increase of 6.2 and an increase of 2.9 for the control group.

Additionally, in comparing the overall change no significant change occurred on the meaningfulness subscale, $F(1,16) = 7.8, p = .10$, or the comprehensibility subscale, $F(1,16) = 1.6, p = .22$. On the manageability subscale, no significant difference was evident between the

groups on the pretest scores ($p = .66$). A significant difference was demonstrated on the manageability subscale overall, $F(1,16) = 7.8, p = .01$. Therefore, hypothesis #2 is not fully rejected as a significant difference was demonstrated on the manageability subscale.

Hypothesis #3: Subjects assigned to GIM sessions will experience an increase in immune function from the pretest to the posttest as demonstrated by an increase salivary Immunoglobulin A levels as compared to those who do not receive GIM.

Pretest saliva samples were collected when study documentation was completed for all subjects. For all the subjects this occurred in the initial meeting with the researcher. Posttest saliva samples were collected one day prior to discharge with experimental and control group subjects. This was the final full day of treatment for each subject. Often the day of discharge is not a full day of treatment and patients are busy completing paperwork and discharge times may be dependent upon arranged transportation. This can mean that the day of discharge may not be a full day of treatment. The normal range of salivary IgA is 4-37 mg/dL (personal communication with Mary Berry at the Fairview-University Medical Center Outpatient Laboratory, July 29, 2005)

The data for experimental and control groups on the salivary IgA levels did not demonstrate significant differences at baseline, utilizing an independent t-test. The Analysis of Covariance was utilized to analyze the posttest data, controlling for baseline IgA measures.

Table 4.14 illustrates the pretest and posttest levels of salivary IgA for the experimental and control subjects. This table also includes the level of change from the pretest level to the posttest level for both groups. All of the subjects in the experimental group did demonstrate an increase in sIgA, although this was not statistically significant it does demonstrate a data trend. Seven of the he subjects in the control group demonstrated an increase in sIgA, however three of the subjects demonstrated a decrease.

Table 4.14
Salivary Immunoglobulin A Data for Experimental and Control Groups

Subject	Pretest Score	Posttest Score	Level of Change
E1	8	26	+18
E2	8	15	+7
E3	10	26	+16
E4	23	39	+16
E5	10	26	+16
E6	3	8	+5
E7	3	8	+5
E8	8	31	+23
E9	6	34	+28
E10	1	4	+3
C1	18	31	+13
C2	10	14	+4
C3	4	13	+9
C4	7	34	+17
C5	12	10	-2
C6	14	8	-6
C7	9	24	+15
C8	8	5	-3
C9	7	10	+7

E = Experimental group (n=10)

C = Control group (n=9)

Figure 4.2 illustrates the pretest and posttest salivary Immunoglobulin A levels of the experimental group.

Figure 4.2
Pretest and Posttest Levels of Salivary IgA of the Experimental Group

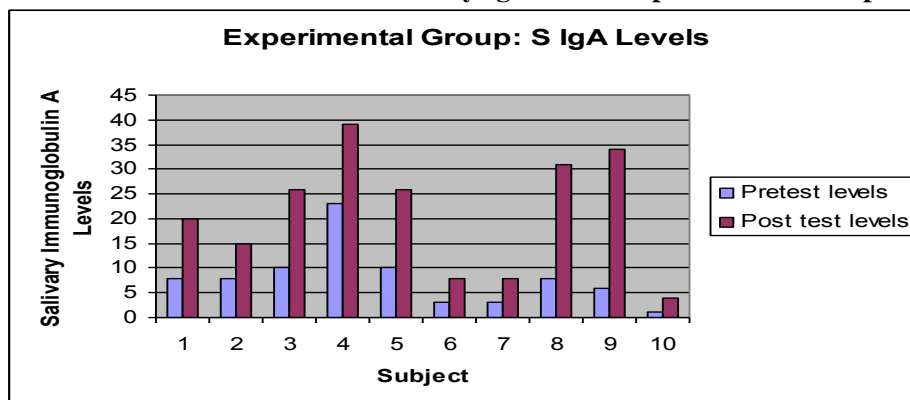


Figure 4.3 illustrates the pretest and posttest salivary IgA levels of the control group.

Figure 4.3

Pretest and Posttest Levels of Salivary IgA of the Control Group

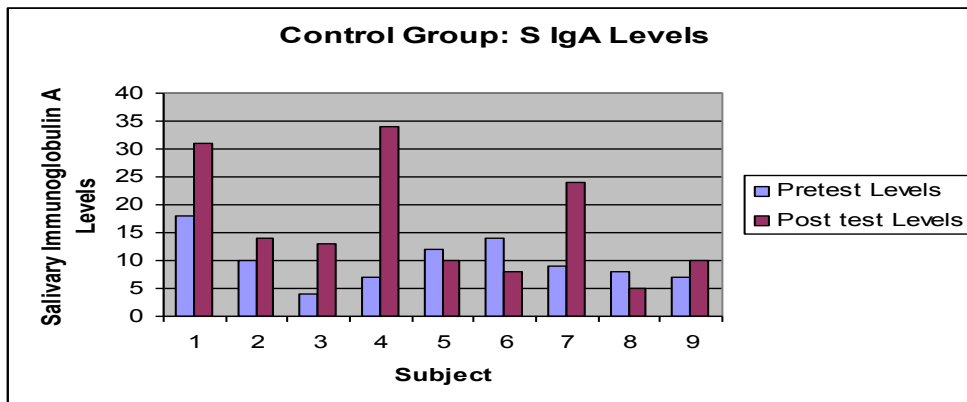
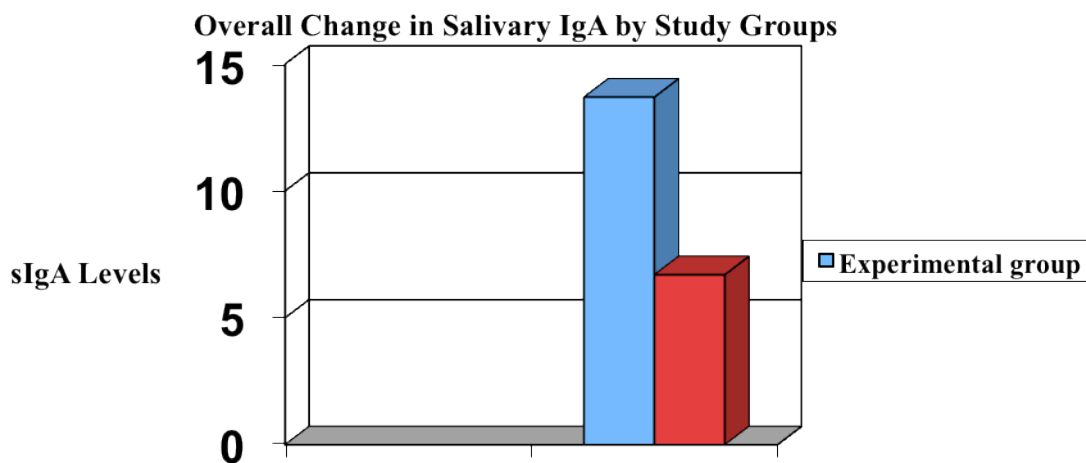


Figure 4.3 demonstrates the overall group change in sIgA levels in the experimental group and the control group. The overall change for the experimental group was +13.7 and the overall change for the control group was +6.7. Despite the difference change within the experimental group, when the two groups were compared the change was not significant, $F(1,16) = 2.7, p = 0.12$.

Figure 4.4

Changes in Salivary IgA Levels for Experimental and Control Groups



Summary of Findings

The aim of this study was to test the effectiveness of the Bonny Method of Guided Imagery and Music on the level of interpersonal problems, sense of coherence and salivary immunoglobulin A of adults in chemical dependency treatment.

The experimental group demonstrated significant decreases on three of the eight subscales on the Inventory of Interpersonal Problems. These included the following subscales: domineering, cold and non-assertive. The control group did not demonstrate a significant change on any of the eight subscales.

On the Sense of Coherence Scale, the experimental group demonstrated significant change on two of these subscales: comprehensibility and manageability. The control group demonstrated significant change on one subscale, that being meaningfulness.

The experimental group did not demonstrate a significant increase in salivary IgA, nor did the control group.

Further discussion of all of these findings will occur in Chapter 5.

CHAPTER 5

DISCUSSION

This chapter discusses the findings from this study and their relationship to the demographic data, the descriptive data, hypotheses, research questions and the findings pertaining to the conceptual framework. The limitations of this study, including conclusions, recommendations for future studies, and implications for the practice of music therapy will be articulated.

Discussion of Demographic Data

Subject Recruitment

Subjects were recruited from the Bridgeway program at the University Good Samaritan Center. The facility had extended an invitation to the researcher to conduct the research with their patients. The willingness of the facility to be a research site, provided the necessary cooperation with the unit staff to assist the researcher in updates on admissions to the program, obtaining subject information and scheduling the guided imagery and music sessions.

Sample Gender

It was not surprising that 78.9% of the recruited subjects were male, while only 21.1% were female. Previous research estimates that the majority of those addicted to alcohol in the United States are male. These studies report that the ratio of male to female alcohol abusers is between 2:1 and 3:1 (Hill, 1995; Blume 1994; Cyr & Moulton, 1993).

Sample Ethnicity

Research indicates that Caucasians are the largest ethnic group to consume alcohol, although Hispanic men are more than twice as likely as white and African American males to be involved in heavy drinking (more than 5 drinks per occasion) (Kinney, 2000). Based on these reports, it is not surprising that 89% of the subjects were Caucasian, 5% African-American and

5% Native-American.

Level of Education

Researchers report that for both men and women, alcohol use continues with higher levels of education. Individuals with more than 12 years of education are twice as likely to abuse alcohol (Kinney, 2000). However, individuals with less than 12 years of education are twice as likely to engage in heavy or binge drinking (Doweiko, 2002).

These statistics appear to be consistent with the education levels of the subjects enrolled in this study. Eleven percent of the subjects held a GED, while 89% were high school graduates, held an associate, bachelors, masters or doctoral degree.

Primary Diagnosis

A majority of the subjects carried a diagnosis of alcohol abuse, 89% while only 11% carried a diagnosis of drug addiction. Research indicates that alcohol addiction accounts for 85% of all drug addictions (Doweiko, 2002; Lieber, 1995). Reports indicate that roughly 8% of adults surveyed are illicit drug users (Doweiko, 2002).

Years of Use

The DSM-IV-TR delineates an individual demonstrate engaging in maladaptive patterns of substance use for at least a 12 month period to be diagnosed with a substance use disorder. The years of use for the subjects ranged from 1 to 44 years with a mean of 21 years of use. Eighty-nine percent of the subjects demonstrated 10 or more years of substance use. The number of years of use is a factor of consideration in the level of treatment to which a person is referred or court ordered to complete.

Previous Treatment Episodes

The longer an individual engages in using or abusing a substance, the greater the challenge in changing the maladaptive patterns (Dimeff & Marlatt, 1995; DeJong, 1994). As the

years of use increase, the number of treatment episodes can increase accordingly. The number of previous treatment episodes for the subjects in the study ranged from 1 to 13, while 53% of the subjects had 5 or more previous treatment episodes.

The need for repeated treatment episodes typically leads to a referral for a more restrictive treatment environment. Due to the restrictive level of treatment in the inpatient setting, it is not surprising that the subjects had undergone multiple treatment episodes.

Co-occurring Mental Health Diagnoses

It was not surprising that 84% of the subjects carried a co-occurring mental health diagnosis, while 16% did not. Researchers demonstrated disagreement surrounding the frequency of a co-occurring or dual diagnosis (Doweiko, 2002). Some researchers indicate that individuals with a mental health condition are 12% to 50% more likely to qualify for an alcohol or drug abuse/addiction diagnosis (Leshner, 1997b; Svakis, Zarin, Tanielian, and Pincus, 2000). Overall, it has been suggested that 40 – 75% of individuals with a mental illness have a substance abuse disorder (Appleby, Dyson, Luchins & Cohen, 1997).

Forty-seven percent of the subjects in this study carried a diagnosis of depression, 26% carried a diagnosis of post-traumatic stress disorder (PTSD), 16% were diagnosed with an anxiety disorder, 11% were diagnosed with an adjustment disorder, 11% were diagnosed with a personality disorder and .05% diagnosed with an explosive disorder.

Research indicates that 32% of individuals diagnosed with depression also carry a diagnosis of substance abuse, while 36% of those diagnosed with an anxiety disorder also carry a substance abuse diagnosis (Ziedonis & Brady, 1997). PTSD falls under that category of anxiety disorders in the DSM-IV-TR and is therefore not separated out in the statistical analyses.

Medical Diagnoses

Every subject in the study carried at least one medical condition or medical diagnosis. The subjects encountered a variety of medical diagnoses, all of which are not typically associated with or a result of alcohol or drug use. The following disorders/diagnoses are frequently associated with drug or alcohol use: ulcers (bleeding), gastritis, liver disease or cirrhosis, pancreatitis, anemia, neuropathy, poor kidney function, and arthritis (Wilcox & Erickson, 2005).

The medical diagnoses associated with drug and alcohol use and most frequently encountered by the subjects included: liver damage, arthritis, heart problems, bleeding ulcers, and poor kidney function. The variety of other diagnoses encountered by subjects have not necessarily been directly correlated to substance use, however substance use can place an individual at a higher risk for these other medical complications.

In some cases, a subject's traumatic brain injury or chronic back pain was a result of an accident in which they were drinking, high or under the influence. Other diagnoses such as high blood pressure and diabetes may not be a direct result of the substance use, however substance use can exacerbate these conditions (Wilcox & Erickson, 2005).

Discussion of Descriptive Data

Motivation for Entering Treatment

Since the subjects enrolled in the study were undergoing inpatient treatment and the fact that inpatient treatment is the most restrictive level of care, it is not surprising that these individuals came to treatment for a few different reasons. For most of the subjects this included more than one motivating factor.

Eighty percent of the subjects came to treatment because of declining physical health. This was a result of chronic substance use. Fifty-eight percent were encouraged to enter treatment by their physician, 42% identified family concerns as a motivating factor to enter treatment and

32% were court ordered to treatment.

Length of Treatment

In the 1990's, concerns about the rising cost of healthcare instituted efforts to limit coverage for medical treatments (Kinney, 2000). Insurance companies became increasingly more reluctant to cover these residential or inpatient services (Doweiko, 2002). Inpatient or residential programs usually treat those individuals that have not been successful in an outpatient setting, have been labeled difficult to treat, are seriously ill/heavy users (Kleber, 1997). Inpatient treatment is the most restrictive level of treatment and carries the highest financial cost.

Some researchers have reported that individuals receiving inpatient treatment identify a strong response to the treatment process after 14 days (Moos, King & Patterson, 1996). Frequently the decision about treatment becomes a financial decision. This decision was determined by an individual's insurance company. This accounts for the variation in length of treatment for the subjects. This issue of insurance coverage is now a mainstay in this day and age of healthcare. Healthcare providers and patients alike have needed to adjust to this change. This change in healthcare coverage accounts for the variation in length of treatment for the subjects. The subjects' length of treatment time ranged from 20 to 60 days.

Discussion of Results by Hypotheses

Hypothesis #1: Subjects assigned to GIM sessions will report a decreased number of interpersonal relationship issues from the pretest to the posttest as measured by the Short Form of the Inventory of Interpersonal Problems Circumplex Scales as compared to those who do not receive GIM.

The experimental group demonstrated significant decreases on three of the eight subscales of the IIP-SC, those being: domineering, cold and non-assertive. The control group did not demonstrate significant decreases on any of the eight subscales. The experimental group

demonstrated decreases on the remaining five subscales of the inventory, including: vindictive, socially avoidant, exploitable, overly nurturant and intrusive. The control group demonstrated decreases on only two of the eight subscales including: socially avoidant and exploitable, while demonstrating increases on the six remaining subscales: domineering, vindictive, cold, non-assertive, overly nurturant and intrusive.

It is expected that the control group would experience a decrease in the level of interpersonal problems, since some of these issues are likely to be addressed in the course of treatment and during some of the group therapy sessions. The fact that the control group demonstrated decreases on only two of the eight subscales, while the experimental group demonstrated decreases on all eight subscales does point to movement in the direction that supports this hypothesis #1.

The three subscales the experimental group demonstrated significant change on were domineering, cold and non-assertive. These subscales represent ways of interacting with others: dominating others, being emotionally distant (cold) from others and feeling unable to assertive oneself with others. The significant changes in these areas represent a change in that an individual does not feel a need to dominate in their interpersonal relationships, they can be more emotionally connected (less cold) toward others, and they can assertive themselves in their interpersonal interactions.

Hypothesis #2: Subjects assigned to GIM sessions will an increase in manageability, comprehensibility and meaningfulness of their life from the pretest to the posttest as measured by the Orientation to Life Questionnaire (Sense of Coherence Scale) as compared to those who do not receive GIM.

The experimental group demonstrated a significant increase on one of three subscales, that being manageability. The control group did not demonstrate any significant change on the

three subscales. The experimental group did demonstrate decreases on the remaining two subscales: meaningfulness and comprehensibility. The control did demonstrate an increase on two of the subscales, including: meaningfulness and comprehensibility. However, the control group did demonstrate a decrease on the manageability subscale.

The statistical significance achieved by the experimental group on the two subscales does support hypothesis #2, that Guided Imagery and Music significantly increases Sense of Coherence scores. It is expected that some positive change would occur on the Sense of Coherence Scale for the control group since this group is also undergoing treatment. .

Hypothesis #3: Subjects assigned to GIM sessions will experience an increase in immune function from the pretest to the posttest as demonstrated by an increase in salivary Immunoglobulin A levels as compared to those who do not receive GIM.

The level of change for experimental group did not achieve statistical significance, nor did the change for the control group. All of the subjects in the experimental group did demonstrate an increase in salivary IgA, while six of the subjects in the control demonstrated an increase and three demonstrated a decrease in salivary IgA. Although the overall change was not statistically significant and thus does not support hypothesis #3, the overall direction change does demonstrate a data trend.

It is expected that both groups would overall demonstrate a positive change in salivary IgA scores as both groups are in treatment and abstaining from drug and alcohol use. The research suggests that chronic alcohol use can the levels of antibodies and immunoglobulins that circulate in the body (Mendenhall, 1992; Lieber & Gordon, 1986; Maes, van West, Nuytn, Neels, De Vox, De Bruyne & Degroote, 2001). The period of time an individual is engaged in treatment and abstaining from drug or alcohol use would allow for the body to function without the substance in the system, allowing immune system function to return to a more normal state.

Findings Related to Guided Imagery and Music for Patients in Inpatient Chemical Dependency Treatment

The purpose of this study was to test the effectiveness of the Bonny Method of Guided Imagery and Music on Interpersonal Problems, Sense of Coherence and Salivary Immunoglobulin A on adults in chemical dependency treatment. The psychological and physiological findings will be discussed in relation to the proposed conceptual framework of the hypothetical responses of patients in chemical dependency treatment to guided imagery and music.

Psychological and Physiological Findings

The significant findings from this study support segments of the conceptual framework (Figure 1.0; Chapter 2) that was proposed to explain the hypothetical responses of patients in chemical dependency treatment to guided imagery and music (GIM) sessions. The GIM sessions were utilized in this study as a music psychotherapeutic intervention to confront interpersonal issues, release emotions that have been blocked, uncover latent emotional material and process trauma or abuse related issues. Interpersonal problems decreased significantly on three of the eight subscales for the experimental group. Subjects in the experimental group demonstrated a significant increase on Sense of Coherence on the comprehensibility and manageability subscales. These responses resulted as subjects were able to address interpersonal conflicts, release blocked emotions, uncover latent material that had not been address and process through trauma and abuse issues. In turn, these responses led to an improved ability to cope with the issues in their lives, an ability to better manage interpersonal relationships and decrease interpersonal struggles. As an individual is better able to manage and negotiate the challenges presented this decreases the stress response to these issues, which in turn decreases the level to which the immune system is suppressed and salivary IgA to increase. Even more importantly, this process allows the subject to practice a behavior change. Rather than turning to a substance as a method of coping with these

issues, the issues are faced head on in therapy. The issues are confronted, process and resolved. This process demonstrates to an individual they need not continue to avoid these issues and that they can find a resolution. This then, eliminates the need for substance use or abuse as a method of coping.

These findings are consistent with findings from various other research studies. Research supports that patients can benefit from adjunctive therapies when their problems are severe enough to warrant these services. This research also indicates that treating the substance use alone may not be sufficient enough to improve the individual's ability to function in other areas of their life (Ethridge, Craddock, Dunteman & Hubbard, 1995; Goubert, McKay, Burke & McLellan, 1998). The National Institute on Alcohol Abuse and Alcoholism (NIAAA) also reports that an absence of psychological problems promotes treatment retention (2000). Additionally, treatment retention is directly related to treatment compliance and positive treatment outcomes (O'Brien, 2003).

Study Limitations

There are several limitations associated with this study. No power analysis was utilized to determine a sample size for this study. Due to the lack of experimental research incorporating GIM in this population, no previous information was available. The sample size was decreased due to the restructuring of the Bridgeway program during the course of the research study. Recruitment and the study had to be terminated after a year as the program shifted from an inpatient treatment program to providing services on an outpatient basis. Due to these changes the investigator was unable to achieve the intended sample size for enrollment in this study.

The small sample size may have been a contributing factor to the baseline data not being distributed normally. This small sample size may have also contributed to the lack of significance on various subscales of the Inventory of Interpersonal Problems and the Sense of Coherence

Scale.

Given the small sample size, few minority subjects were recruited. Every effort was made to recruit minority subjects into the sample. Although, given the ethnic make up of the Twin Cities area, this finding is not surprising. However, due to the small number of minority subjects enrolled in the study, results are limited in their ability to generalize to more diverse populations and settings.

Another study limitation was the length of stay for the current treatment episode for subjects. Due to variance in insurance coverage, subjects were in treatment for varying lengths of time. In some cases, insurance reviews were conducted on a weekly basis to determine if the individual would remain in treatment another week. Therefore, at the onset of treatment for some individuals, their length treatment was unknown. For those court ordered to treatment their treatment stay was predetermined at a prior court hearing. It is unknown what possible effects knowing or not knowing one's length of stay in treatment may have had on subjects.

This variation in length of stay and unknown length of stay at times hindered the investigator's inability to incorporate a mid-point measure in treatment. Therefore, only pretest and posttest measures were utilized. This limited the amount of data to be collected on each subject. A measure was not implemented to account for any changes in health status or effects of medication during the course of treatment. Additionally, only one measure of immune function was utilized for this study and this was not a measure that is more widely used.

Another limitation included the variation in length of the GIM sessions for the experimental group. It is standard practice in utilizing GIM to select the music program based on the individual client. Therefore, this adds a variable that each session can vary in length depending on the program being implemented.

The Imagery Responsiveness Scale is a relatively new scale with limited prior use. It therefore lacks psychometric properties. Therefore the researcher was limited to relying on inter-rater reliability between two scorers.

An additional limitation included that the researcher also as facilitated the GIM sessions. Due to the fact that the researcher is the only individual trained in this method in the state, this limitation was unavoidable. It is not known what affect the client-therapist relationship may have had on the subjects and how this influenced their therapeutic process. Many studies indicate that effectiveness of therapy is related to the client – therapist relationship (Najavits & Weiss, 1994; Broome, Simpson & Joe, 1999; Fiorentine & Hillhouse, 1999).

Conclusions and Recommendations for Further Research

Conclusions

The profession of music therapy is invested in generating knowledge on the influence and impact of music on individual's and on the human body. This investigator selected this particular music therapy approach with measurable responses to explore the purposes of how it may positively influence the psychological and physiological well-being of chemically dependent individuals. Persons that are chemically dependent face numerous challenges and additionally must cope with the negative impact substance use takes on one's health.

Failure to address the psychological issues an individual may present in treatment leaves them ill equipped to manage and cope upon discharge from treatment. Findings from this study indicate that for this sample of chemically dependent individuals, a series of GIM sessions can decrease the level of interpersonal problems and increase Sense of Coherence or one's ability to cope. Additionally, in assisting an individual in confronting these issues and working them, they develop a sense of competence. This in turn demonstrated a positive change on salivary IgA.

The series of GIM sessions provided the opportunity for subjects to address issues of

unresolved grief and loss, confront traumatic war experiences, identify issues of loneliness and isolation, release repressed anger, confront issues of abuse and address issues of childhood abandonment. It is felt by this investigator that these issues addressed in the GIM process contributed to each individual's substance use. Furthermore, addressing these issues significantly impacts one's success for recovery.

Recommendations for Further Research

The results from this study indicate that a series of weekly GIM sessions can assist in decreasing interpersonal problems, increase Sense of Coherence and increase salivary IgA. It is not known at the onset of therapy how many sessions an individual may require to demonstrate improvement. The number of sessions needed before a change is evident in these measures would likely vary from one person to the next. Therefore, further research should incorporate more frequent measures, possibly pretest and posttest measures following each GIM session. This could allow for further examination into if a particular length of stay is more beneficial and has a greater impact on these measures. Additionally measures should account for overall health status changes during the course of treatment and incorporate multiple immune function measures, including salivary cortisol.

Since length of treatment stay is often no longer a predetermined issue it is unlikely to have a study in an inpatient setting where all the subjects are in treatment the same number of days. It may be more feasible to achieve this in another level of treatment, possibly a day treatment or outpatient program. Increasing the sample size could also help to manage this issue of variability in length of stay.

Research is also needed to explore the issue of treatment motivation. An individual's motivation for treatment can be influenced by whether they chose to enter treatment or whether they were court ordered to treatment. Level of motivation would be an important factor to assess

as it can influence the therapeutic process as well.

Due to the myriad of medical and health issues that can arise as a result of chronic alcohol or drug use, it would be beneficial in future research to conduct a more comprehensive medical history. Incorporating more physiological measures in a study may be helpful as well, to better account for all the complications that can result from chronic substance use.

This is the first research study incorporating GIM with individuals in chemical dependency treatment. To further validate the results from this study, it would be beneficial to have another investigator replicate these findings to ensure that GIM is an effective intervention for addressing interpersonal problems, Sense of Coherence and increasing salivary IgA for individuals in chemical dependency treatment.

Additionally, it would be valuable to explore the role the client – therapist relationship plays in the process of therapeutic change. Adding a measure to address this variable in a study would provide increased insight into the impact this relationship may have in the treatment process.

Implications for the Practice of Music Therapy

Based on the findings from this study, GIM sessions can be an effective intervention to address interpersonal problems, improve an individual's ability to cope and increase salivary IgA in patients in chemical dependency treatment. The investigator believes that the GIM sessions (facilitated by a trained GIM therapist) can be beneficial in promoting positive therapeutic outcomes for individuals in chemical dependency treatment.

Although not all the data demonstrated statistical significance, the experimental group demonstrated positive therapeutic changes on all the measures. This information warrants further investigation into this type of research with these measures. This is significant in the fact that the number of sessions for the experimental group ranged from 4 to 7 sessions. Given the brief

number of sessions, improvement on all measures was observed. This is also impacted by the fact that many of the subjects had been through treatment before on multiple occasions and had been addicted to the substance for many years. By all accounts, these were chronic patients. This rather brief period of GIM sessions/therapy provides a case for GIM to be a viable brief therapeutic approach.

What was impressive to this investigator from the clinical perspective is that frequently subjects in the experimental group were eagerly awaiting their therapy session. On many occasions the investigator was greeted at the elevator by the patient awaiting their session (it is important to note the investigator typically arrives early for therapy sessions). In total 58 GIM sessions were conducted and every session was conducted at its scheduled time. None of the subjects ever declined their GIM session. The staff on the unit frequently reported hearing positive comments about the GIM sessions and that the subjects would bring up images from their sessions in their group therapy sessions. Comments about the GIM sessions are included in Appendix I.

This investigator was moved by the profound affect the GIM sessions and the imagery had on the subjects. There was one gentleman in particular that was court ordered to treatment. He was very clear with the staff he did not want to be in treatment. He was very angry about the situation as a whole. However, despite his feelings he came to look forward to his GIM sessions.

In summary, an addiction to a substance can be a debilitating problem. It can emotionally cripple an individual that they cannot find a way out. They feel ill equipped to cope with their life so they turn to the substance. When this pattern continues for years on end it can feel as if there is no hope. Often when it has continued for years, the loved ones in their lives may also have lost hope or even given up and walked away. The GIM sessions provided an aspect to treatment they had not tried before, allowing them to gain a new perspective. GIM should be encouraged and

offered for individual's in chemical dependency treatment to promote improved coping, recovery and positive physical health outcomes.

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APPENDICES

Appendix A

The Bonny Method of Guided Imagery and Music

The Bonny Method of Guided Imagery and Music (GIM) was developed by Dr. Helen Bonny in the early 1970's. Dr. Bonny was hired as a music therapist at the Maryland Psychiatric Research Center, where a group of therapists were studying the effects of hallucinogenic drugs in the treat of their patients (Bonny, 1980). It was during this course of research that she observed that specifically chosen selections of classical music enhanced the LSD psychotherapy (Bonny & Pahnke, 1972). Bonny found that as patients listened to carefully selected programs of classical music in a relaxed state, powerful feelings and symbolic images were evoked, which lead to significant insights into therapeutic issues (Goldberg, 1995).

In time, the use of hallucinogenic drugs in therapy began to decline and Bonny began to experiment with music as the catalyst in psychotherapy (McKinney, 1994). Music has been used in the drug research to help the patient relinquish control and enter into an inner world experience, facilitate the release of intense emotions, contribute to a peak experience, provide continuity in an experience of timelessness, and structure the experience (Bonny, 1980). Bonny reasoned that if the research team was correct in their assumptions that music enhanced the sensory experience and facilitated the action of the drug that music alone may be just as effective (Bonny, 1980). She found that the subjects were able to experience these inner images and emotions of the unconscious with careful selection of classical music and without the drug.

Dr. Bonny developed and refined her method and in the process was influenced by the work of Freud, Jung, Maslow, and the imagery techniques of Assagioli. She was also influenced and encouraged by Carl Han Leuner, who developed the method called 'Guided Affective Imagery (Leuner, 1969). Bonny was particularly influenced by Leuner's ideas regarding imagery

in psychotherapy (Goldberg, 1995). Leuner's (1969) premise was that the images experienced during a session were that of a quasi reality, an experience that occurred in an altered state. The feelings and emotions the patient's experienced during this process were the essential component of the psychotherapeutic process.

The Bonny Method of Guided Imagery and Music is distinguished from other methods incorporating music and imagery, in that the music is used to evoke and direct the images, the therapist does not suggest the images. The uniqueness of the experience is that the music allows whatever is important to the imager to emerge during the session. "The multidimensional qualities of musical sound allow it to touch many levels of consciousness both simultaneously and/or in sequence... the movement of the music, the rise and fall of dynamics brings about a wide sweep of those levels or layers of consciousness' (Bonny, 1975, p. 130).

The Structure of a GIM session

GIM sessions are often facilitated in individual sessions. The sessions for this study were all individual sessions. An individual session typically lasts from one and a half hours to two hours in length. The sessions are divided into four parts: 1) the pre-session or preliminary conversation, 2) the induction (relaxation and focus), 3) the music listening phase or imagery phase, and 4) the post-session integration (Bonny, 1974a).

Pre-session

The pre-session is the preliminary time during the session in which the imager or traveler shares any relevant information with the guide. The information can include life events, feelings, personal history, or any other information or material the individual feels is significant. This is also a time in which the individual may share insights gained from a previous GIM session. During this time the guide is listening to what the traveler is sharing, and working to develop rapport with the traveler. The therapist/guide is not only listening to what the traveler is sharing,

but also observing nonverbal communication, assessing mood, and energy level. The therapist is drawing upon all of this information as it is key in the process of selecting the induction and the music for the session.

Induction

Following this period of sharing during the pre-session, the traveler reclines into a comfortable position, usually in a recliner, couch or on a mat. The guide then leads the traveler through a relaxation exercise to aid the traveler in moving from the conscious state to an altered state of consciousness. The induction helps to physically relax the traveler and focus the mind. The guide uses the information that the traveler shared during pre-session phase to formulate the induction.

The induction typically consists of three parts. The first part focuses on a physical relaxation, the second part focuses on engaging the imagination (focusing on an image, a scene or experience), and the third part is bridging the image to the music. The guide may bridge the image to the music by simply suggesting that the traveler ‘allow the music to be with you’ or ‘let the music take you wherever you need to go’. At this point, the music is initiated into the session and the traveler begins imaging to the music.

Music listening or imagery phase

The music for the session is selected by the therapist/guide. The choice of the music is based on the therapist’s assessment of the traveler’s therapeutic issues, current emotional state, energy level, and any other issues raised during the pre-session. The music programs are sequences of selected pieces of classical music. (See Appendix I for the specific selections included in each music program). The music programs have been developed by trained and experienced GIM therapists. These programs have also been tested for their ability to “elicit and support images and to meet a wide range of emotional states and energy levels of the traveler”

(McKinney, 1994, p. 262).

While the music is playing, the traveler shares and describes whatever he or she is experiencing. The images that are experienced are not only visual, they can include various sensory experiences such as sound, smells, movement (spinning, walking, floating, flying, sinking, as well as others), memories from the traveler's personal history, this may include unfinished business, body sensations (tingling, tightness, pain or physical discomfort), feelings, perceptions and emotions. While the traveler experiences the images, the guide listens and supports the experiences, and encourages the traveler to engage deeply in the experience. The guide is completely in tune to the traveler and the music. The guide is observing, listening and verbally reflecting during the imagery process (Goldberg, 1995).

During the imagery phase, the guide writes down the images and experiences that the traveler describes. The information that the guide writes down is referred to as a transcript. The transcript is a way to not only record what the traveler describes, but also a means of recording any non-verbal reactions, such as physical tension, facial expression and or movement. The transcript provides the guide and traveler with the means to review images, experiences, and recurring images or themes that may occur from session to session.

Post-session

Following the music listening and imagery phase, the therapist/guide works with the traveler to integrate the experience. When the music stops, the therapist guides and assists the traveler in bringing the imagery to a close and returning to a waking, conscious state. During this integration phase, the therapist is following the lead of the traveler. The therapist encourages the traveler to acknowledge and address any images or experiences they feel are significant or stand out. The role of the therapist is not to interpret the images, but assist the traveler in the integration of these images. This integration can take place through verbal discussion, but it can also

happened through non-verbal expression. Some therapists utilize mandala drawing, sculpturing clay or other mediums the traveler may be familiar with and find beneficial. The traveler may also wish to journal, sketch images or use any combination of these methods. Most travelers have a need or desire to discuss their GIM experience and, “although there is some clinical evidence of behavioral change without verbal processing of the images, cognitive understanding usually plays an important role in the therapeutic process” (Goldberg, 1995, p. 115).

APPENDIX B

Overview of the Immune System

The immune system is a network of cells and organs that work in synchrony to defend the body against invaders. These invaders are primarily germs, bacteria, viruses, parasites and fungi. It is the role of the immune system to not only keep these invaders out, but if they do enter the body, to seek out and destroy them. The key element to the success of the immune system is its elaborate communication system (NIH, 2005).

The organs of the immune system are located throughout the body. They are called lymphoid organs because they serve as the home to lymphocytes (small white blood cells). These organs include the tonsils, adenoids, lymph nodes, lymphatic vessels, thymus, spleen, appendix and bone marrow. All immune cells begin life in the bone marrow. They respond to signals (cytokines), which direct them to grow into specific immune cells. These some of these immune cells include T-lymphocytes (also known as T-cells), B-Lymphocytes (B-cells) and phagocytes. Lymphocytes (B-cells and T-cells are the main type of lymphocytes) travel through the blood and lymphatic vessels, thus allowing them to monitor the body for invading organisms (NIH, 2005)

B-cells release substances called antibodies. These antibodies attack the invaders (antigens) that are circulating in the bloodstream. These antibodies belong to a network of molecules known as immunoglobulins. The different molecules (immunoglobulins) each play a different role in the immune system defense (Jenkins, 2004)

T-cells vary from B-cells in that “they do not recognize free floating antigens” (NIH, 2003, p. 11). They recognize fragments of the antigen on infected cells. The Helper T-cells direct Killer T-cells to attack the antigen. Natural Killer (NK) cells are another type of lymphocyte that possesses the potential to attack foreign cells.

The immune system maintains a large arsenal of cells. The system stores only a few of each kind of cell that is needed to recognize the millions of potential invading enemies. When an enemy (antigen) is detected, those cells needed for the task multiply into an army of cells. After they have destroyed the invader, they fade away leaving the original few to monitor for future attacks (NIH, 2005).

APPENDIX C

Participation Information Form

1. Subject Identifier: _____
2. Age: _____
3. Do you currently have any medical or physical health concerns? _____
 If so, what was the diagnosis? _____

4. Have you ever been diagnosed with a mental illness? _____
 If so, what was the diagnosis? _____

 When was the diagnosis given? _____
 Did you receive treatment for this diagnosis and if so what was the method
 of treatment? _____

5. What is your drug of choice? _____
6. How long have you been addicted to this drug? _____
7. Have you been through chemical dependency treatment before? _____
8. What prompted you to enter treatment now? _____

9. Please indicate the highest level of education you attained:

_____ Some high school	_____ Bachelor's degree
_____ GED	_____ Some graduate work
_____ High school graduate	_____ Master's degree
_____ Some college	_____ Doctoral degree
_____ Associate degree	

APPENDIX D

Guided Imagery and Music Project

The Guided Imagery and Music (GIM) project is a treatment option provided for individuals currently seeking treatment through Bridgeway at the University Good Samaritan Center. This treatment option is being studied to see its effectiveness for individuals seeking chemical dependency treatment. Participation in this treatment is optional. You are welcome to participate but you are not obligated in any way.

The project consists of seven individual Guided Imagery and Music sessions that will be facilitated by Annie Heiderscheit, MS, MT-BC, FAMI, who is in charge of this project. There are two short questionnaires (which take about 10 minutes each) to complete and a small sample of saliva (about ½ of a teaspoon) to be provided. The saliva sample will be used to see how much of an enzyme called Immunoglobulin A (IgA) is in your saliva. This enzyme helps to tell how your body is responding to stress. The saliva will only be analyzed for that enzyme and the results of the saliva test will only be viewed by Annie Heiderscheit. The questionnaires and saliva samples will be collected just before you begin the individual sessions and immediately after you complete the final session. The individual sessions usually range between 50-90 minutes in length.

Participation in this project will not interfere with your treatment at Bridgeway. The sessions for this project will be scheduled during times when scheduled programming is not in place. You may find as a part of these sessions that you are able to discover a deeper self understanding.

If you would like more information on this project or would like to participate, please speak to Annie Heiderscheit. Again, your participation in this treatment option is not mandatory. If you choose not to participate it will in not way effect your treatment at Bridgeway or your relationship to the University Good Samaritan Center.

APPENDIX E

Effects of Guided Imagery and Music (GIM) Therapy on Interpersonal Problems, Ability to Cope and Immunoglobulin A in Adults in Chemical Dependency Treatment**Consent Form**

You are invited to be in a research study that will explore the use of guided imagery and music and imaging ability on immune function. You were selected as a possible participant because you are currently receiving chemical dependency treatment from the Bridgeway program at the University Good Samaritan Center. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Annie Heiderscheid, MS, MT-BC, FAMI, who is a doctoral candidate at the University of Minnesota.

Background Information:

Immunoglobulin A (IgA) is an indicator of mood and reflects some aspects of the immune system. IgA helps to protect the body, to keep us healthy. It protects our mucosal membranes from invading organisms and plays an important role in mucosal defense against upper respiratory tract infections. When our immune system is not working at its full potential, it means our body is more vulnerable to illness and infection. Research suggests that IgA levels decrease significantly when we are experiencing stress and life changes. Researchers have also found that IgA levels decrease when we feel we have little control in our lives.

Entering chemical dependency treatment presents a great many changes in one's life. The purpose of this study is to explore the effect of weekly guided imagery and music sessions on your ability to cope, the level of interpersonal problems and on your IgA levels. IgA can be measured through a small sample of saliva. This saliva sample can then be tested to check the level of IgA. This simple test will show how much IgA is present in the saliva.

Guided Imagery and Music (GIM) is a therapeutic method that uses programmed classical music to support your internal processes (such as: understanding yourself and your relationships, self-esteem, and your perception of your life). The guide will take time to ask you and discuss with you how you are feeling, what you are experiencing in your life and what your needs are. This will be about 20-30 minutes. The next step is a brief guided relaxation exercise, about 5-10 minutes in length. The guide will then select the music that will best meet your needs. When the music begins, images will start to emerge. Images come in a variety of forms: memories, feelings, sensing, intuitive thoughts or ideas, and spiritual awakenings. The images that you experience during this process are unique to you. The meaning of the images is achieved by simply experiencing the image and discussing it.

The guide will dialogue with you as you are imaging. The imaging experience will be 30-50 minutes in length. She will ask you questions about your images, to further describe the images and the experience. The guide will keep a transcript of the images that you describe and you will be given a copy of this record following each imagery session. When the imaging portion of the session is complete, there will be a short period (20-30 minutes) to discuss the imagery experience.

The Sense of Coherence Scale and the Short Form of the Inventory of Interpersonal Problems Circumplex Scales are short evaluation tools to help the researcher understand how you are coping in life and how you deal with your interpersonal problems.

Procedures:

1. To complete weekly guided imagery and music sessions, that range in 1 ½ to 2 hours in length each.
2. To complete a Sense of Coherence Scale (29 items) and the Short Form of the Inventory of Interpersonal Problems Circumplex Scales (32 items) prior to the start of the sessions and again after the final session.
3. To provide two saliva samples, one before the first session and one after the final session. The sample is collected by having you spit a teaspoon of saliva in a plastic vial.

Risks and Benefits of Being in the Study:

The risk as a participant in this study is that during the imagery portion of the sessions, you may experience feelings and emotions that have been repressed or that you have refrained from expressing, both pleasant and unpleasant.

The benefits of participating in this study including: gaining a better self-understanding that facilitates personal growth and encourages making changes in one's life.

Confidentiality:

The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify the subject. Research records will be kept in a locked file; only my advisor and I will have access to the records.

Voluntary Nature of the Study:

Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota or the University Good Samaritan Center. If you decide to participate, you are free to withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Annie Heiderscheid. You may ask any questions you have now. If you have questions later, you may contact her at (612) 625-2398 or her advisor, Dr. Charles Furman at (612) 624-7512.

You will be given a copy of this form to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature _____ Date _____

Signature of Investigator _____ Date _____

APPENDIX F

Experimental Subject Profiles

(The names of the subjects have been changed to protect their identity)

Roger is a 47 year old single, white male, the youngest of two children. He explained that his childhood was quite normal. He obtained his high school education and was looking forward to building a life with his high school sweetheart. Shortly after graduation, he discovered his girlfriend with another man. He was so distraught that he enlisted in the military the next day. He was soon shipped off to Vietnam and never spoke to his girlfriend again. Shortly after arriving in Vietnam, he was involved in a motor vehicle accident and suffered a brain stem contusion. This resulted in some short term memory loss and difficulties with balance. Following this accident, Roger was in physical rehabilitation for 13 months. During this time he became depressed and then continued to experience bouts of depression in the years to follow. He has been unable to maintain any steady employment, develop social or relationships and is full of regret.

Roger identified that he has been drinking alcohol since high school and that he has been addicted for about 20 years. He sought treatment when a bleeding ulcer developed and he began vomiting blood. This is Roger's sixth time in treatment for his addiction. He reported not wanting to return to drinking as he knows that his health will only continue to decline. Roger was not sure what issues he wanted to address through the GIM sessions, but he knew he was not happy and wanted to change that.

Gus is a 51 year old white male, the oldest of four children. Gus' father abandoned the family when he was 7 years old. Gus was often responsible for the care of his siblings, as his mother was emotionally unavailable to manage the household and raise the children. Gus also identified that his mother drank heavily all throughout his childhood. He remembers using drugs for the first time at age 9. He did not complete high school, as he was often in trouble with the

law. He began selling drugs and continued to do so up until he was drafted and sent to Vietnam. Following his return from Vietnam he was diagnosed with post-traumatic stress disorder (PTSD). He has been married twice and has 10 children with his second wife.

Gus identified that he has used “anything and everything”, from marijuana to cocaine to alcohol. He reported, “I have been able to kick everything but alcohol”. He identifies that he has been addicted to alcohol and/or drugs for over twenty years. Despite the many years of use, this is only his second time through treatment.

Gus did not identify any specific issues he wanted to address during the GIM sessions, but he was quite interested in the process and was often fascinated with his dreams.

Joe is a 49 year old white, divorced male. He completed high school and shortly after graduation he was arrested for breaking and entering. In order to avoid a one year sentence in a work house, he opted to enlist and go to Vietnam. Joe worked in intelligence in Vietnam, often conducting dangerous missions. Upon his return from Vietnam he was diagnosed with PTSD, but received no treatment for it.

Joe is the father of three children, although one of his sons he has never met and his only daughter was struck by a car when she was five years old and died instantly. Shortly following her death, Joe and his wife divorced. In the past few years, Joe has suffered from two back injuries, the first in 1996 (he fell off a roof) and the second in 1999 (motor vehicle accident). The second back injury prompted this treatment episode. His physician strongly encouraged him to enter treatment.

Joe identified that he has been addicted to alcohol for 20 years. This is third treatment attempt. He was not in favor of treatment at this time, but felt his doctor gave him no choice. He stated emphatically that he has not intention of giving up alcohol. Despite his resistance in many of the other groups in treatment, he was compliant during the GIM sessions. Joe identified he had

problems with anger and often became easily frustrated with others.

David is a 64 year old, widowed, white male. He lost his wife only 6 months prior to entering treatment. During that same month, he suffered the loss of two other extended family members. David is the third of three children. His siblings are much older than he is. His mother was quite ill during his childhood. Following his graduation from high school, he enlisted in the Navy to get assistance with college expenses. David went on to become a pharmacist.

David married late in life and he and his wife did not have children. He was diagnosed with late onset diabetes and he manages this with insulin shots. He identifies that he has been addicted to alcohol for at least 20 years and has been through treatment 10 times. This treatment episode was precipitated by health concerns. David's drinking has left him unable to manage his diabetes and his health has been declining rapidly. Just prior to entering treatment, David had been hospitalized because he passed out due to extremely high blood sugar levels. His balance is also unstable due to his weakened state.

David identified his primary therapeutic issue as grief. He is still processing the loss of his wife and grieving the loss of his independence. He felt these were the issues he wanted to address during the GIM sessions.

Gary is a 52 year old divorced, white male. He is the second of three siblings. He and his older brother are currently living with their mother. His father passed about nine years ago. Gary spoke little of his family and asked that the therapist not ask questions about his family. Through the course of the sessions, he did share that his mother is controlling and that his father held very strong beliefs. Gary graduated from high school and shortly thereafter was drafted and deployed to Vietnam. Following his return he was diagnosed with PTSD. He received no treatment. He identifies that his is when his drinking became problematic. He explained in one session that

during his time in Vietnam, alcohol was cheaper to purchase than soft drinks.

While in Vietnam, Gary suffered a shoulder injury and hearing loss in his left ear. Both injuries were the result of an explosion. To date he has undergone five surgeries on his shoulder and continues to experience pain and physical discomfort. Gary's entrance into treatment was a condition he needed to meet before he could be admitted to a facility to receive physical rehabilitation for his shoulder. This was Gary's seventh time in treatment. He identified that he had been addicted to alcohol for thirty years. Gary served an eight month prison sentence; he was unwilling to reveal the reason for his incarceration.

Gary was unsure what he wanted to address during the course of the GIM sessions, he did talk about he felt like he, "continues to screw up his life". He identified that he struggled with failure and his fear of failure often kept him paralyzed.

Susan is a 41 year old, single white female. She is the youngest of three children. She identified a long history of alcoholism in her family; her father, sister, brother and an uncle. Susan's older sister died several years ago as a result of alcoholism. Susan was the one who found her sister unconscious in her apartment. Susan described her childhood as uneventful. Her father achieved sobriety before the children were born. She identified that she has been addicted to alcohol for 15 years. She believes her drinking stems from a desire to mask feelings of depression.

This is Susan's fifth treatment episode. Just prior to coming to treatment, Susan had been drinking heavily and fell down a flight of stairs. She lay there for several hours until she was discovered by a neighbor. She was hospitalized for several weeks following this incident and was unconscious for about a week. As a result of the fall, Susan experienced some short-term memory loss, problems with her vision and currently has motor coordination difficulties with her right leg. She required the use of walker and later progressed to a cane. Susan had little memory of the

incident as well as the weeks she was hospitalized. Additionally, she has no memory of the entire year leading up to the incident. From what her roommate could tell her, she was drinking quite heavily during much of this time. Susan expressed concerns about her physical health and her memory loss. She felt that it might be helpful to explore the feelings that she was trying to drown with the alcohol. She was not sure what she was running from.

Alice is a 63 year old white female. She is the second of five children. She described her mother as controlling and her father as the strong silent type. Her older sister died during childhood, her youngest brother died three years ago, her father died a year ago and her second to youngest brother died just seven months prior to her entering treatment. Alice is married and was a stay at home mother to her three children for many years. She describes her husband as, “an abusive alcoholic”. She reported he never physically harmed the children but he, “only took it out on me”. She finally realized the marriage was having a negative effect on their children. Just prior to her divorce, she completed her nurses training.

Alice has been hospitalized for psychiatric treatment on two occasions. The first occurred during her marriage and the second just prior to this treatment episode. She reports these treatments were due to “nervous breakdowns”. She has been diagnosed with clinical depression and does take an anti-depressant. She identifies that she has been abusing alcohol for twenty years, although this is only her second time in treatment. She is a heavy smoker and has been diagnosed with a lung condition, chronic obstructive pulmonary disease (COPD: a chronic obstruction of the airways caused by emphysema or chronic bronchitis).

Don is a 58 year old divorced, white male. He is the youngest of four children; there is a twelve year gap between him and his next sibling. His father died in an accident at work when Don was eleven years old. Both of his siblings died in 1989 and their deaths were both alcohol related. Don reported that other than his two siblings there was no other known history of

alcoholism in his family.

Don was a clerk in the army during Vietnam. He was stationed in Europe during his entire length of service. Don is the father of two grown children. His children moved away when he and his wife divorced. Don identifies that that he has moved around much of his life, never staying in one place for very long. He reports he frequently became bored with work and would change jobs. He identifies the best time of his life was when he was “tramping” (going from place to place with only what he could carry on his back, sleeping under the stars) around the country.

Don was hospitalized once for psychiatric treatment. He was diagnosed with clinical depression. He continues to take an anti-depressant to manage his depression. Don has a history of heart problems. Seven years ago he underwent bypass surgery and just prior to treatment he suffered a minor heart attack. His physician recommended he go through treatment, as it is crucial to his health. Don identifies that he has been addicted to alcohol for 35 years. This is his thirteenth time in treatment. He feels he often drinks out of boredom and loneliness.

Doug is a 60 year old white male. He began using alcohol to manage the pain he was experiencing from chronic arthritis. He reports he was only using alcohol to self-medicate for about a year. Doug continues to live in the town where he grew up. He worked with his brother for a number of years in a business they owned. He was married to his first wife for fifteen years. This union produced three children, all of whom are adults now. Doug seemed to have little insight into why his marriage dissolved. , but did report that his wife felt she wanted different things in life. He remarried and this marriage last five years. He felt this marriage dissolved due to conflict around the step children.

Doug is a soft spoken individual who tends to withhold his emotions. He identifies that he does little socially and has few friends. He reports he often sits at home alone. He shared little about his childhood, only describing it as normal. This was Doug’s second time in treatment. His

previous treatment was only six months prior. He reports he began drinking again shortly after leaving treatment and was reported to the authorities. This report resulted in a court appearance and he was then court ordered to treatment. The court had also decided that following treatment he would go to a halfway house in his hometown. Doug was quite concerned about what others in town would think and how they would treat him when he returned. He was quite anxious about his ability to stay sober and had fears of relapsing. He identifies he is looking for some direction in his life, wanting to find meaning and purpose in his life.

Marvin is a 60 year old black, divorced male. He is the oldest of three children; his siblings are both half siblings. His mother and biological father never married, nor did his mother marry the father of his half siblings. Marvin lived with his mother, two aunts and all of their children. He described his childhood living environment as “a brothel” and that he grew up with pimps and prostitutes all his life. His mother was the sole supporter of he and his siblings. He reports his marriage dissolved as a result of his cocaine use. He feels it was more than his wife could take. Marvin has one son, whom he describes as quite successful and who is also supportive of his recovery. Marvin identifies that he has utilized alcohol and variety of other drugs, but his drug of choice is cocaine. He reports he has been addicted to cocaine for 30 years. He feels drugs and alcohol were always a part of his life. He even engaged in selling and dealing drugs for a period of time.

Marvin currently suffers from neuropathy as a result of his cocaine use. While in treatment, he is also engaged in physical rehabilitation to regain his motor coordination (his hands, feet and legs have been most affected by the neuropathy).

APPENDIX G

Control Subject Profiles

(The names of the subjects have been changed to protect their identity)

Dick is a 59 year old divorced, white male. He is a lawyer and continues to practice law, despite the fact that he recently suffered a minor stroke. He has two grown children that have provided him assistance since his stroke and admission to treatment. He is experiencing some weakness on his right side due to the stroke and is utilizing a cane to aid in physical mobility. Dick identifies that he has been addicted to alcohol for ten years. He has been through treatment on two other occasions. This treatment was prompted by problems he was encountering with his physical health.

Nancy is a 60 year old widowed white female. Nancy completed high school and married shortly thereafter. She remained at home and raised her three children. She identifies that she has been addicted to alcohol for 14 years. She has been through treatment on two other occasions. Nancy does have some liver damage due to the years of alcohol use. This treatment episode was prompted by her own health concerns and the concerns of her family.

Edward is a 63 year old married, white male. After graduating from high school, he began farming. He has retired in recent years and now struggles to occupy his time. Edward identifies that he has been addicted to alcohol for over thirty years. Despite his long addiction he has only been through treatment on one other occasion. This treatment episode was prompted by the concerns of his family. He has been told that as a result of the years of alcohol use his liver is damaged, although Edward is unsure of the severity of the damage.

Julie is a 63 year old married, white female. She is the mother of nine children. She stayed home to raise her children and began working after the last child left home. She worked as a nursing assistance in some area long-term care facilities. Julie identifies that she has been addicted to alcohol for 20 years. Despite her long addiction, she has been through treatment only

one other time. She acknowledges that this treatment episode was prompted by concerns from her family regarding her physical health. She reports that she has sustained liver damage due to the many years of alcohol use.

Albert is a 44 year old single, Hispanic male. Albert was diagnosed with cerebral palsy very early in his childhood. He obtained a bachelor's degree and worked for several years as a disc jockey at various radio stations. Albert's physical condition recently declined due to a fall. He identifies that since the fall he has continually experienced increase weakness and pain in his arms and legs. Despite efforts in working with a physician, they have been unable to find the source of the weakness and pain. Albert began using alcohol to self-medicate. He acknowledges that he has used alcohol for many years, but does not feel he began abusing it until this recent fall, roughly three months earlier. Subsequently, this was Albert's first time in treatment.

Roger is a 49 year old divorced, white male. Upon his graduation from high school, he began working construction. He identifies that he began using drugs early and reports that he has "used any and every drug". He has undergone treatment for addictions to marijuana and cocaine. In recent years, Roger has suffered two head injuries. The last injury prompted his entering treatment. Roger has also been diagnosed with Hepatitis C. He identifies that he has been addicted to alcohol for 15 years. He has been through treatment a total of ten times.

Colin is a 63 year old, widowed, Native American male. He is a veteran of the Korean War. He suffers from significant visual impairment that was a direct result of his addiction. The significant loss of eye sight resulted when he drank menthol alcohol (gasoline). Colin identifies that he has been addicted to alcohol for over 40 years. This treatment episode was prompted by mounting health concerns, high blood pressure and a recent minor stroke. He reports that he has been through treatment on six other occasions.

Kate is a 58 year old married, white female. Shortly after graduating from high school she married and remained at home to raise her four children. She identifies that she has been addicted to alcohol for eight years and that this is her third time through treatment. Kate reports that this treatment episode was prompted by concerns regarding her health. In the last couple of years, she reports noticing an increase in physical and mental health related problems.

Ron is a 55 year old divorced, black male. He obtained a bachelor's degree in business and reports moderate success following college. He identifies that he has been addicted to cocaine for 20 years. He acknowledges having been through treatment on five other occasions. Ron has experienced serious health related problems within the past year, and identifies this as the factor that prompted this treatment episode. He has been diagnosed with Hepatitis C and suffers from severe liver damage.

APPENDIX H

Imagery Examples

The imagery examples that follow are not full transcripts from the sessions or sessions in their entirety, but only portions of the sessions. The words in parenthesis are the comments/remarks of the guide, all everything outside parenthesis are descriptions given by the subject. The postlude is the time following the session when the subject and guide discuss and process the images and imagery experience.

Roger

Session #3:

Program: Relationships

Induction: Incorporated the image of a tree

Segments of imagery transcript:

(What are you experiencing?) a tree in my father's backyard, he planted the tree 35 years ago, it's a big tree (What do you notice?) it was struck by lightning, it is scarred, but it kept growing (Scarred?) He put paint on it to cover it. (How does it feel to see that?) Feel a sense of belonging. I've watched it for so long. I see what I helped my dad build. (What do you notice about yourself?) Feel at peace with myself. (Where do you feel that peace?) In my legs.

Postlude: Roger recognized the metaphor of the tree. How the tree and been struck and scarred and how he could see himself as the tree, injured and wounded. He was able to see that the tree continued to grow despite the damage. Where as, following his accident he struggled and often shut people out and closed himself off others.

Session #6

Program: Pastorate

Induction: Road or path

Segments of imagery transcript:

(What are you experiencing?) I am walking down a road toward the lake. (What do you see?) The trees, the river winds back and forth. I am going down to the lake. (What do you notice?) There is a swing by the lake, a homemade swing. (What do you notice about the swing?) There is a girl on it. She has long brown hair. I am pushing her on the swing. (Pushing her) Now she is slowing down to stop. (Is this familiar?) I tell her I am sorry. (Who is the girl?) It is Debbie. (Is there anything else you want to tell her?) Maybe, it too hard. (Let yourself be there). Her face is fading. (How do you feel?) There are no words to describe it. (What is happening now?) She is gone.

Postlude: Debbie was Roger's first love. He abruptly joined the military when he saw her with another guy shortly after graduating from high school. Roger recognized that these feelings of regret and leaving this issue unresolved were contributing factors in his addiction. And that expressing these emotions was extremely difficult for him.

Gus

Session # 4

Program: Pastorate

Induction: Ball of light

Segments of imagery transcript:

There is a wall on the side, it is about 100 feet high, I'm looking at the rocks. (What do you

notice?) I see a caves. There are small ones and a large, dark one. I want to go in. It is hard to decide. (Hard to decide?) I am going down into the cave. The light is in front of me and behind me. As long as the lights are on everything will be fine. I am on the edge of something. The light is blue and yellow. The hole keeps going. There are stairs on the side, they are very narrow. I want to go back to the ocean, but I won't. Danger is up the stairs. The wall is coming down and getting smaller. I keep walking and now I see grass and flowers. I hear the birds and other animals. (How does it feel?) It feels peaceful here. I can see the ocean and the red rock. I walk to the water and see minnows swimming at my feet. I hear someone calling me. (What do you hear?) She is calling me to leave. I don't want to leave. She says, "You know when your time is up, you have to go back". Now I feel someone walking with me. I see myself walking. I am about 15 or 16 years old.

Postlude: Gus recognized this woman that spoke to him was a caring presence. He felt in the imagery that she was sent to bring him back, but it not know where he was to return. He recalled often feeling like a little lost boy during childhood. His father abandoned the family when Gus was young and he began drinking alcohol at age 9.

Session #5

Program: Caring

Induction: Stairs

Segments of imagery transcript:

(What are you experiencing?) Moving down the staircase, it's a spiral banister. I see a big fireplace, bookshelves, large doors. A very pleasant place, well cared for. There are many rooms, the doors are all open and the light is coming in. Going up the stairs. (What do you see?) I see a portrait of a beautiful lady. She is wearing a dark hat, dress is velvet brown with white silk around her neck. She is not smiling, has an intriguing look. And red lips. Portrait of a man in a dark coat with a blue suit, dark red tie and not had.

(Where are you now?) I am in a child's room. There is a child's rocker. The room is blue, it's a boy's room. Things are on the shelves, they are unused. No pictures around. Everything feels gray. This room is not comfortable. (What else do you notice?) I see myself in the mirror, my face, my hair. I am about 14 or 15 years old.

Postlude: Gus remarked following the session that the child's room was missing the boy. He felt the toys and belongings in the room were almost crying, they were lost and forsaken. He felt there was grieving to be done here.

Session #6

Program: Solace

Induction: Box

Segments of imagery transcript

(What are you experiencing?) I see a table with a box on in. (Can you touch it?) Yes, but I don't want to open it. This house has been deserted. (Where are you?) Near the basement entrance, it is boarded and closed. This is a dead end place. The box on the table has the things that were left behind. No one wants to be here. Why should I? The porch is warped, the entrance is boarded. The house is gray. I see a rope that was for a child's swing. It is a large house. A picture of a mother and father with children. (What do you notice?) Now there is nothing left. Barely a feeling left. Just nothing. (How does it feel?) It's like the house is not doing its job. There is no use for it. The house doesn't know why the people left. It is like it is just waiting to fall down and die. (Die?) No spirit here, it is hollow. No one cares. Everything is hollow. Just say to hell with it.

Postlude: Gus is just beginning to explore his feelings of grief and abandonment. He feels quite uneasy about tapping into these feelings, yet he is always eager for the imagery sessions.

Gary

Session #2

Program: Relationships

Induction: Stream

Segments of imagery transcript:

(What are you experiencing?) It is a hot day. I am in the ravine, sitting on the shore. The trees here are huge. (What do you notice?) There is nothing else around here. It is almost dark, the trees block out all the light. The ground is wet, the tree roots are sticking out the side of the creek. The ground has little vegetation. The sun can't get through. I could get lost here.

Everything is the same here. I could get lost. (What are you feeling?) I want to get out of here. I have to get out of here.

Postlude: Gary felt the parallels between his imagery and his addiction. He experienced how the trees block out the light of the sun, much the way his addiction keeps others from being a part of or entering into his life. It is his way of keeping others out.

Session #3

Program: Caring

Induction: Staircase

Segments of imagery transcript:

(What is happening now?) I am in absolute darkness. There is something coming into view. It's a bulldozer. I see the radiator and the stacks. (What do you notice?) See the big blade, the cab, the black smoke. Someone is there, I only see half of the hard hat. They are wearing sunglasses. Why are they there? They are leaving now. There is no construction here. The person never waved. The person looked small like a child. Why was this big bulldozer here?

Postlude: Gary reported the bulldozer was larger than a real life bulldozer. He felt very confused and frustrated by this image.

Session #4

Program: Imagery

Induction: Ball of light

Segments of imagery transcript"

(What are you experiencing?) I am on a boat, standing about mid ship. The bow is going up and down. I can see out of my right eye, but I only see the left side of the boat. The waters are rough and I see a dark rock wall. The boat is not getting anywhere. (What are you feeling?) Things are fuzzy and unclear. I can still only see out of my right eye. (What else do you notice?) The boat is sinking. I am holding onto the railing and I see the rock wall. It is going down fast. My legs are wet. The boat is gone. (Where are you?) I am on the rock wall. Everything is hazy. I think I see an island in the distance.

Postlude: Gary felt the sinking ship in this life was representative of his family. He feels if he continues running back to his family that he is hanging onto the sinking ship.

Session #7

Prelude: Gary reported feeling good, that he has gained a better sense of what he needs (sober friends, a support system)

Program: Positive Affect

Induction: Road

Segments of imagery transcript:

(What are you experiencing?) I am at a campsite. It's fall, I see all the colors on the leaves. Sitting at a picnic table. See a big log on at the campfire. I should cut it up so I can burn it. I don't own this place anymore, I should not be here. (What is happening now?) I am driving in a car. (Are you alone?) Yes. It takes forever to turn right. I see shrubs and mailboxes, desolate fields. I am looking for something. I don't know what.

Postlude: Gary feels as he has been searching for happiness, but is often held back by his fears, especially his fear of failure. He has a desire to fulfill his dreams, even though he feels he holds himself back at times. Following this imagery session, Gary revealed that he had served 8 months in prison.

Sue

Session #2

Program: Relationships

Induction: Path

Segments of imagery transcript:

(What are you experiencing?) I am walking on stones. They are so little they don't hurt. (What do you notice about them?) They are pretty. Many different shapes. (Can you touch them?) Yes (How do they feel?) Smooth. They look like expensive stones. There are little lines that go all the way around them. When I toss them in the air they float back down and fall like they are settling on a cushion. I am going to keep one. (Have one?) Yes, it is clear. There are emotions on the inside. The emotions are not moving. They are all tied up in strings. They are covered up and hidden.

Session #4

Program: Solace

Induction: Tree

Segments of imagery transcript:

(What are you experiencing?) I am sitting in the tree. The tree is split into three parts. I am sitting in the middle and my feet are up on another branch. I am looking up at the sky. (How do you feel?) Peaceful. The breeze makes the leaves dance. The wind is like the puppet master of the leaves. What would it be like to build a house in a tree? I could lay here for hours. (What do you notice?) There are doves flying by. They can move whatever way they want. I feel myself floating in the wind. (What do you notice about yourself?) I am pretty here. I can't see my face, but I have a graceful form.

Postlude: Sue had been experiencing pain as a result of a fall just prior to her admission. Following this session, she commented, "my body is relieved of physical discomfort after each session".

Session #6

Program: Nurturing

Induction: Ball of energy

Segments of imagery transcript:

(What are you experiencing?) A nice, quiet place. I feel the warmth of the sun. I just want to lay here. The clouds in the sky are moving. (Where are you?) I am laying under a big oak tree. I feel the grass underneath me. (What do you notice?) I feel the strength of the tree. I feel the strength inside me, right up my backbone. (Do you notice anything else about your body?) It

doesn't hurt anymore. I feel rested. It feels good to rest here.

Alice

Session#3

Program: Relationships

Induction: Stream

Segments of imagery transcript:

(What are you experiencing?) I see a baby floating in the stream (A baby?). Its Moses, wrapped in white. I know what he will become, it is wonderful. The ladies are coming to take him.

(What are you doing?) I am searching for something. I don't know what I am looking for. I wonder what I am supposed to find. I am walking through fog, a void. It turns into a beautiful place. (What do you notice?) A stream. Oh, I hear a waterfall. Its gone now. I wonder where the waterfall went. It is peaceful here now.

Postlude: Alice commented following the session that she was afraid of being overpowered by the waterfall in the image. She felt this was reminiscent of how her ex-husband controlled her through his abuse and how she has allowed alcohol to control her.

Session #5

Program: Nurturing

Induction: Blanket

Segments of imagery transcript:

(What are you experiencing?) I see a man with white hair and a cane. He is wearing a white robe. He is a shepherd. His sheep are there. One of the sheep is wearing a bell. The little lambs are jumping around. He does not speak to me, but I know what he is thinking. He has all these lambs to watch and he fears they may be danger, wolves or bears. He is playing the flute for them. They like to listen to it. (Where are you?) I am walking through the flock. They don't mind. (How do you feel?) Serene. The shepherd is watching me, he doesn't want them to get hurt, he protects them.

Postlude: Alice identified that she is feeling vulnerable and not sure if she can trust herself to maintain her sobriety.

APPENDIX I

Subject Comments

The following are comments made by the subjects involved in the experimental group and receiving the Guided Imagery and Music sessions. The final comment in this section is from a subject in the control group.

Roger

“I have been thinking about the image of the tree a lot lately, I have also been talking with others about the image. This image has become important to me. I see myself in it more and more”. (The tree image is from Roger’s third session).

“I didn’t realize that the loss of this relationship was still a problem for me, until I encountered her in the imagery”.

“I so wish that I could continue with the sessions, they have been very helpful to me”.

Gus

“I don’t always have a clear understanding of the images, but I do feel that the sessions allow me to better understand myself”.

Joe

“I didn’t want to come to treatment, I felt railroaded into coming. Despite my not wanting to stay, I find myself looking forward to the imagery sessions”.

David

“I wasn’t sure what images would surface when the sessions began. I wanted to process through the grief that I was experiencing. In the images, I found such peace and comfort that helped me to further deal with the loss of my wife”.

Gary

“I don’t usually share much about myself with other people. I found through the sessions that I could share a little more about myself”.

Susan

“I found that after each session my body is relieved of the physical pain”.

“My body was so damaged by the alcohol and the fall I took, I was really in bad shape. My balance was bad, my vision was screwed up and my short term memory was a mess. The images brought healing to me. I experienced such peace and harmony in the images that I felt my body healing in each session”.

Alice

“It was through the imagery that I began to understand the power that alcohol had over me. In the images I experienced the fear that paralyzes me and keeps me stuck in patterns of drinking”.

“I was finally able to grieve the loss of my three siblings and my father. I had been unable to express those emotions before beginning the imagery sessions”.

“Each week I looked forward to having a session. I talked about my imagery in other groups and continued to realize the significance of the imagery in my treatment process. I am so thankful that I had this opportunity, it has made a great deal of difference in my treatment and recovery”.

Don

“I have learned a great deal about myself during these sessions. I have gained many insights through the imagery and these sessions have been an invaluable part of my treatment”.

Marvin

“I can finally see how my childhood and my mother’s death played a key role in my addiction. I couldn’t see those things in all my other times through treatment”.

Albert (control group)

“I keep hearing from the people you are working with how helpful the sessions are. I look forward to the sessions I will get to do after I leave treatment”.

APPENDIX J
 Guided Imagery and Music Program Discography
 from Music for the Imagination

Imagery

Ravel: Introduction & Allegro
 Copland: Appalachian Springs (Excerpt)
 Tchaikovsky: 4th Symphony (Scherzo)
 Mendelssohn: 5th Symphony (Andante)
 Suk: Serenade in E-flat Major Op. (Adagio)

Pastorale

Debussy: Prelude to Afternoon of Faun
 Liadov: Enchanted Lake
 Holst: The Planets (Venus)
 Grieg: Cradle Song

Explorations

Ravel: Daphnis and Chloe Suite #2 (Excerpt)
 Brahms: 1st Symphony (3rd Movement)
 Respighi: Pines of Rome (Gianicola)
 Debussy: Nocturne (Sirenes)
 Durufle: In Paradisum
 Durufle: Notre Pere
 Bach: Suite #3 – Air

Caring

Haydn: Cello Concerto in C (Adagio)
 Puccini: Madame Butterfly (Humming Chorus)
 Debussy: String Quartet (Andantino)
 Bach: Christmas Oratorio (Shepherd's Song)
 Dvorak: Serenade in E Major (Larghetto)
 Warlock: Capriol Suite (Pieds en l'air)

Relationships

Chopin: 1st Piano Concerto (Romance)
 Rachmaninoff: 2nd Symphony (Adagio)
 Respighi: Fountains of Rome (Valle Giulia)
 Respighi: Fountains of Rome (Villa Medici)

Creativity I

Sibelius: 2nd Symphony (First Movement)
 Vaughn-Williams: 2nd Symphony (Lento)
 Delius: La Calinda
 Kallinkov: 2nd Symphony (Andante)
 Bizet: Intermezzo from Carmen

Inner Odyssey

Brahms: 3rd Symphony (Allegro con brio)
 Nielsen: 5th Symphony (Excerpt of First Movement)
 Beethoven: Violin Concerto (Larghetto)
 Corelli: Concerto Grosso in G minor (Adagio)

Mournful

Sibelius: Swan of Tuonela
 Goreczki: 3rd Symphony (Second Movement)
 Boccherini: Cello Concerto B-flat (Adagio)
 Russian Folk Songs: O the Steppes
 Russian Chant: The Joy of Those Who Mourn
 Shostakovich: 2nd Piano Concerto (Andante)

Solace

Haydn: Cello Concerto in C (Adagio)
 Sibelius: Swan of Tuonela
 Boccherini: Cello Concerto in B-flat (Adagio)
 Russian Folk Songs: O the Steppes
 Russian Chant: The Joy of Those Who Mourn
 Shostakovich: 2nd Piano Concerto (Andante)

Consoling

Sibelius: Swan of Tuonela
 Debussy: String Quartet (Andantino)
 Dvorak: Serenade in E (Larghetto)
 Shostakovich: 2nd Piano Concerto (Andantino)
 Warlock: Capriol Suite (Pieds en l'air)

Searching

Liadov: Enchanted Lake
 Vaughn-Williams: 2nd Symphony
 Holst: The Planets (Venus)
 Holst: The Planets (Neptune)
 Grieg: Cradle Song

Emotional Expression I

Brahms: 2nd Piano Concerto (Allegro non Troppo)
 Brahms: German Requiem Part I
 Brahms: German Requiem Part 5
 Brahms: 4th Symphony (Andante Moderato)

Creativity II

D'Indy: Symphony on French Mountain Air (First Movement)
 Elgar: 2nd Symphony (Larghetto)
 Mendelssohn: 3rd Symphony (Vivace)
 Faure: Pavane
 Ravel: Daphnis and Chloe Suite #2 (Excerpt)

Nurturing

Britten: Simple Symphony (Sentimental Sarabande)
 Walton: Touch her soft lips and part
 Faure: Cantique de Jean Racine
 Faure: Requiem (Pie Jesu)
 Puccini: Madame Butterfly (Humming Chorus)
 Massenet: Orchestral Suite #7 (Sous Les Tilleuls)
 Schumann: Funf Stucke im Volkston (Langsam)

Positive Affect

Elgar: Serenade for Strings (Larghetto)
 Elgar: Enigma Variations (Eight and Nine)
 Mozart: Laudate Dominum
 Barber: Adagio for Strings
 Brahms: Requiem Part 6 (Denn wir haben)

Grieving

Albinoni: Oboe Concerto in D minor (Adagio)
 Rodrigo: Concierto de Aranjuez (Adagio)
 Grieg: Holberg Suite (Air)
 Arensky: Piano Trio (Elegia)
 Vivaldi: Violin Concerto in A minor (Largo)
 Dvorak: Czech Suite (Romance)

Peak Experience

Beethoven: 5th Piano Concerto (Second Movement)
 Vivaldi: Gloria (Et in Terra Pax)
 Bach: Brandenburg Concerto #6 (Adagio ma non tanto)
 Faure: Requiem (In Paradisum)
 Wagner: Logengrin (Prelude to Act I)

Transitions

Borodin: 1st Symphony (Andante)
 Brahms: 3rd Symphony (Poco Allegretto)
 Beethoven: 9th Symphony (Adagio Molto)
 Brahms: 2nd Piano Concerto (Andante)

Emotional Expression

Brahms: 3rd Symphony (Allegro)
 Menotti: Piano Concerto (Adagio)
 Shostakovich: 5th Symphony (Excerpt)
 Mendelssohn: 3rd Symphony (Vivace non Troppo)

Death-Rebirth

Wagner: Gotterdammerung (Siegfried's Funeral March)
 Rachmaninoff: Isle of the Dead
 Bach: O Mein Jesu
 Mahler: Der Abschied (Excerpt)

Affect Release

Holst: The Planet (Mars)

Bach: Toccato and Fugue in D minor for Organ

Orff: Carmina Burana (Excerpts)

Orff: Carmina Burana (Excerpts)

Body Tape

Shostakovich: 3rd String Quartet (Allegro)

Shostakovich: 8th String Quartet (Allegretto)

Nielsen: 5th Symphony (Excerpt)

Vierne: Carillon de Westminster

Beethoven: 3rd Piano Concerto (Largo)

Prokofiev: 1st Symphony

APPENDIX K

Inventory of Interpersonal Problems

This is a series of questions relating to different aspects of each of our lives. Each question has five possible answers. Please mark the number which expresses your answer, with the numbers 0 and 4 being extreme answers. If the words under 0 are right for you, circle 0; if the words under 4 are right for you, circle 4. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

1. It is hard for me to understand another person's point of view.

0	1	2	3	4
not at all				extremely
2. I let other people take advantage of me too much.

0	1	2	3	4
not at all				extremely
3. I want to be noticed too much.

0	1	2	3	4
not at all				extremely
4. I keep other people at a distance too much.

0	1	2	3	4
not at all				extremely
5. It is hard for me to socialize with other people.

0	1	2	3	4
not at all				extremely
6. I open up to people too much.

0	1	2	3	4
not at all				extremely
7. I put other people's needs before my own too much.

0	1	2	3	4
not at all				extremely
8. It is hard for me to join in groups.

0	1	2	3	4
not at all				extremely
9. It is hard for me to feel close to other people.

0	1	2	3	4
not at all				extremely
10. I argue with other people too much.

0	1	2	3	4
not at all				extremely

APPENDIX L

ORIENTATION TO LIFE QUESTIONNAIRE

(Sense of Coherence Scale)

Here is a series of questions relating to various aspects of our lives. Each question has seven possible answers. Please mark the number which expresses your answer, with numbers 1 and 7 being extreme answers. If the words under the 1 are right for you, circle 1; if the words under 7 are right for you circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

1. When you talk to people, do you have the feeling that they don't understand you?

1	2	3	4	5	6	7
never have this feeling						always have this feeling

2. In the past, when you had to do something which depended upon cooperation with others, did you have the feeling that it:

1	2	3	4	5	6	7
surely wouldn't get done						surely would get done

3. Think of the people with whom you come into contact daily, aside from the ones with whom you feel closest. How well do you know most of them?

1	2	3	4	5	6	7
you feel that they're strangers					you know them very well	

4. Do you have the feeling that you don't really care about what goes on around you?

1	2	3	4	5	6	7
very seldom or never						very often

5. Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?

1	2	3	4	5	6	7
never happened						always happened

6. Has it happened that people you counted on disappointed you?

1	2	3	4	5	6	7
never happened						always happened

7. Life is:

1	2	3	4	5	6	7
full of interest						completely routine

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8. Until now, life has had:

1	2	3	4	5	6	7
no clear goals or purpose at all						very clear goals and purpose

9. Do you have the feeling that you're being treated unfairly?

1	2	3	4	5	6	7
very often						very seldom or never

10. In the past ten years your life has been:

1	2	3	4	5	6	7
full of change without your knowing what will happen next						completely consistent and clear

11. Most of the things you do in the future will be:

1	2	3	4	5	6	7
completely fascinating						deadly boring

12. Do you have the feeling that you are in an unfamiliar situation and you don't know what to do?

1	2	3	4	5	6	7
very often						very seldom or never

13. What best describes how you see life?

1	2	3	4	5	6	7
one can always find a solution to painful things in life						there is no solution to painful things in life

14. When you think about life, very often:

1	2	3	4	5	6	7
feel how good it is to be alive						ask yourself why you exist at all

15. When you face a difficult problem, the choice of the solution is:

1	2	3	4	5	6	7
always confusing and hard to find						always completely clear

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16. Doing the things you do every day is:

1	2	3	4	5	6	7
a source of deep pleasure and satisfaction					a source of deep pain and boredom	

17. Your life in the future will probably be:

1	2	3	4	5	6	7
full of changes without your knowing what will happen next					completely consistent and clear	

18. When something unpleasant happened in the past, your tendency was:

1	2	3	4	5	6	7
"to eat yourself up" about it					to say "ok, that's that, I have to live with it", and go on	

19. Do you have very mixed feelings and ideas?

1	2	3	4	5	6	7
very often					very seldom or never	

20. When you do something that gives you a good feeling:

1	2	3	4	5	6	7
it's certain that you'll go on feeling this good					it's certain that something will happen to spoil this feeling	

21. Does it happen that you have feelings inside you that you would rather not feel?

1	2	3	4	5	6	7
very often					very seldom or never	

22. You anticipate that your personal life in the future will be:

1	2	3	4	5	6	7
totally without meaning and purpose					full of meaning and purpose	

23. Do you think that there will always be people whom you'll be able to count on in the future?

1	2	3	4	5	6	7
you're certain there will be					you doubt there will be	

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24. Does it happen that you have the feeling that you don't know exactly what's about to happen?

1	2	3	4	5	6	7
very often						very seldom or never

25. Many people- even those with strong character, sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1	2	3	4	5	6	7
never						very often

26. When something happened, have you generally found that:

1	2	3	4	5	6	7
you overestimated or underestimated its importance						you say things in the right proportion

27. When you think of difficulties you are likely to face, in important aspects of your life, do you have the feeling that:

1	2	3	4	5	6	7
you will always succeed in overcoming the difficulties						you won't succeed in overcoming the difficulties

28. How often do you have the feeling that there's little meaning in the things you do in your daily life?

1	2	3	4	5	6	7
very often						very seldom or never

29. How often do you have feelings that you're not sure you can keep under control?

1	2	3	4	5	6	7
very often						very seldom or never

APPENDIX M
Scale for assessing responsiveness to GIM

Imagery Portion
By Kenneth Bruscia, Ph.D, FAMI

Imager: _____ Guide: _____

Gender: _____ Age: _____ Number of previous sessions: _____

Program: _____

Induction: _____

Instructions: Rate the imager on each question, using a scale of 1-5: 1= the least often, the least amount of time, and/or the least evident; 5= the most often, the most amount of time, and/or the most evident; NA is not applicable or no opportunity to observe.

IMAGERY RESPONSES

- ___ How easily and spontaneously did the imager generate imagery?
- ___ Did the imager stay with the images for a sufficient amount of time?
- ___ How vividly did the imager experience the images?
- ___ How responsive was the imager's body to the imagery experience?
- ___ How emotionally involved was the imager in the imagery experience?
- ___ How congruent were the imager's emotional reactions with the image
- ___ How actively did the imager participate in or interact as a character within the images?
- ___ How personal or autobiographical were the imager's images?
- ___ How easily was it for the imager to experience images in different sensory modalities?
- ___ How open was the imager to images that were unusual, fantastic or out of the ordinary?
- ___ How accepting was the imager of his/her own images?