EFFECTS OF GROUP MUSIC THERAPY ON PSYCHIATRIC PATIENTS:

DEPRESSION, ANXIETY AND RELATIONSHIPS

A RESEARCH PAPER

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE

MASTER OF SCIENCE

BY

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MUNCIE, INDIANA

DECEMBER 2011

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ABSTRACT

RESEARCH SUBJECT: Effects of Group Music Therapy on Psychiatric Patients:

Depression, Anxiety and Relationships

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COLLEGE: Applied Sciences and Technology

DATE: December, 2011

PAGES: 51

Mental illnesses is often misunderstood and not managed well in the healthcare system. Treatment for mental illnesses includes multiple medications and therapy. However, most individuals with mental illness are treated at home. Alternative therapy and other interventions may bridge the gap between home treatment and hospitalization. The purpose of this study is to evaluate a group music therapy intervention with mentally ill individuals to determine the effects on depression, anxiety, and relationships. This is a replication of Choi, Lee and Lim's (2008) study. The study is based on the work of (Lippin and Micozzi 2006), alternative therapy programs to increase self-discovery and awareness and self-esteem. The sample will include 30 patients in an outpatient setting who attend group therapy in Northern Indiana. The intervention will be the group music sessions conducted by the researcher in conjunction with group therapy. Depression will be measured by Beck's Depression Inventory, anxiety by the State and Trait Anxiety Inventor, and relationships by the Relationship Change Scale.   Findings of this study will provide information for therapists who work with mentally ill individuals as outpatients to improve outcomes of mental illness and prevent hospitalization.

Chapter I

Introduction and Background

Mental illnesses are prevalent in the population, and the effects on quality of life of individuals that suffer from illnesses have become a public health concern in the United States. The Centers for Disease Control and Prevention (CDC) reported that half of the total adult population will suffer from a mental illness (2011). Individuals suffering from mental illness are often stigmatized, and go untreated. A mental illness does not just affect individuals who suffer from it, but also the individual's family members, employers, and the overall community are affected when the illnesses are untreated. Although the majority of the population will be affected by mental illness in some way, the lack of understanding among the general public is well documented (National Alliance on Mental Illness [NAMI], 2011).

Mental illnesses carry a high financial cost to the healthcare system, costing billions of dollars each year due to association with other chronic health conditions (CDC, 2011). The morbidity of mental illness is the greatest indirect cost to the economy. This is mainly due to the inability to be employed and lack of productivity (Palpant, Steimnitz, Bornemann, & Hawkins, 2006). Mental illnesses also have many co-morbidities associated with it, such as cardiovascular diseases, and diseases of the lung due to long-term cigarette use.   Many individuals who are mentally ill do not have the health insurance to cover treatment. Therefore, individuals suffering from mental illness

often seek disability benefits due to unemployment and large medical expenses (Palpant et al., 2006).

The National Survey on Drug Use and Health (NSDUH) reported that mental illness is one of the leading causes of disability in the United States, affecting 57.7 million adults, or 26.2% of the adult population (2009). A mental illness can cause distress in an individual's quality of life, profession and familial role. The National Institute of Mental Health (NIMH) stated that a mental illness is a mental, behavioral or emotional disorder that lasts for 1 year causing serious functional impairment, and results with interference with one or more major life activities (2009, p. 3).

Substance abuse often co-occurs with mental illnesses, resulting in greater impairment. According to Perron, Bunger, Bender, Vaughn and Howard (2010), 50% of individuals with a mental illness also have a substance abuse problem, and only a small percentage of mentally ill individuals seek treatment for both disorders. Besides alcohol and cigarette abuse, other abused substances include marijuana, cocaine, heroin, hallucinogens, and misuse of prescription drugs (Han, Clinton-Sherrod, Gfroerer, Pemberton, & Calvin, 2011). The treatment for substance abuse can often lead to treatment of the underlying mental illness, which can result in improvement in psychological health and improve relationships (Han et al., 2011). Treatment techniques of both disorders must include long term counseling, social support, and motivational interventions, with considerations of cultural characteristics (Perron et al., 2010).

Although mental illnesses are highly prevalent, individuals affected have difficulty finding the support needed for treatment and rehabilitation. Nationally, only 60% of individuals suffering from a mental illness received mental health treatment

within the past year (NSDUH, 2009). Barriers to treatment include the inability to find accessible treatment facilities, and lack of support from family and friends. Failure of treatment can lead to multiple admissions to inpatient centers in a crisis state, increases in homicide, suicide and violence, unnecessary incarceration, along with illicit drug abuse (NSDUH, 2009). Individuals suffering from mental illness are 2 to 6 times more likely to be involved in unintentional injuries, and intentional injuries, homicide and suicide (CDC, 2011).

Mental illness can be costly in terms of medication and psychiatric care, however alternative therapy, such as music therapy, can offer an inexpensive addition to an individual's treatment regimen, providing interaction with others and access to healthcare workers. The National Alliance on Mental Illness (NAMI) stated that 70-90% of individuals with mental illness will have a reduction in symptoms if both medications and psychosocial therapy interventions are available (2011). Psychosocial therapy can include cognitive behavioral therapy, interpersonal therapy, peer support groups, and community outreach centers, (NAMI, 2011). Alternative therapy, such as music therapy, can also be used as part of the psychotherapy therapy regimen.

Mental illnesses, and the symptoms associated with the illnesses, can be detrimental to an individual's quality of life and productivity. Mental illness is costly to the healthcare system, and drug abuse is often a co-morbidity associated with mental illness. However, treatment and support are available in outpatient alternative therapy. Outpatient alternative therapy, such as music therapy, offers an atmosphere that is positive, supportive, and proactive in treating symptoms of mental illness. Music therapy conducted in an outpatient setting is inexpensive and allows for social interaction. The

techniques used in music therapy can also be performed by individuals while at home. Individuals suffering from the symptoms of mental illness can participate in a social setting and form relationships, while learning noninvasive techniques to treat symptoms associated with mental illness. Further investigation is needed to support music therapy as a treatment for mental illness.

Background and Significance

Mental illness is a serious condition requiring pharmacological interventions, psychotherapy, and hospitalization when appropriate. Treatment for mental illnesses has changed and evolved throughout history, with the earliest records of treatment dating back to Biblical times. Throughout history, the biological causes of mental illness have been misunderstood. Unfortunately, the treatment of mental illness has not always been positive, and history reveals that the mentally ill suffered from persecution, confinement, and even death (Kring, Davison, Neale, & Johnson, 2007).

The mentally ill were first believed to be possessed by demons, and were treated by exorcisms or executed. During the Dark Ages, 400 to 1000 AD, the mentally ill were placed in Christian monasteries where monks would pray over the individuals. Eventually, by the 15th century, the mentally ill were placed in asylums in isolation from family and the rest of society. Treatment was barbaric in the asylums. Patients were shackled to the walls, and were only allowed to lie down at night (Kring et al., 2007).

Philippe Pinel reformed the treatment of the mentally ill in the 1800s, and offered more of a humanitarian treatment towards patients in asylums (Kring et al., 2007). It was not until the late 1800s, that William Tuke began the Society of Friends and The York Retreat. The York Retreat's focus of treatment was geared towards sympathetic and supportive treatment. This retreat center offered the mentally ill a quiet and religious

atmosphere to live, work, or rest (Kring et al., 2007). Also in the 1800s, Dorothea Dix fought for improvement of hospitals that treated the mentally ill, that resulted in 32 hospitals dedicated to the mentally ill (Kring et al., 2007). During the 1900s, institutional treatment of the mentally ill was introduced, along with medications, and counseling (NAMI, 2011).

It was not until the 1960s that the primary treatment of using medications, and institutionalizing patients was changed. Treatment became more holistic, including the psychosocial health of the individual with the use of medications in combination with counseling and alternative therapy. Current treatment of mental illness includes: managing the illness process, decreasing the severity of symptoms, improving independence, and increasing the individual's productivity (NAMI, 2011). Besides hospitalization and medications, treatment for mental illness includes alternative and therapeutic techniques, including music therapy, art therapy, guided imagery, massage, yoga, acupuncture, and hypnosis (NAMI, 2011). Individuals suffering from mental illness often benefit from the use of alternative therapies because it is effective and can be done at home or in an outpatient setting. Music therapy has been utilized for many illnesses, because it offers an opportunity for individuals to move, and express themselves, while increasing the individual's motivation to participate in social activities (American Music Therapy Association, 2011).

Utilizing music to help change behavior and improve health can be dated as far back as the philosophical writings of Aristotle and Plato in the 4th and 5th century B.C. (American Music Therapy Association, 2011). The earliest document where music was considered as a therapy was documented as, "Music Physically Considered," in 1789.

Throughout the 1800s, music therapy was utilized in medical dissertations, and the first recorded music therapy session was implemented in an institutional setting.

Music therapy was used after World War II to provide comfort to the veterans who suffered from physical injuries and psychological trauma. It was not until the late 1900s that music therapy became a clinical profession. In 1944, Michigan State University began the first music therapy program (American Music Therapy Association, 2011). In 1950, The National Association for Music Therapy (NAMT) was founded. The NAMT contributed to the standardization of research and clinical practice requirements, making music therapy a research priority (American Music Therapy Association, 2011).

The clinical practice of music therapy became a board-certified profession in 1985 (American Music Therapy Association, 2011). Utilizing music therapy as a structured intervention in treating the mentally ill has been beneficial in relieving symptoms, while improving mood and social interactions (Edwards, 2006). Individuals with mental illness are often isolated, stigmatized against, and feel hopeless. Music allows individuals to express emotions by associating the music with a prior life experience that may be painful or joyful (Edwards, 2006). Music allows for participation in a group setting, resulting in the formation of relationships and friendships among the mentally ill. Participation in music therapy can include listening to music, discussing lyrics, and song writing (Edwards, 2006).

Research has shown that music therapy is beneficial in the treatment for mentally ill individuals, along with depression, anxiety, and pain caused by other illnesses (Hayashi et al., 2002; Horne-Thompson & Grocke, 2008; Nilsson, Kokinsky, Nilsson,

Sidenvall, & Enskar, 2009; Siedliecki & Good, 2006; Ulrich, Houtmans, & Gold, 2007). Music therapy helps reduce the negative symptoms of schizophrenia, while improving social interactions (Hayashi et al., 2002; Ulrich et al., 2007). Patients suffering from Depression showed improvement in expressing inner emotions after receiving music therapy, while patients struggling with drug abuse formed relationships, decreasing isolation (Chou & Lin, 2006; Dingle, Gleadhill, & Baker, 2008). Gold, Voracek, and Wigram (2004) determined that music therapy is beneficial in treating children and adolescents with behavioral problems and developmental illness.

Music therapy can also be used to treat symptoms of anxiety and depression in the presence of an underlying medical illness. A study by Siedliecki and Good (2006) investigated how music therapy can be used to help alleviate chronic pain associated with chronic joint discomfort. Nilsson et al. (2009) determined that music therapy is beneficial in reducing anxiety in children who underwent a surgical procedure. Another study showed that music therapy was helpful in reducing stress, anxiety, and depression in pregnant women (Chang, Chen & Huang, 2008). Horne-Thompson and Grocke (2008) determined that music therapy was effective in treating pain, anxiety and tiredness in patients under palliative and hospice care. The studies support the use of music therapy as a treatment.

Although history revealed that the biological causes of mental illness were misunderstood, and individuals were treated with harsh and inhumane techniques, the present treatment techniques are holistic and supportive. Research studies have determined that symptoms of mental illness decrease when individuals are treated with the combination of medications, counseling and alternative treatment, such as music

therapy. Music therapy is now considered a clinical profession in the healthcare community and it offers a supportive and holistic approach in treating symptoms of mental illness.

Statement of Problem

Symptoms of depression and anxiety are severe and debilitating, leaving individuals alone and isolated. Relationships among family and friends suffer, and the mentally ill may not receive the support needed to manage the disease. Music therapy, along with other types of alternative therapy, may improve symptoms associated with mental illness, provide an environment for social interaction, and decrease the likelihood of hospitalization. Choi, Lee, and Lim (2008) described how music therapy aids in allowing the individual to express emotions while producing a state of mental relaxation. Music therapy can be beneficial by decreasing symptoms of depression and anxiety, while enhancing interpersonal relationships (Choi et al., 2008).

Purpose of Study

The purpose of this study is to compare differences in two groups of patients to determine if music therapy has an effect on depression, anxiety, and relationships in mentally ill patients. This is study is a replication of Choi et al.'s (2008) study to assess the effects of music therapy on mentally ill in an outpatient center.

Research Question

1. Are there differences in depression, anxiety, and interpersonal relationships, between two groups of mentally ill patients, when one group receives traditional therapy and the other group receives music therapy?

Definition of Terms

   Group Music Therapy: Conceptual.

   Group music therapy is a controlled use of the influence of music, led by music therapists on individuals to help aid in the psychological, physiological, and emotional symptoms during the treatment of an illness or disease (Choi et al., 2008).

   Group Music Therapy: Operational.

   Group music therapy will be led for 60 minutes, once weekly, for 15 weeks with mentally ill individuals. The music therapy will consist of playing instruments, listening to relaxing music, singing, and song discussion.

   Depression: Conceptual.

   According to Beck, Steer, Ball, and Ranieri (1996), depression is characterized by a depressed mood, diminished interest or pleasure in usual activities, change in appetite or sleep patterns, inability to concentrate, and feelings of worthiness.

   Depression: Operational.

   The Beck Depression Inventory (BDI) is used to measure depression. It is a 21-item self report questionnaire. It assesses a range of symptoms of depression, including the affective, cognitive, physiological social and behavioral symptoms (Beck et al., 1996).

   Anxiety: Conceptual.

   Spielberger, Gorsuch, Lushene, Vagg, and Jacobs (1983) described anxiety as feeling restlessness and constant worry about perceived events. Symptoms also include being easily fatigued, irritability, significant tension in muscles, and inability to sleep.

Anxiety: Operational.

STAI is used to measure anxiety with 20-items assessing trait anxiety, and 20-items assessing state anxiety. Symptoms associated with the trait anxiety scale pertain to stable symptoms of anxiety that do not change over time, while state anxiety assess for symptoms of anxiety that change over time or fluctuate in certain situations (Spielberger et al., 1983)

Improved Relationships: Conceptual.

According to Schlein and Guerney (1977) relationships provide satisfaction, communication, trust, sensitivity, and understanding.

Improved Relationships: Operational.

The Relationship Change Scale is a questionnaire with 27 items to measure the quality of change in relationships with others over a period of time (Schlein & Guerney, 1977).

Organizing Framework

The organizing framework is based on the previous study conducted by Pacchetti, Mancini, Aglieri, Fundaro, Martignoni, and Giuseppe (2000). Pacchetti et al. (2000) determined that music therapy stimulates sensory pathways, aiding in the stimulation of emotions and motor response in patients with Parkinson's disease. Music therapy, performed while the patient is awake and actively participating, or while the patient is at rest, allows patients to express emotions, interact with others, while producing a state of relaxation (Pacchetti et al., 2000).

Limitations

One limitation of this study is a small sample size. The control group did not receive standardized therapy during the music therapy sessions, making it difficult to determine if music therapy was effective (Choi et al., 2008).

Assumptions

1. Mentally ill patients experience depression and anxiety as a result of mental illness.

2. Mentally ill patients experience difficulty with relationships due to symptoms of mental illness.

3. Alternative therapy, such as music therapy, may decrease the severity of symptoms in mental illness.

Summary

The use of music therapy in an outpatient setting has been beneficial in treating the mentally ill. Individuals suffering from mental illness often experience depression, anxiety, and difficulty maintaining relationships (Choi et al., 2008). Music therapy was used to determine if symptoms of anxiety and depression decreased, while interpersonal relationships improved in two groups of psychiatric patients. This study is a replication of Choi et al.'s (2008) study.

Chapter II

Review of Literature

Introduction

Music therapy is used in a variety of settings with different types of patients. Music therapy is an intervention to help patients cope and heal without the use of medications or invasive treatment. Patients who suffer from many illnesses can feel pain, experience depression, anxiety, and have difficulty maintaining relationships on an interpersonal level. Music therapy is beneficial for the treatment of anxiety, tension, stress reduction, or mood enhancement (Choi et al., 2008). The purpose of this study is to compare differences in two groups of patients to determine if music therapy has an effect on depression, anxiety, and relationships in mentally ill patients.

Organization of Literature

The literature addresses how music therapy was used to help alleviate mental distress in a variety of patients. The literature review is organized into five sections: (a) Organizing Framework, (b) Meta-analysis: Music Therapy, (c) Effects of Music Therapy: Mental Illnesses, (d) Effects of Music Therapy: Anxiety, Depression and Pain in Illness, (e) Effects of Music Therapy: Pregnancy, (f) Effects of Music Therapy: Behavioral Problems.

Organizing Framework

      The organizing framework for this study is music therapy. "Music therapy is the clinical and evidenced based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program" (American Music Therapy Association, 2005, p. 3). Music therapy methods include: music listening, guided imagery, performance, learning through music, and lyric writing. Music therapy is provided by a qualified licensed therapist with the help of other healthcare staff. The music therapist assesses certain aspects of the individual, including the emotional well-being, physical health, communication abilities, and then designs methods that are appropriate based on the individual's needs. The therapist continually participates with the individual in treatment planning, evaluation, and follows up with the individual on their progress (American Music Therapy Association, 2005).

      Music therapy offers many benefits to an individual who is suffering from mental illness, disability and pain, and can be implemented with all age groups. It is noninvasive, and offers a method of treatment that is unique to each individual's needs, improving quality of life. Patients suffering from mental illness can utilize music therapy to help express feelings, reduce stress and anxiety, and form relationships with others. According to the American Music Therapy Association (2005) "Music is a form of sensory stimulation that provokes responses due to the familiarity, predictability and feelings of security associated with it" (p. 1).

      The framework used for this study was designed by Pacchetti et al. (2000). Pachetti et al. (2000) utilized active music therapy to improve motor, affective, and behavioral functions of patients suffering from Parkinson's disease. Two branches of

music therapy are used, active and passive. Active music therapy utilizes improvisation of music by using instruments and voice. Passive music therapy is conducted when the patient is resting, with the aim of listening to music to visualize peaceful images or memories (Pachetti et al., 2000).

Choi et al. (2008) referenced the work of Pacchetti in a study in which music therapy was utilized to treat mentally ill patients. Choi et al. (2008) recruited 30 outpatients and assigned each to a music intervention group or a routine care group, to use music therapy to improve depression, anxiety, and relationships. The outcomes were measured by the Beck's Depression Inventory, the Trait Anxiety Inventory, and the Relationship Change Scale. The music intervention group attended three phases of music, with the first dedicated to improve self-awareness by utilizing singing, relaxing to the music, and playing instruments. The second phase was aimed at reducing depression and anxiety, while promoting self-esteem by allowing the patients to express feelings through guided imagery, playing a musical instrument, song writing, or song discussion. The third phase was aimed at improving interpersonal relationships by promoting collaboration among the patients. Live music and song writing were utilized during this phase. The results indicated that the music group had improvements in depression, anxiety and relationships after 15 sessions of music therapy (Choi et al., 2008).

The framework used by Choi et al. (2008) is appropriate for this study because it addresses depression, anxiety and relationship stress among patients suffering from a mental illness. It utilized interventions that also promoted self-esteem and self-awareness which cannot be done with medications alone.

Meta-analysis: Music Therapy

Gold et al. (2004) conducted a meta-analysis of experimental research in the literature on children and adolescents who suffer from mental illness. Children and adolescents who suffer from a mental illness do not always communicate verbally. Music therapy can promote interaction, allow expression of emotions, and form relationships without utilizing verbal communication. The authors addressed the relationship of music therapy to the type of pathology, the child's age, type of outcome and therapy approach (Gold et al., 2004).

Gold et al. (2004) performed a systematic literature search to compile studies that focused on how music therapy was used.   The studies involved comparing different types of treatments with music therapy, or treatments that occurred before and after music therapy. Studies that were excluded from the meta-analysis included studies that: utilized music alone as a term of treatment; tried to determine if music therapy showed positive outcomes in a group rather than the individual patient; psychopathology was not identified; sample size of patients was small; or results were not reported in the study. The final selection of articles included 11 studies that had experimental research conducted between the years of 1970 to 1998.

There were various locations included in the studies, including the U.S. and Austria. A wide range of diagnoses were present in the studies, ranging from developmental disorders to conduct disorders. Music therapy was used in all the studies, and the outcomes included behavioral observations, developmental tests, and self reports over the patient's self esteem (Gold et al., 2004).

The studies were classified into the following characteristics: child age and gender, mental diagnosis, intervention utilized, type of comparison group, type of outcome, and publication status of the article. The mental diagnoses were further characterized into separate categories based on the type of disorder, such as behavioral disorders versus emotional disorders. The treatment effects were categorized as mean differences in the pre and post-test results (Gold et al., 2004).

Results indicated that music therapy has a medium to large positive effect, with an ES=.61 on the outcomes analyzed. It was also found that music therapy was especially helpful with patients who suffered from behavioral and developmental diagnoses rather than patients who suffered from emotional ones. Gold et al. (2004) determined that the studies that utilized a more eclectic and humanistic theoretical approach had better outcomes. Therefore, it can be determined that music therapy is an effective intervention for the treatment of mental illness in children.

Effects of Music Therapy: Mental Illness

Group music therapy can be helpful for patients in long term care for a chronic mental illness. Hayashi et al. (2002) conducted a study that tested group music therapy with female clients who suffered from schizophrenia to determine if music had an effect on psychotic symptoms, response to quality of life, and subjective music experiences.

The study took place in Tokyo at a large inpatient psychiatric center. Seventy-four female patients were approached, and 60 patients consented to the experiment. Inclusion criteria were a diagnosis of schizophrenia or schizoaffective disorder, with the DSM-IV confirming the diagnosis. Exclusion criteria were anyone who had organic cognitive impairment or mental retardation. The participants were divided into two

groups, a therapy group receiving the musical therapy, and a waiting group. The mean age of the therapy group was 66.1, and the waiting group mean age was 69.0 years old (Hayashi et al., 2002).

The group music therapy lasted for 15 weeks, with sessions of 1 hour per week. During the sessions, seven music therapists led the group in musical interaction by using piano, violin, clarinet and flute. Songs were used with the intent to facilitate enjoyment, performance with music, and to spark interpersonal communication with the patients (Hayashi et al., 2002).

The psychiatrist used the Positive and Negative Syndrome Scale (PANSS) and the Quality of Life Scale (QLS). Hayashi et al. (2002) stated that the PANSS is widely used, confirming its reliability is favorable for this study.

The QLS was used to evaluate the patient's quality of life by assessing for deficit symptoms. The QLS consists of 21 items and four subscales using a Likert rating response. The interrater reliability of the QLS was 0.76.
Hayashi et al. (2002) stated:

> The reliability study, the two raters made independent ratings of the scale on the basis of a single interview for each of the 20 patients during the study period, and analysis of variance intraclass coefficients were calculated to measure the level of concordance. (p.189)

To measure the patient's subjective musical experiences, the researchers utilized two Likert type scales, one that measured listening experience, and the other to evaluate ward chorus activity. High scores indicated that the patients were more actively involved in the sessions. The nursing staff also assessed ward-life activity and ward adjustment

every 2 months during the study, with high scores indicating more pertinent ward life activity (Hayashi et al., 2002). Ward-life activity was measured by nursing staff using a 5-point, 10-item scale. Reliability was Cronbach's alpha scores of 0.84, 0.87, 0.929, 0.839, and 0.94 (Hayashi et al., 2002).

The results showed that the therapy group had reduced negative symptoms, and increased quality of life. The therapy group showed improvement in the PANNSS scores from the pre-assessment to post-assessment tests, with the waiting group showing no improvement of symptoms. Quality of life scores also improved, with therapy group showing more interpersonal contact. The authors concluded music therapy can help reduce negative symptoms, improve quality of life, and help with interpersonal contact among patients in an inpatient setting (Hayashi et al., 2002).

Depression can be debilitating and costly because it results in a lifetime treatment of medications, therapy and hospital admissions. Patients who suffer from depression can benefit from therapeutic approaches performed independently or with the expertise of therapists. Chou and Lin (2006) explored how guided imagery and music therapy benefited Chinese outpatients who suffered from depression. The aim of the study was to explore how the patient's guided imagery and music therapy (GIM) effected depression suffering (Chou & Lin, 2006).

The study took place in Taiwan over 1 year. A total of five patients met the inclusion criteria of having a diagnosis of depression, according the DSM-IV, and were undergoing treatment by a psychiatrist. Other criteria included treatment of depression with medications, and visits with a therapist. Individuals who were high school graduates

or above, between the ages of 19 and 50 years old, scored above a 24 on the Mini-Mental

State Examination or (MMSE), and no cognitive impairments were included.

A pre-therapy intake evaluation was conducted with the belief that Guided

Imagery Music Therapy (GIM) would help alleviate depression, identify mechanisms that

will help solve problems, and correct distorted thinking and behavior. The Beck

Depression Inventory, a MMSE, and interview questions were administered prior to

music therapy to understand the patient's mental status, medication compliance, and

disturbing problems (Chou & Lin, 2006).

The five subjects participated in eight individual GIM therapy sessions with a

licensed music therapist and researcher. Steps of the GIM therapy followed a pattern that

included a preliminary interview with ambient music playing, an induction period of

relaxation exercises utilizing sounds of nature promoting a soft and gentle atmosphere. A

music listening period provided an atmosphere where treatment goals were discussed

with classical music playing. A post session during which the therapist encourages the

patient to discuss imagery, and how it can be utilized in real life situations, followed.

During each of the sessions, the researcher monitored the patient's physiological indices,

emotional states, and behavioral and postural changes. The researchers then conducted

interviews 24 to 48 hours after each session, to discuss certain aspects of the GIM therapy

sessions. Topics discussed included how the patient felt during the GIM therapy, and

what experiences were most memorable for the patient. Data analysis and coding were

done to find reoccurring themes and listening experiences (Chou & Lin, 2006).

Results showed 55 important listening experiences shared by the five patients.

Themes included: "walking in natural sceneries," "creation of surroundings,"

"remembrance of past life experiences," "submersion into the music itself," and "remembrance of relaxation events." The researchers concluded that the GIM therapy helped the patient with inner emotions and alleviated depressed moods with all the patients. Therefore, GIM therapy can be utilized as a form of alternative therapy when treating patients with depression (Chou & Lin, 2006, p. 3).

Schizophrenic patients suffer from one of the most chronic mental illnesses, and are often in need of several treatment options that include medications, therapy, and inpatient care. Ulrich et al. (2007) believed that in addition to standard care, patients suffering from schizophrenia can benefit from the effects of music therapy to help improve sociality with others, and overall mental and global state. This study was conducted to determine the effectiveness of music therapy with schizophrenic patients in an acute care center. The focus of the treatment was to examine interpersonal relationships among patients, and to determine if there was a reduction of negative symptoms and improvement in quality of life (Ulrich et al., 2007).

The study took place in an inpatient psychiatric hospital in Bedburg-Hau, Germany. A total of 37 patients participated, with 54% men, and an average age of 38 years. Inclusion criteria were patients who had a diagnosis of schizophrenia, and who were able to participate in group therapy. Patients who were suffering from psychotic symptoms were excluded. The patients were expected to stay in the hospital 4 weeks, and be approved by the medical specialist (Ulrich et al., 2007).

The design of the study was pre-test, post-test in which participants were randomly placed into one of two groups. The experimental group received music therapy, and the control group received standard care. The experimental group was observed by

medical staff during the music sessions. Music therapy sessions lasted 45 minutes, averaging about 7.5 sessions over a 5 week period. The staff members observing the patients were trained on observation instruments to achieve high inter-rater reliability (Ulrich et al., 2007).

Instruments used were the GieBentest, the Scale for the Assessment of Negative Symptoms (SANS), and the Scale for Mental Health (SPG). Interpersonal contact was measured by using the GieBentest, where the patients did a self-evaluation and the observer evaluates interpersonal contact during the sessions. The GieBentest has a Cronbach's alpha score of 0.75, with the inter-rater reliability score of 0.63. Negative symptoms were tested using the German version of the SANS scale. Nurses filled out this questionnaire during the pre-test and post-test sessions, assessing the patients for negative symptoms. The Cronbach's alpha score was 0.70, and the inter-rater reliability was 0.58. Quality of life was measured by the Scale for Mental Health, with a Cronbach's alpha of 0.61. Quality of life was measured by the SPG questionnaire. This questionnaire was filled out by the patients, who rated opinion on overall quality of life. It was administered prior to the music therapy session and immediately after (Ulrich et al., 2007).

The findings from the observer GienBentest total showed no differences in interpersonal contact from pre-test to post-test, control group mean -0.17 to -0.26. and experimental group results were -0.20 to -0.05. The results from the self-rated GienBentest did not show a difference in interpersonal contact, with control group means ranging from 0.27 to 0.07, and experimental group means ranging, 0.32 to 0.70. Results from the SANS showed a difference in negative symptoms from pre-test to post-test

results, control group means ranged from 0.70 to 1.08, and experimental group means ranged from 1.09 to 0.72. Lastly, there were no significant differences between the experimental group and the control group in regards to the SPG. Experimental group means ranged from 2.90 to 3.01, and control group means ranged from 2.83 to 2.99 (Ulrich et al., 2007).

In conclusion, after reviewing the post-test questionnaires from both groups along with the observer scores, music therapy did help increase interpersonal contact and the patient's ability to adapt to a social environment, along with helping reduce the patient's negative symptoms of schizophrenia. However, the hypothesis that music therapy helps improve the patient's quality of life could not be determined because there were no significant differences between the control and experimental groups (Ulrich et al., 2007).

Patients who suffer from a mental illness, such as depression or anxiety, will often abuse alcohol and illegal drugs as a means to treat the underlying illness. Patients may isolate themselves, or do not engage in relationships. Patients abusing drugs or alcohol are unlikely to seek treatment for mental illnesses, or comply with prescribed therapy and medications. Dingle et al. (2008) conducted a study that examined how music therapy can be used for treatment of substance abuse. The researchers believed that music therapy can help patients by engaging and motivating to participate in group therapy, decrease stress and anxiety, while decreasing impulsivity. The purpose of this study was to examine treatment of music therapy, in conjunction with CBT (cognitive behavioral therapy), to determine if the music therapy engages patients to participate in treatment (Dingle et al., 2008).

Fifty-two patients in an acute-phase treatment facility in Australia for drug and alcohol abuse agreed to participate, with 24 respondents. The majority of the participants had co-occurring mental illnesses along with drug/alcohol abuse. Of the 24 participants, 10 were men, and 14 were women, with an average age of 35 (Dingle et al., 2008).

The music therapy was conducted by a music therapist and a psychologist over 7 weeks, with surveys handed out at the end of each week. The patients also participated in an open group therapy treatment program, the CBT, which concentrated on coping strategies and relapse prevention. The music therapy was designed to focus on what patients were learning as part of CBT such as: problem solving, communication, exploring emotions, planning activities of the day, exploring depression, anger and anxiety, and lastly, self-esteem and self-identity (Dingle et al., 2008).

The researchers designed a survey that was given at the end of each music session. The survey measured attendance rates, the participants' self-rated motivation, self-rated enjoyment, whether or not the individuals will participate again, and lastly an open response to how music therapy will help in the future. The first two questions utilized a Likert scale, the third question was a yes or no answer, with the last question being a tick-box type of response (Dingle et al., 2008).

Dingle et al. (2008) discovered that music therapy, in conjunction with CBT, can be used to help patients engage in drug treatment and mental health programs. Findings from question one, regarding motivation to participate was high among the group, had an overall mean of 4.0 out of 5, and a SD of 1.20. Findings from question two, self-rated enjoyment of the music session was also high, had a mean of 4.25 out of 5, and a SD of 0.74. The majority of patients (83 of 70) answered yes, and would participate in another

session, and on the tick-box response questions 46% stated that the music therapy will help them feel part of a group (Dingle et al., 2008).

After analyzing the results, Dingle et al. (2008) found that engaging in music therapy helped patients feel part of a group, which indicated that this type of therapy can help decrease isolation and increase the formation of relationships. Results of the survey showed positive outcomes and that music therapy was helpful for the patients.

Effects of Music Therapy: Anxiety, Depression and Pain in Illness

Individuals suffering from a terminal illness can experience anxiety and depression over the illness itself or impending death. Music therapy can be utilized to help relieve and manage the emotional, spiritual and physical symptoms associated with palliative care. Horne-Thompson and Grocke (2008) compared music therapy with standard therapy on the effects of anxiety and heart rate in a group of patients. The hypotheses were as follows: (a) there will be a significant difference between the control group and the experimental group on anxiety levels utilizing the Symptom Assessment Scale (ESAS), and (b) there will be a significant difference between the control group and experimental group on anxiety levels shown by a decrease in heart rate (Horne-Thompson & Grocke, 2008, p. 584).

The participants included inpatients who were receiving palliative care for a terminal diagnosis in Australia. The diagnoses ranged from congestive heart failure to an array of different cancers. Participants met the inclusion criteria for the study if patients received music therapy for anxiety as the main symptom for referral. Exclusion criteria included a score of more than 10 on the Blessed Orientation Memory and Cognition test, indicating cognitive impairment. Twenty-five patients, with a mean age of 74, consented

and were randomly assigned to the control group or the experimental group.   The

experimental group underwent a single music therapy session lasting 20-40 minutes.

This was implemented by a registered music therapist. The control group received

standard care given by a volunteer.   The patients, not the therapists, were blinded to both

the variables of music therapy and anxiety to decrease potential bias in the experiment.

Pre-test and post-tests were given prior to each music therapy session (Horne-Thompson

& Grocke, 2008).

The instrument was the Edmonton Symptom Assessment System (ESAS), a 0-10

scale that rates the severity of symptoms commonly occurring in palliative care patients.

The patients were given this test prior to the experiment and immediately after. The

second instrument was a pulse oximeter to measure heart rate. The heart rate was taken

prior to the session and afterwards (Horne-Thompson & Grocke, 2008).

The findings indicated that there were differences between the experimental and

control groups. On the ESAS scale, participants showed a decreased in anxiety, pain,

tiredness, and drowsiness. The researchers found that hypothesis one, indicating that the

experimental group will have a decrease in anxiety levels after receiving music therapy,

was supported, but hypothesis two, indicating there will be a change in heart rate was not.

The findings showed that anxiety was decreased in the experimental group, utilizing the

Mann-Whitney test, with a score of p=0.005. Results also showed that patients had a

decrease of pain, tiredness and drowsiness after attending the music session.   Music

therapy can be utilized to help relieve the symptoms associated with a terminal illness

(Horne-Thompson & Grocke, 2008).

Music therapy can be utilized to help children who have undergone a surgical procedure to reduce pain, distress and anxiety. Music is beneficial in distracting children, and poses no harmful side effects. Nilsson et al. (2009) conducted a study that utilized music therapy as an intervention for post operative care. The aim of the study was to: (a) determine if listening to music postoperatively will reduce pain or the need for morphine, distress, and anxiety a day after the procedure, and (b) to describe the experience that children had listening to music during the post op care.

Eighty children, ages 7-16 years old participated while hospitalized in the pediatric PACU in Gothenburg, Sweden over 1 year. Children were excluded who had cognitive and hearing impairments, did not speak Swedish, or had an ear-nose-throat surgery. The experiment took place the first postoperative day. The sample was randomly assigned into the control group (40 participants), or the music group, (40 participants). The music group had soft, relaxing music in bed for 45 minutes, while the control group did not have music (Nilsson et al., 2009).

The instruments used to measure the need for morphine included a Coloured Analogue Scale (CAS), or the Face, Legs, Activity, Cry, and Consolability Score (FLACC). Any child rating pain higher than a 4 on the scales was given the option for morphine. To test distress, anxiety and pain, three self-reports were given. One report was taken when the participant arrived to the PACU, one when the participant was discharged from the PACU, and 1 hour after discharge. The self-reports contained a CAS score, a Facial Affective Scale (FAS), and the short form of State-Trait Anxiety Inventory (STAI) (Nilsson et al., 2009).

Observations and interviews were also conducted with the children. Two nurses observed the children during the intervention, and recorded FLACC scores every 15 minutes, recording respiratory rate, heart rate, and oxygen saturation. Interviews were conducted the day after surgery asking about the care the patients received and if the patients had slept well after surgery (Nilsson et al., 2009).

The quantitative results were stated first, followed by the qualitative data. There were no significant differences between the experimental and control groups in regards to the FAS, CAS, FLACC, short STAI, and vital signs (Nilsson et al., 2009). The music group had fewer children who received morphine, 1 out of 40 participants, while the control group had 9 out of 40 (P <0.05). Five children rated pain higher than a 4 in the music group, while seven rated pain higher than a 4 in the control group on the FAS. There were no significant differences in the need for morphine between the two groups 1 hour after the discharge from PACU. The interviews also had positive results for the music group, with most stating that the music seemed to be useful for helping with the pain, and providing relaxation (Nilsson et al., 2009).

Although music therapy can be used to help reduce pain and provide relaxation, this treatment did not validate that it could be used to relieve anxiety or distress. However, music therapy is a simple and low cost method of providing pain relief with children who have received surgery (Nilsson et al., 2009).

Pain, powerlessness, depression and disability can cause detrimental effects to a patient's quality of life and overall happiness. Although the symptoms are commonly treated with medications, music-listening interventions can also help provide relief without side effects and at a lower cost to patients. Siedliecki and Good (2006)

conducted a study to determine the effect of music on levels of power, pain, depression and disability.

The hypotheses are stated as follows:

Individuals with CNMP who use music an hour a day for 7 days with have more power, and less pain, depression and disability than individuals who do not use music. Individuals with CNMP who use pattering music (PM) will have more power and less pain, depression, and disability than those who use a standard music (SM), and lastly, there will be no differences in pain, depression, and disability between groups who use music and those who do not use music when power is statistically controlled. (Siedliecki & Good, 2006, p. 554)

During the study, the researchers used researcher-selected music and subject-preferred music, based on the self assessment taken that day. The relationship between power, pain, depression and disability were the dependent variables (Siedliecki & Good, 2006). The two theoretical frameworks used were Rogers' Science of Unitary Human Beings and Barrett's Theory of Power.

A sample of 60 subjects was chosen from pain clinics at a chiropractic office in the northeast Ohio region. The majority of subjects were African American females. The inclusion criteria were ages of 21 and 65, having pain for a 6 month period in the back, neck, or joints, were receiving medical management of pain, and could read and speak English (Siedliecki & Good, 2006). Exclusion criteria were hearing loss, alcohol or drug abuse, altered mental status, cognitive impairment, inability to follow directions or read/write, or had other psychiatric illnesses other than depression. Subjects who had suicidal ideations or cancer related pain were also excluded from the study.

Three instruments were used to measure the variables being tested. Power was measured by the Power as Knowing Participation in Change Tool version II, or PKPCTII. The alpha reliability score for this tool was 0.96 for the pre-test, and 0.98 for the post-test. Pain was measured with the McGill Pain Questionnaire short-form (MPQ-SF) and the Visual Analogue Scale (VAS). The reliability score for the MPQ-SF was 0.44 for the pre-test and 0.52 for the post-test. Depression was measured using The Center for Epidemiological Studies Depression scale (CES-D). The pre-test reliability score was 0.89, and the post-test reliability score was 0.91. Lastly, disability was tested with the Pain Disability Index (PDI), with reliability scores of 0.84 for pre-test, and 0.88 for post-test (Siedliecki & Good, 2006).

The results were reported as mean scores from pre-test to post-test. For the variable of power, PM group showed improvement from pre-test to post-treatment, with mean scores of 273.50 pre-treatment to 285.89 post-treatment. The SM group also showed improvement with a mean score of 230.27 pre-treatment and 237.18 post-treatment. The control group did not show improvement, with scores 274.35 pre-treatment and 236.60 post-treatment (Siedliecki & Good, 2006).

The mean scores for pain using the MPQ-SF were as follows: PM group showed improvement with mean scores of 24.44 and 19.61. SM did show improvement with mean scores of 21.63 to 17.36, and control group showing scores of 22.10 to 22.50. VAS mean scores for pain are as follows: PM group show improvement with scores 6.43 to 5.65, SM group showed improvement with mean scores of 7.20 to 6.04, and control showed mean scores of 6.90 to 6.27 (Siedliecki & Good, 2006).

Depression scores were as follows: PM group showed improvement with mean scores 24.67 to 19.11, SM group showed improvement with mean scores of 24.82 to 21.14, and control group showed scores of 27.05 to 27.85. Lastly disability scores were that the PM group did show improvement from pre-test to post-test (38.56 to 37.00). SM group did show improvement, with mean scores of 39.86 to 34.68. The control group means were 37.95 to 40.85 (Siedliecki & Good, 2006).

After reviewing the results, it was determined that the music groups had better results than the control group, but there were no differences between the two groups in terms of the type of music used. Therefore, music can be used as a form of therapeutic intervention for pain, depression, power and disability for those who suffer from chronic pain (Siedliecki & Good, 2006).

Effects of Music Therapy: Pregnancy

Many women struggle with the demands and changes that occur during pregnancy, making pregnancy a fearful time rather than a joyous one. Music can offer a nonpharmacological solution to changes posing no side effects. Chang et al. (2008) examined the effects of music therapy on stress, anxiety, and depression on a sample of pregnant women in Taiwan. The researchers used randomized trial controlled design with a pre-test and post-tests.

The setting was a medical center in southern Taiwan in the 2002. A total of 236 women were randomly selected, and assigned into the experimental group (n=116), and a control group (n=120). The mean age for the experimental group was 30, and the control group 29. Inclusion criteria were an age over 18, uncomplicated pregnancies, expected to have uncomplicated vaginal births, and a gestational age of 18-34 weeks (Chang et al.,

2008). Chang et al. (2008) included the following demographic data: education, occupation, social class, marriage life, religion, gestation, gravidity, type of pregnancy, and prenatal education. There were no significant differences in demographical data between the two groups.

Three instruments were used to measure anxiety, stress, and depression before and after the music intervention. The Perceived Stress Scale (PSS), the State Scale of the State-Trait Anxiety Inventory (S-STAI), and the Edinburgh Postnatal Depression Scale (EPDS) all measured the variables with a Likert type scale, with the highest number indicating greater severity of symptoms (Chang et al., 2008). Reliability scores for the PSS were 0.81, 0.84 for the S-STAI and 0.88 for the EPDS.

The experimental group received 2 weeks of music intervention, one disc of relaxation music 30 minutes a day, while the control group received general prenatal care. The experimental group was asked to keep a diary indicating which CD was listened to and what activity was performed while listening. The post-test questionnaires were given 2 weeks after the intervention (Chang et al., 2008).

The results from both groups from the pre-test questionnaire testing stress, anxiety, and depression, did not show significant differences. After performing a t-test to determine if the experimental group had a decrease in symptoms, the researchers found that the experimental group had a significant decrease in the PSS, S-STAI, and EPDS scores after 2 weeks in the post-test questionnaire, PSS ($p <0.001$), S-STAI ($p = 0.01$), and EPDS ($p < 0.001$). The control group only showed a difference on the PSS ($p = 0.017$) (Chang et al., 2008).

Results from the diaries showed that participants enjoyed lullaby music, and were listening while at rest, bedtime or doing housework. After reviewing the results, it was concluded that music can be utilized as a means to help reduce stress, anxiety and depression during pregnancy (Chang et al., 2008).

Antepartum patients, who are hospitalized due to pre-term labor, preeclampsia, poor fetal growth, and placental previa, have high amounts of stress and anxiety, beyond what the woman with a normal uncomplicated pregnancy experiences. Music therapy and recreational therapy can be a cost-effective and low risk intervention to help minimize symptoms while on bed rest and hospitalized. Bauer, Victorson, Rosenbloom, Barocas, and Silver (2010) examined whether a single session of music or recreational therapy could relieve antepartum-related distress experienced by women who are hospitalized due to complications of pregnancy.

The study occurred in a regional perinatal teaching hospital on the antepartum unit in the Midwestern United States. Participants met inclusion criteria if over the age of 18, between 24 and 38 weeks, have not been previously hospitalized, could read and write English, had an unpredictable hospital stay, and were already hospitalized for 3 to 7 days (Bauer et al., 2010). Any patients that were vision or hearing impaired, had a serious mental illness, or were cognitively delayed, were excluded. The final sample included 80 women, primarily Caucasian, with a mean age of 31 years. Bauer et al. (2010) included demographic data with information regarding the participants' race, age, academic level, marital status, and on partial or complete bed rest.

The participants were blinded to the study, and were randomly assigned to one of three groups, the recreational group, music group, and an attention-control group. The

tool used was the Antepartum Bedrest Emotional Impact Inventory (ABEII), which was administered prior to the therapy, 1 hour after, then again at 48-72 hours to measure the participant's distress. The ABEII measures distress associated with being on bed rest, such as anxiety, loneliness, isolation, boredom, depression, stress, and loss of control. It consists of 18 items, with higher scores indicating greater distress. This tool was created by the researchers based on other reliable tools, including the STAI, Edinburg Postnatal Depression Scales, the Hospital Anxiety and Depression Scale, and the Antepartum Hospital Stressors Inventory. The Cronbach's alpha for the ABEII was 0.90, with test-retest reliability of 0.72-0.78 (Bauer et al., 2010).

The music and recreational group received a visit in the hospital room by a music therapist or recreational therapist, and received 1 hour of standardized script that informed the participants on the benefits of music therapy and the available interventions. Following the standardized script, the participants were offered 1 hour of either music therapy or recreational therapy. Examples of music therapy included relaxation music listening, active listening or guided imagery, song writing, or music for bonding. Examples of recreational therapy included creative arts, leisure activities, or crafts (Bauer et al., 2010).

Findings from Bauer et al. (2010) were that the music and recreational groups showed a decrease in distress 1 hour after the intervention, and 48-72 hours after. The control group did not show a significant difference in distress scores. The music group showed a greater decrease in a mean score of 39.6 on the ABEII prior to the intervention, to 29.3 1 hour after, and 34.1 48-72 hours after. The recreation group had a decrease of 36.5 to 31.6 1 hour after, or 31.4 48-72 hours after.

In this study, music therapy, particularly relaxation music, helped the most in lowering distress. Therefore, it can be concluded that music therapy and recreational therapy can be utilized to help decrease distress in antepartum patients who are on bed rest (Bauer et al., 2010).

Effects of Music Therapy: Behavioral Problems

Aggressive behavior and anger among children is a growing problem and a sign of poor psychological health. Current treatment includes cognitive and behavioral techniques, counseling and medications. Alternative therapy, such as using music, art, drama, and dance therapy, is also effective in providing children with a sense of control over emotions. Choi, Lee, and Lee (2007) assessed the effects of music therapy on aggression and self-esteem in highly aggressive children.

The 15-week music intervention program took place in South Korea at an after-school program, where 48 children were placed into a music intervention group or an untreated control group. The researchers screened for aggression, and found eligibility using the Child Behavior Checklist (K-CBCL). Inclusion criteria for the study were scores of 60 or higher on the K-CBCL, children that understood the content of the questionnaires and purpose of the study, and were between the ages of 10 and 12 years. Demographic data were collected, including the patient's age, gender, and IQ score. The mean age of the participants was 11, with an equal number of boy and girls in each group, and a mean IQ score of 114.0 for the music group and 114.8 for the control group (Choi et al., 2007).

Tools for the study included the K-CBCL, the Child Aggression Assessment Inventory (CAAI), and the Rosenberg Self-esteem Scale (RSES). The K-CBCL is a

questionnaire for parents that has 20 items assessing aggression problems during the past

6 months. Higher scores indicated more severity of problems. The Cronbach's alpha

score was 0.86. The CAAI is a questionnaire for teachers which assess aggression over

the past week, with higher scores indicating more episodes of aggression. Internal

consistency using Cronbach's alpha was 0.95. The RSES is a 10 item questionnaire that

the children fill out, with higher scores indicating higher self-esteem. The Cronbach's

alpha was 0.77 for this study (Choi et al., 2007). All three questionnaires were used for a

pre-intervention baseline and a post-intervention to determine if music helped reduce

aggression and improve self-esteem.

The music intervention group experienced 50 minutes of music therapy twice a

week for 15 weeks, and the control group received no structured intervention during the

study period. The music therapy consisted of four phases, utilizing music by singing

songs, analysis of libretto, and using and making instruments. The first phase

concentrated on building rapport, the second phase focused on accepting and

understanding emotions, the third phase observed if children expressed anger, and the

fourth phase focused on acceptance on changed status (Choi et al., 2007).

Results show lower scores in the K-CBCL and the CAAI from the pre-test

evaluation to post-test scores in both the music group and control group (p < 0.001). The

music group showed greater change from pre-test to post-test in aggression and self-

esteem. In the music group, the K-CBCL aggression was reduced from a median score of

34.0 pre-treatment to 17.0 post treatment, and a CAAI score of 51.0 to 36.0. Self-esteem

increased in the music group, with a pre-treatment score of 25.0 to a post-treatment score

of 29.5. The control group showed no change in self-esteem scores (Choi et al., 2007).

In conclusion, music therapy, along with alternative therapy can be used to help reduce aggression and increase self esteem in children. The study showed how music can be used to help children understand emotions and control anger (Choi et al., 2007).

Although music assists in relieving stress and brings on relaxation, a certain type of music may be more beneficial   College age people experience anxiety and stress, utilizing music to promote relaxation may decrease negative emotions. Labbe, Schmidt, Babin, and Pharr (2007) hypothesized that self-selected and classical music is more helpful in relieving stress than heavy metal music, or sitting in silence. The first hypothesis was that college students who are exposed to classical or self-selected relaxing music will show a decrease in anxiety, anger, sympathetic nervous system arousal, and a increase in relaxation than individuals exposed to heavy metal music or complete silence. The second hypothesis was that there would be positive ratings for relaxation when the students listened to the self-selected and classical music (Labbe et al., 2007).

Fifty-six students who attend a southeastern university participated in the study. The mean age was 22.54, with the majority being female. Participants were randomly placed into the self-selected music, classical music group, the heavy metal, or silence group. The students were placed into rooms where baseline physiological data were measured for 10 minutes. During the 10 minutes, the students took a mentally challenging test, and then completed the state anxiety and anger scales, and the Relaxation Rating Scale or RRS as pre-tests. After completing the questionnaires, the chosen music was played, or complete silence was present while physiological data were measured for 20 minutes. After the 20 minutes, the scales RRS and Music Rating Scale was administered for post-test results (Labbe et al., 2007).

Instruments used for the study included a questionnaire for demographic data, an EKG for pulse rate, two respirator sensors for respirations, and skin conductance sensors to measure perspiration. Instruments included the Relaxation Rating Scale (RRS), State-Trait Anger Expressive Inventory-2 (STAIX-2), State-Trait Anxiety Inventory-Form Y (STAi-Y), and a cognitive speed test to elicit a sympathetic nervous system response (Labbe et al., 2007).

The first hypothesis was accepted. Findings showed participants in the music group showed a reduction in anxiety and anger after listening to classical or self-selected relaxing music on the STAi-Y and the STAIX-s, and an increase in relaxation on the RRS, compared with students who listened to heavy metal or sat in silence. The second hypothesis was rejected. There were no significant differences in the self-selected group showing a positive relationship between self-selecting music and an increase in relaxation (Labbe et al., 2007).

Anxiety scores decreased from the pre-test to post-test scores in the silence group, self-select music group, and the classical music group. Anxiety dramatically decreased in the classical group, and anxiety actually increased in the heavy metal group in the post-test. Relaxation increased from pre-test to post-test in all groups, and anger decreased in all groups from pre-test to post-test. Physiological results show that heart rate and respiration decreased over time regardless of what type of music was administered or silence, however the classical/self-selected group showed a greater reduction in heart rate and respirations than the heavy metal group. Overall, the classical music group showed the most changes in physiological signs, with the heavy metal group showed the least (Labbe et al., 2007).

Labbe et al. (2007) concluded that certain types of music can yield a positive emotional state and reduce anxiety and stress. Classical music can reduce sympathetic nervous system arousal, anxiety, anger while increasing relaxation among college students.

Summary of Literature

Meta-Analysis: Music Therapy.

Gold et al. (2004) showed how music therapy can be used to treat a variety of mental illnesses among children and adolescents. Children and adolescents diagnosed with behavioral and developmental disorders, rather than emotional disorders, had results with the largest positive effect. Gold et al. (2004) also determined that utilizing a more eclectic and humanistic theoretical approach resulted with better outcomes.

Effects of Music Therapy: Mental Illnesses.

Hayashi et al. (2002) used music therapy to determine if it had an effect on patients suffering from schizophrenia. Hayashi et al. (2002) found that music therapy can be used to help improve negative symptoms associated with disease, the quality of life and interpersonal relationships among the patients. Along with helping patients with schizophrenia, Chou and Lin (2006) found that music therapy and guided imagery therapy helped patients suffering from Depression. Chou and Lin (2006) found it help improve inner emotions and alleviate depressed moods with all the subjects.

Ulrich et al. (2007) also used music therapy with patients suffering from schizophrenia. Ulrich et al. (2007) found that utilizing standard therapy, along with music therapy, helped patients improve negative symptoms associated with the disease, and to adapt to a social environment. Dingle et al. (2008) also discovered that utilizing

music therapy can help those suffering from drug abuse. Dingle et al. (2008) found that music therapy helped the patients feel part of a group by decreasing isolation and forming relationships.

Effects of Music Therapy: Anxiety, Depression, and Pain in Illness.

Music therapy can also be used to alleviate anxiety and pain with patients suffering from a terminal illness (Horne-Thompson & Grocke, 2008). The research showed that music therapy helped decrease anxiety, pain, and tiredness after attending a music therapy session. Nilsson et al. (2009) also wanted to determine if music therapy can be used to alleviate pain and anxiety. Nilsson et al. (2009) determined that music therapy was helpful in reducing pain and providing calmness in children who underwent a surgical procedure, but it did not relieve anxiety. Siedliecki and Good (2006) conducted a study with patients who were suffering from chronic pain in the back, neck or joints. The research determined that music therapy can be used as an intervention for pain, depression, power and disability among patients suffering from chronic pain (Siedliecki & Good, 2006).

Effects of Music Therapy: Pregnancy.

Pregnancy can be a fearful and stressful time for many women. Chang et al. (2008) conducted a study to determine if music therapy had an effect on stress, anxiety, and depression while pregnant. Chang et al. (2008) found that music therapy is helpful in reducing stress, anxiety, and depression in pregnant women. The subjects found music therapy was particularly helpful during bedtime, at rest, or while doing housework. Bauer et al. (2010) also conducted a study to determine if music therapy helped relieve stress associated with pregnancy, in particular antepartum patients on bed rest admitted

for complications. Bauer et al. (2010) determined that music therapy, in particular

relaxation music, helped antepartum patients have decreased stress.

Effects of Music Therapy: Behavioral Problems.

Music therapy can also be used to help increase self-esteem and decrease

aggression among children (Choi et al., 2007). The research conducted determined that

music therapy can be used to reduce aggression by understanding emotions and

controlling anger, and increase self-esteem. Labbe et al. (2007) conducted a study with

college students. The research used self-selected music by the subjects, classical music,

and silence, to determine if it had an effect on anxiety and stress. Labbe et al. (2007)

determined that students who listened to classical music had the largest decrease in stress

levels, while individuals who listened to self-selected music showed an increase in stress

levels.

Chapter III

Methods and Procedures

Introduction

      Music therapy is a controlled, noninvasive intervention to aid in the physiological,

psychological, and emotional stress of a patient under treatment of an illness or disease

(Choi et al., 2008). Patients with mental illnesses usually require multiple medications,

and are often hospitalized requiring intense therapy. Alternative therapy and other

interventions, such as music therapy, may bridge the gap between outpatient treatment

and hospitalization. The purpose of this study is to compare differences in two groups of

mentally ill patients, to determine if music therapy has an effect on depression, anxiety,

and relationships in mentally ill patients. This is a replication of Choi et al.'s (2008)

study to assess the effects of music therapy on mentally ill in an outpatient center.

Research Question

      1. Are there differences in depression, anxiety, and interpersonal relationships,

          between two groups of mentally ill patients, when one group receives

          traditional therapy and the other group receives music therapy?

Population, Sample, and Setting

      The study will take place in Fort Wayne, IN at The Carriage House, a community

outreach center assisting the mentally ill. The center provides group therapy and

recreation, while also assisting clients with employment, housing and an education. The focus of the Carriage House is to promote confidence, self-esteem and independence. The center currently has over 230 clients (The Carriage House, 2002). A sample of 30 clients will be obtained from the population with the help of the Carriage House staff who meet inclusion criteria.

Inclusion criteria are a diagnosis of a mental illness, the ability to concentrate for 60 minutes, the ability to fill out questionnaires, and the ability to participate in treatment for 15 weeks. The anticipated sample will include both men and women, between the ages of 20-50 years. The sample will be alternately assigned to a music therapy group or the control group. The most common diagnoses are schizophrenia, psychotic disorder, bipolar disorder, conduct disorder, and anxiety disorder.

Protection of Human Subjects

The study will be submitted for approval to the ethics committee of Ball State University's Institutional Review Board, and the Carriage House committee. The researcher will ask participants to sign a consent form, but no names will be used in the study's data. A caregiver or family relative will be present to sign consent forms with each participant. The researcher will compose a cover letter that has the purpose of the study, the treatment benefits, and the procedures that will take place. The risk to the study includes the inability to predict how the participants will react to the music therapy. A professional therapist will be available if needed. The cover letter will state that the participant's information will be kept private to protect anonymity. If participants are unable to complete the study, the participants may withdraw.

Procedures

After receiving approval by the Ball State University's IRB and the Carriage House committee, a meeting will be held with the Carriage House director, the researcher, and certified music therapists, to provide information regarding the details and purpose of the study. The researcher will present the cover letter to the director about the study at the Carriage House. This meeting will take place 1 month prior to the study's start date. The researcher will present the cover letters to each recreational group or therapy group available, 3 weeks prior to the study' start date. The researcher's intention is to reach all Carriage House attendants at the recreational/group therapy sessions, 3 weeks prior to the study's start date. The Carriage House music therapists who are willing to participate in the study will notify the director with names and contact information of patients.

Two weeks prior to the start of the study, Carriage House director will provide the researcher with the list of participants who meet the criteria to be included in the study. Information regarding the participant's gender, age, and mental illness diagnosis will be used to describe the sample. Following that meeting, the researcher will contact each participant and caregiver by telephone to set up a meeting to provide further instruction regarding the study. The researcher will meet with all participants and caregivers to build a rapport and answer any questions that may be present. The participants will meet one by one with the caregiver present to sign consent forms with the researcher. This first meeting will occur 1 week prior to start of the research study in the exact location and time of the research study.

The study will take place at The Carriage House during recreational activity time. The researcher will alternately place participants in the music therapy group or the

control group prior the study. Participants in the music therapy group (experimental group) will participate in 15 sessions of music therapy, lasting 60 minutes each session. Each session will be led by three certified music therapists. The control group will receive no additional treatment or structured therapeutic programs during this recreational time. To keep the control group engaged in the study, the researchers will contact the participants weekly to ensure commitment to the study. After the study is completed, the music therapist will provide a complementary music program for control group participants interested in music therapy.

All of the participants, in both the control group and experimental group, will fill out three questionnaires during the first week of therapy to establish a baseline of symptoms. The participants will fill out the same three questionnaires the last week of therapy, the 15th week. The music therapy intervention will consist of three phases, 5 weeks each, focused on improving symptoms of mental illness.

The music therapy group (experimental group) will participate in the music therapy intervention. The first phase will utilize singing, listening to relaxing music, and discussing favorite musical instruments to establish rapport with the participants and to help improve self-awareness. The therapist will assess attitude, frequency of participation, and frequency of eye contact, to measure rapport with the participants. During second phase, participants will use a music instruments, listen to relaxing music during a guided imagery experience, and sing to a favorite song or engage in song writing. The second phase will be aimed at increasing awareness of self-esteem and reducing depression and anxiety by encouraging the patients to express themselves. The third phase will encourage the participants to increase awareness of relationships and

collaborate with other participants in the group. The music therapist will provide live music or meditation music. The participants will collaborate together to express emotion by improvisation, song writing, or simply engaging in discussion.

Instrumentation

The study will include three instruments to provide outcome measurements (Choi et al., 2008, p. 568):

1. Beck's Depression Inventory (BDI): Beck et al. (1996), state the BDI is used to measure depression utilizing a 21-item self report questionnaire, using a 4 point scale, 0 (symptoms not present) to 3 (symptom is very intense). Beck et al. (1996) stated that recent concurrent validity was 0.71, construct validity was 0.91, and reliability of 0.93 with an internal consistency, alpha=0.91.

2. State and Trait Anxiety Inventory (STAI): Spielberger et al. (1983) stated the STAI is used to measure anxiety utilizing a 20-items assessing for trait anxiety, and 20-items assessing for state anxiety. The inventory uses a 4-point scale, ranging from "Almost Never to Almost Always." Spielberger et al. (1983) stated that evidence attests to the construct and concurrent validity of the scale. 0.86 to 0.95 are the scores for the internal consistency of the scale, and reliability scores have ranged from 0.65 to 0.75 (Spielberger et al., 1983).

3. Relationship Change Scale (RCS): Schlein and Guerney (1977) stated the RCS measures the quality of change in relationships with others and with self. It is a 27 item self rating questionnaire that uses a 5

point scale, ranging from "much less" to "much greater" when rating

change (Schlein & Guerney, 1977).

Design

A comparative descriptive design will be used for this research. Descriptive

designs observe phenomena and describe the behavior without manipulating it in any

way. The purpose is to gain more information about the field or phenomena to better

understand its characteristics. According Burns and Grove (2009) comparative

descriptive designs are used to compare descriptive data that is obtained from two groups.

The descriptive data is then compared in quantitative and outcomes in the study.

Intended Methods for Data Analysis

Methods for data analysis will include an unpaired t-test to evaluate

demographical data between the two groups, and analysis of covariance (ANCOVA) for

outcome measurements. The t-tests is used to measure the mean and standard deviation

of quantitative data to determine if there is a significant difference between the data.

ANCOVA is used to examine the effect of treatment apart from influence from

confounding variables, such as age, education, and social class. The use of ANCOVA

allow researchers to use pre-test and post-test designs to determine differences that occur

on the two tests (Burns & Grove, 2009).

Summary

This chapter describes the methods and procedures that will be used in the study.

Music therapy will be tested on individuals who have a diagnosed mental illness to

determine if it has an effect on their depression, anxiety, and relationships. Data will be

collected using three instruments, Beck's Depression Inventory, State and Trait Anxiety

Inventory, and the Relationship Change Scale. The data will be analyzed using analysis

of covariance (ANCOVA) for outcome measures. This study will be a replication of

Choi et al. (2008) to determine if music therapy can be utilized as outpatient treatment for

psychiatric patients.

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