

THERAPEUTIC EFFECTS OF MUSIC THERAPY ON ANXIETY
AND QUALITY OF LIFE FOR CHRONICALLY ILL ADULTS WITH MENTAL ILLNESS

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Abstract

RESEARCH SUBJECT: Therapeutic Effects of Music Therapy on Anxiety and Quality of Life for Chronically Ill Adults with Mental Illness

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Mental Illness impacts many individuals, families and communities. Treatments for chronically mentally ill individuals include a variety of medications and behavioral therapies. Alternative therapies can also help reduce anxiety and improve social behavior. Music therapy has been identified as one method to reduce anxiety, resulting in an increased quality of life. The purpose of this study is to examine the impact of music therapy on social anxiety and quality of life for individuals who are chronically mentally ill. This is a replication of Grocke, Bloch and Castle's (2009) study. The study is based on Group Music Therapy (Bloch & Crouch, 1985). The anticipated sample will include 500 outpatients being treated in a local mental health facility in MD. The WHOQOLBREF Quality of Life Scale, the Social Interaction Anxiety Scale and the Brief Symptom Inventory will be used to collect data. Semi-structured interviews will also be conducted with focus groups. Findings will provide insight about the impact of music therapy as an alternative treatment to reduce anxiety and improve quality of life for chronically ill individuals.

Chapter I

Introduction and Background

Mental illnesses, or psychiatric disorders, are often misunderstood, and consequently not managed well in the United States (U.S.) healthcare system. According to the National Institute of Mental Health (NIMH), nearly one in four persons (26.2%) over the age of 18 in the U.S. suffers from a diagnosable mental illness (2008). Although widespread, the cases of chronic and severe mental illness are limited to 1 in every 17 (6%) individuals (NIMH, 2008). Rosenberg, CEO for the National Council for Community Behavior Healthcare, made it clear that U.S. mental health, and addiction treatment systems are continually underfunded, a trend that will worsen as state and federal monies are cut (National Council for Community Behavior Healthcare, 2010). In a congressional testimony Rosenberg reported that individuals suffering from mental illness die nearly 25 years sooner than healthy counter-parts.

According to the National Alliance on Mental Illness (NAMI) (2010), without adequate treatment the economic cost of mental illness is more than 100 billion dollars each year in the U.S. In Indiana, community-based mental health centers utilize over \$445 million federal, state, and county funds to treat over 116,000 mentally ill individuals. This approach helps reduce length of hospital stays and unnecessary incarceration (Indiana Council of Community Mental Health Centers, 2010.) Access to treatment however is an issue. A report issued by NAMI stated that treatment of mental health is paralyzed.

Many mentally ill individuals go without treatment until crisis. Upon reaching crisis, mentally ill individuals cannot find psychiatric inpatient facilities, treatment services, or community based programs easily accessible.

A report issued by the National Council for Community Behavior Healthcare stated nearly 16% of jail inmates have a diagnosable mental illness, many of which go untreated at a cost of nearly 46 dollars per day (2010). The Ohio Department of Mental Health (n.d.) reported that individuals who are depressed are twice as likely to miss work, and are seven times more likely to be less productive than a non-depressed employee. Untreated mental illness is adding to the catastrophic costs of care.

Untreated mental illness can also result in substance abuse. Many mentally ill individuals are addicted to drugs and alcohol. According to researchers at Iowa State University (2009), substance abuse programs are economically beneficial. Each program implemented resulted in nearly a 10 dollar return rate for every \$1 invested. The economic impact of addiction must be taken into account when considering the financial costs of mental illness. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), \$7-\$20 in crime costs, incarceration, emergency room care, productivity, and premature death can be prevented by every \$1 dedicated to drug and alcohol prevention (2010).

Although more research is being conducted on how to effectively treat the mentally ill, individuals who suffer from mental illnesses are still isolated and stigmatized because of symptoms. Some medications used to treat mental illnesses have been used for more than 50 years, such as Thorazine and Haldol. A newer classification of atypical antipsychotics is now more commonly used, and includes Risperidal, Zyprexa, Geodon,

Abilify and Invega (NIMH, 2008). However, the medications can cause side effects such as dizziness, blurred vision, weight gain, and an increased risk for high cholesterol and diabetes. Side effects can worsen mentally ill individuals' ability to adapt socially (NIMH, 2008).

Background and Significance

Music therapy came into play during more recent times. During the 1960's many individuals were de-institutionalized due to changing state and federal policies, and the increasing use of new medications, such as thorazine (Leupo, n.d). Today many mentally ill individuals are treated primarily on an out-patient basis using a combination of medication therapy, alternative therapies, and counseling.

Music as a therapy for mental health is as old as Aristotle and Plato, and was used in Ancient Greece and Rome. Congreve (1570-1629) in *The Mourning Bride* play (1697) believed music could soften rocks, bend knotted oak, and charm the most savage beast. Through the years music has been found to reflect emotions, often describing the events of the time. During the 1600-1700's music was traditionally related to religion. Psalms and hymns were often sung. During those years many colonists also sang nursery rhymes and political songs. The event of a war also stimulated a change in music styles and new songs were written. It was during the Revolutionary War when folk music and ballads became popular.

The Civil War and Reconstruction period (1860-1900) introduced many songs which are still sung today, such as *Amazing Grace* and *He Leadeth Me*. During this period gospel, folklore, and political songs were popular. During World War I music was used for humor, propaganda, and persuasion (American Popular Music, 2009).

Music therapy has been used as an alternative treatment option for individuals who suffer from mental illnesses since 1939. Music therapy for healing began during World War II when musicians were invited to play for patients who suffered from battle inflicted injuries (American Music Therapy Association, 2009). It was during that time that doctors and nurses became aware that music had an effect on veterans' psychological, physiological, cognitive, and emotional states (University Hospitals of Cleveland: Music as Medicine, 2010). As therapeutic results began to be more evident within hospitals a need for the development of music therapy became apparent.

Music as therapy has an ongoing history based on education and organizations. It was in 1944 that the Michigan State University founded the first music therapy program. Subsequently the National Association for Music Therapy was founded in 1950. Later the American Association for Music Therapy was founded in 1971. In 1985, The World Federation of Music Therapy (WFMT) was formed in Genoa, Italy. WFMT is the international organization of music therapists worldwide. In 1998 the National Association for Music Therapy merged with The American Association for Music Therapy, and is now called American Music Therapy Association. The purpose of this association is to develop the use of music therapy in various settings while advancing education, training, professional standards, and research in support of the music therapy profession (American Music Therapy Association, 2009).

Music therapy as a treatment option is a method of helping the mentally ill communicate more effectively, show self-expression, participate in group activities, and improve overall quality of life (Choi, Lee, & Lim, 2008; Hayashi, Tanabe, Nakagawa, Noguchi, Iwata, & Koubuchi, 2002; Silverman, 2009). Persons with mental illness often

feel hopeless and isolated due to the negative stigma that mental illness portrays in the American culture (SAMHSA's Resource Center to Promote Acceptance, Dignity, and Social Inclusion Associated with mental health (ADS Center), 2010). Music therapy is a bridge between isolation and participation. It was also determined that music therapy alone, or along with opiate medication, can help alleviate negative aspects of chronic pain depression, helplessness and overall disability (Mitchell, MacDonald, & Knussen, 2008).

Most researchers are optimistic about the effects of music therapy with individuals who suffer from mental illnesses. Research has demonstrated that individuals improve after being treated with music therapy (Chou & Lin, 2006; Choi, Lee, & Lim 2008; Gold, Voracek, & Wigram, 2004; Grocke et al., 2009; Ulrich, Houtmans, & Gold, 2007; Ledger & Baker, 2006; Mitchell et al., 2008; Silverman, 2006, 2009). Two studies (Gold et al., 2004; Ulrich et al., 2007) found adult patients improved in social contact, interpersonal communication, and overall behavior who suffer from schizophrenia, and children who suffer from behavioral and social problems. An experimental study (Siedliecki & Good, 2006) found that a group of patients with schizophrenia, bipolar, and conducts disorder receiving music therapy, versus routine therapy, improved in negative symptoms, such as anxiety and depression. The authors concluded that music therapy is effective as a treatment.

Music therapy sessions using group therapy provide mentally ill individuals with a method of self-expression and sense of belonging (Silverman, 2006, 2009). Silverman (2009) compared group-based psychoeducational music therapy to psychoeducation, and determined that individuals who took part in music therapy had a slightly higher score in the areas of helpfulness, satisfaction with life, enjoyment, and psychoeducational

knowledge. Individuals participating in group music therapy were more apt to: verbalize self and cognitive insight; more frequently discuss unique situation than individuals not participating in group music therapy. Silverman (2009) also determined individuals in group music therapy gave more frequent, more insightful answers to therapists' questions than individuals in the control condition.

Therefore, more research should be implemented to determine the effectiveness of treatments for mentally ill individuals to adapt to the social and cultural demands of society. This study builds in the work of Silverman (2006, 2009) focusing on group music therapy for schizophrenic individuals.

Statement of Problem

Many individuals with mental illness are treated with medications, psychotherapy, and hospitalization. However, many of these individuals experience limited effectiveness of traditional treatment and have increased anxiety. Following treatment individuals continue to have difficulty developing relationships and developing coping skills (Grocke et al., 2009). Quality of life declines with isolation and lack of treatment.

Purpose of Study

Music therapy can influence quality of life and help decrease social anxiety for mentally ill individuals (Grocke et al., 2009). This study will replicate Grocke et al.'s work in an attempt to better understand the effect of group music therapy on community dwelling adults with chronic and severe mental illness.

Research Question

1. Will group music therapy enhance the quality of life in individuals with severe and enduring mental illness?
2. Will group music therapy help reduce social anxiety?

Definition of Terms

Quality of Life: Conceptual.

Based on the variables evaluated in the WHOQoLBREF; quality of life is characterized by being satisfied with overall health, having the opportunity to enjoy leisure activities, receiving support from friends and family, and experiencing minimal life-inhibiting pain (Murphy, Herrman, Hawthorne, Pinzone & Evert, 2000).

Quality of Life: Operational.

The WHOQoLBREF is a 26-item Likert scale which was developed to assess individual's perception of life. The scale considers the individual's culture, values, personal goals, concerns and standards (World Health Organization, 1993).

Group Music Therapy: Conceptual.

A series of meetings other mentally ill individuals, lead by a music therapist, in which musical instruments are played, songs are written and songs are sung. Group music therapy promotes joy, teamwork, and overall quality of life (Grocke et al., 2009).

Group Music Therapy: Operational.

Five groups of 16 mentally ill individuals that meet once a week for 10 weeks. Each meeting will be 1 hour long. During these meetings individuals will play musically instruments, write song, and sing songs.

Enduring Mental Illness: Conceptual.

According to Grocke et al. (2009) enduring mental illness is characterized by chronically mental ill individuals. These individuals often live in the community, frequently experience lack of family support, unemployment, uncertain future, and lack of social network.

Enduring Mental Illness: Operational.

Symptoms of mental illness were evaluated using the Brief Symptoms Inventory (BSI) (Derogatis & Melisaratos, 1983). BSI is a 53-item scale which is used to detect sets of psychiatric symptoms. The score of the BSI is a global rating, called Global Severity Index. The Global Severity Index is a scoring system which determines severity of psychological distress (Pearson, 2009).

Social Anxiety: Conceptual.

According to Grocke et al. (2009) individuals with enduring mental illness often exhibit social withdraw, not having close friends, and being unable to integrate into society. Social anxiety decreases communication and interactions with others. Social anxiety increases the risk of suicide in individuals with enduring mental illness and decreases the success of recovery.

Social Anxiety: Operational.

The Social Interaction Anxiety Scale (SIAS) is a 20-item scale which evaluates individuals concerns when interacting social with others. The scale addresses speaking with those in authority, making eye contact, greeting strangers, feeling tense when in a social setting, having difficulty making friends, and feeling awkward when in groups (Marrick & Clarke, 1998).

Organizing Framework

The organizing framework for this study is based on a previous work on group music therapy (Bloch & Crouch, 1985). The study (Bloch & Crouch) determined that one a function of music therapy is to bring mentally ill individuals together to enhance socialization, encourage musical and verbal interaction, and to assist in building relationships. The concept of group music therapy provides individuals with enduring mental illness with an opportunity to engage in social interaction where interpersonal skills are required, and allows for the group to pursue a common goal (Bloch & Crouch, 1985).

Limitations

This study is limited by the small sample size. The study is being conducted through only one mental health outpatient clinic. Individuals may not answer questionnaires honestly to avoid judgment.

Assumptions

1. Individuals with enduring mental illness often experience decreased quality of life and social anxiety.
2. Non-traditional therapies such as music and art may help decrease the severity of symptoms.
3. Mentally ill individuals remain socially isolated and experience anxiety despite receiving treatment.

Summary

Many individuals suffering from an enduring mental illness receive traditional treatment. However, these individuals often continue to report feelings of decreased

overall quality of life and social anxiety. Group music therapy has been shown to increase quality of life and assist mentally ill individuals in becoming less anxious in social settings. This study will replicate a study by Grocke et al. (2009). The purpose of this study is to work with individuals with enduring mental illness in an attempt to better understand the effect of music therapy on adults with chronic and severe mental illness.

One form of treatment outside of medications and traditional therapy is alternative therapies. Certain alternative therapies, such as creative therapies of music and art, helped relieve symptoms of mental illness in persons unable to express emotions in other ways (Mental Health America, 2010). Between 70% and 90% of individuals receiving a combination of pharmacological and psychosocial treatments have a significant reduction in negative symptoms, and overall improvement in quality of life (NAMI, 2010). Therefore it is important to pursue the effects of alternative therapies on individuals with mental illnesses. This study will focus on the use of music therapy as an alternative treatment based on the work of Grocke et al. (2009).

Chapter Two

Review of Literature

Introduction

Music therapy has assisted individuals with mental illness to have a sense of control over life, to problem solve, and resolve conflicts. Music leads to healthier and stronger interpersonal relationships (American Music Therapy Association, 2009). Music therapy can improve quality of life and strengthen interpersonal relationships (Grocke et al., 2009).

The purpose of this study is to work with individuals with enduring mental illness in an attempt to better understand the effect of music therapy on adults with chronic and severe mental illness. In Grocke et al.'s study, music therapy sessions consisted of 10 sessions lasting 1 hour. The sessions included song singing, song writing and improvisation, culminated in each group recording original song/s in a professional studio (Grocke et al., 2009). This study is a replication of Grocke et al.'s (2009) study.

Organization of Literature

The literature review consists of studies which address music therapy in patients with mental illness. The literature review is organized into six sections: (a) organizing framework, (b) meta-analysis of music therapy, (c) effects of music therapy on pain symptoms and quality of health, (d) patients' perceptions of psychoeducation therapy for other illnesses, and (f) music therapists' perceptions of music therapy.

Organizing Framework

Music therapy is the organizing framework for this study. Music therapy is a systematic process guided by a therapist to assist individuals in health promotion, through the use of musical experiences and interpersonal relationships which develop through the course of therapy. Music therapy is perceived as a psychotherapeutic method that helps individuals express emotions and issues which are not expressed using words alone (Gold et al., 2004). Music therapy has been used as a type of psychosocial therapy in various settings since World War II. Music therapy is generally led by a music therapist and can be conducted in individual or group settings. The therapy usually involves singing, song writing, and playing instruments followed by discussion (Grocke et al., 2009).

In mental health settings, group music therapy has been used because individuals suffering from mental illness in a community setting often live in isolation and have an uncertain future. Many do not have family support or a social network to help to maintain quality of life. Due to social isolation, many with a severe and enduring chronic mental illness have decreased motivation for therapy, and an increased risk for suicide (Grocke et al., 2009). Participating in group music therapy acts as a therapy which helps the participants build lasting friendship, and assists in increasing the quality of life. While participating in music therapy participants should continue to receive traditional therapies such as medications and counseling.

The framework on which this study is built was designed by Grocke et al. (2009). Bloch and Crouch (1985) conducted research to demonstrate that group music therapy has the potential to be therapeutic for people with severe and chronic mental illness. The study by Grocke et al. (2009) “was a 10-week music therapy project which was designed to

determine whether music therapy influenced quality of life and social anxiety for people with a severe and enduring mental illness living in the community” (p. 90). The participants attended hour long sessions for 10 consecutive weeks. During the sessions, participants sang songs and wrote songs as a group. Musical instruments were also used. The participants were able to record songs in a professional music studio. During the last week of therapy the final copy of the groups’ CD was distributed. A focus interview was conducted with groups to determine reactions to therapy. It was found that people attending group music therapy sessions had increased verbalizations and shared more interpersonal interactions, which resulted in increased socialization (Grocke et al., 2009).

The framework used by Grocke et al. (2009) is appropriate for this study because music therapy addresses mental illness, specifically individuals who have severe and enduring mental illness, and live in a community setting.

Meta- Analysis: Music Therapy

A literature meta-analysis was conducted by Gold et al. (2004) that systemically reviewed 11 previous studies that examined the overall efficiency of music therapy for children and adolescents with mental illness. An additional aim was to determine how the size of the effect was influenced by other factors, such as clients’ age, music therapy approach, type of outcome, and the child’s diagnosis.

Following the literature review using multiple databases, including Medline, PsychInfo, and the Cochrane Library, along with multiple Music Therapy and related journals, 11 studies met the criteria that Gold et al. (2004) had included for the meta-analysis. The studies were conducted between 1970 and 1998. Eight were conducted in the United States, while the other three were conducted in Austria, Germany, and the United

Kingdom. Diagnoses within the studies ranged from conduct disorders to developmental disorders. Music therapy was provided in both individual and group sessions. The number of subjects included in each of the included studies ranged from 8 to 26.

During the analysis, data were extracted on child age and gender, type of intervention, type of comparison group, type of diagnoses, and type of outcome categorized (Gold et al., 2004). The effect size was calculated as standardized mean differences using the Cohen's d at post-test and were corrected for any post-test difference which were present. The average effect of music therapy following Cohen's (1988) (as cited in Gold et al., 2004) benchmarks for inturrretations revealed a significant effect ($p = 0.0001$). The data should be used only as an estimate. The weighted averages of the various mental illnesses suggested that individuals who are a part of music therapy do improve over time, while individuals in the control group showed no improvement. Statistical heterogeneity was absent among the included studies which suggested the effect size was accurately representing all conditions. As a results the influence of moderator variables were examined.

Music therapy had a more positive effect on behavior and developmental disorders than on emotional disorders. Gold et al. (2004) demonstrated that music therapy effects are more enduring when more sessions are provided. Music therapy continued to show the largest effect size within all included studies. Measures for the children's behavior, which included self-concept, social skills, development, and problem behaviors were assessed, showed that overt behavior is easier to treat than subjective experiences. Due to the subjective nature of this measure the amount of error may have been increased in the meta-analysis.

In conclusion, Gold et al. (2004) noted that findings from the meta-analysis were consistent with previous similar studies. Overall music therapy was an effective form of treatment for children and adolescents with a wide range of mental illness diagnoses.

Many studies have examined the effects of music therapy on symptom management of schizophrenia. This study was a meta-analysis of three prior studies examining the effects of music therapy on schizophrenia. Ulrich et al. (2007) completed this analysis to examine how other studies reported music therapy in combination with traditional therapy and assisted schizophrenics in interactions with others. The authors also examined how music therapy helped to reduce negative symptoms of schizophrenia and increase quality of life.

The population in Ulrich et al.'s (2007) study included inpatients in an acute-care psychiatric hospital in Germany with 1,100 beds. There were 37 subjects in the study, 20 men (54%) and 17 women. Each had a psychotic disorder which met the criteria for the study by either having a diagnosis code of ICD-10 or F20-F29. The average age was 38 years. Patients who had acute psychotic symptoms, or who were unable to function in a group setting were excluded.

There were three primary instruments used in Ulrich et al.'s (2007) study for the evaluation of the subject's interactions with others. A 20 question self-assessment, GieBentest (GTS) and a similar assessment tool (GTFm) were completed as a result of observing the participants during therapy sessions. The assessments were completed by each group prior to the start of therapy, and again at the end of the 8 month period during which the study took place. The Cronbach's alpha for the assessment tool was above 0.75. For the evaluation of negative symptoms, a Scale for the Assessment of Negative

Symptoms (SANS) was used, again by both the subjects and two nurses. Cronbach's alpha for SANS was 0.70. For the evaluation of the quality of life the Scale for Mental Health (SPG) was used. This scale included 76 questions from seven subscales used to assess quality of life. Cronbach's alpha for SPG was 0.61.

Ulrich et al. (2007) found that music therapy facilitates interactions in a group and helps reduce the severity of negative symptoms. The fact that music therapy could increase the quality of life for schizophrenics was inconclusive. In conclusion, Ulrich et al. (2007) determined that music therapy was effective in helping reduce negative symptoms, and in increasing interpersonal skills and quality of life among schizophrenics.

Effects of Music Therapy: Pain Symptoms, Depression, Agitation and Quality of Health

Music therapy has not only been therapeutic in mental illness, but also in relief of pain symptoms and overall quality of health. The purpose of the clinical study (Hayashi et al., 2002) was to examine the efficiency of group music therapy for clients who were diagnosed with schizophrenia or a schizoaffective disorder.

The study took place at the Tokyo Metropolitan Matsuzawa Hospital, which is a large psychiatric hospital serving the central region of Tokyo. The hospital has 30 wards, each specializing in a specific function. The sample (Hayashi et al., 2002) included female long-term inpatients. Inclusion criteria were based on diagnosis using DSM-IV, along with the absence of mental retardation and unequivocal organic cognitive impairment. Seventy-four women were approached for inclusion; only 89% of patients gave written consent to participate. The mean age of the therapy group was 66.1, while the waiting group was 69.0 years old. The duration of the subjects' current cumulative hospitalizations in days was as follows: therapy group 4,664 and the waiting group 7,817.

Hayashi et al.'s (2002) music therapy group attended 15 weekly sessions that lasted for 1 hour each. The sessions were conducted by seven different female music therapists. During the sessions participants sat in a circle and listened to the therapist play music on an instrument; including piano, violin, clarinet and flute. As the therapy sessions progressed, singing songs and playing games using music were slowly introduced. By the end of the therapy sessions the women were involved in playing music using percussion bells, tambourines, triangles and castanets.

Instruments in the study (Hayashi et al., 2002) included Positive and Negative Syndrome Scale (PANSS). The reliability of the Japanese version of the PANSS was favorable. The Quality of Life Scale (QLS) has 21 items and four subscales which have a 5 point Linkert response set. The QLS evaluates the patient's quality of life based on deficit symptoms. The reliability was studied by two raters based on the interview of 20 of the included subjects.

Staff at the hospital also completed a 10 item scale during the course of study which evaluated ward-life activity. The results confirmed acceptable validity and reliability. Results of an interrater reliability study of the QLS were confirmatory (Hayashi et al., 2002). The validity of the Ward Life Scale was significantly correlated with the total score of the REHAB scale with a Pearson's correlation coefficient ($r = 0.72$, $p = <0.001$) (Hayashi et al., 2002). There were significant differences between the pre-session assessment and the post-session assessment in the scores of the PANSS, with the waiting group showing more severe symptoms ($p = <0.05$). Music therapy greatly benefited negative symptoms of individuals who were schizophrenic or have a schizoaffective disorder. Findings from the QLS scale determined music therapy subjects had less social

withdrawal ($p < 0.01$), and felt more empathy towards others ($p < 0.05$). The follow up assessment using the Ward Life Scale showed a decline in positive effects of music therapy.

Hayashi et al. (2002) concluded that music therapy may improve negative symptoms of schizophrenia, and help improve over-all quality of life. However, the follow up assessment showed a decline in the positive effects of music therapy. According to Hayashi et al. “it is necessary to seek and test new methods for assessing the effects of musical therapy” (p. 192). Studies have shown that music improves the quality of life in schizophrenics.

Music therapy has not been well established as a treatment for chronic non-malignant pain. Siedliecki and Good (2006) completed a study to test the levels of power, pain, depression and disability when influenced by music. The researcher compared the effects of subject-preferred music to researcher-preferred music based on the results of daily self-assessment. Power was used as a dependent variable and evaluated in relationship to pain, depression, and disability (Siedliecki & Good, p. 554). Three hypotheses were tested in the study. Hypothesis 1 posed that individuals with chronic non-malignant pain, who listened to music for 1 hour each day, would have less pain, depression and disability than individuals who did not listen to. Hypothesis 2 posed that individuals who listened to music with a pattern would have more power and less pain than individuals who only listened to standard music. Hypothesis 3 posed there would be no differences among individuals who listened to music, regardless of the type, and individuals who listened to no music, with power as a mediating factor. The framework was Roger’s Science of Unitary Human Beings and Barrett’s Theory of Power.

The sample included 60 individuals between 21-65 years old. The majority were females (77%), with a mean age of 49-68. Over half were African Americans. The sampling criterion included the amount of time the participants had been living with chronic pain. Duration ranged from 6 months to 30 years. The initial cause of pain was considered, as was the location of pain. The pain score rating was recorded between 0-10. Siedliecki and Good (2006) conducted the study using two different music groups and a control group. Each group had an equal number of participants and treatments were comparable.

Siedliecki and Good (2006) used three measurements to evaluate each of four variables. Pain was measured by the McGill Pain Questionnaire short-form, which had an alpha coefficient of 0.84. Depression was measured by The Center for Epidemiological Studies Depression Scale, which has a reported alpha reliability of 0.85 (Turk, 1993). Disability was measured by the Pain Disability Index which had alpha values ranging between .079-0.87 according to previous studies (as cited in Siedliecki & Good, 2006).

The findings of Siedliecki and Good's (2006) study were discussed in relation to each hypothesis. For hypothesis 1, the results showed statistically significant effects ($p = 0.001$) of music that provided more power and less pain, depression, and disability for the experimental group. The type of music showed no significant differences in the results among the two music groups, so hypothesis 2 was rejected. For the third hypothesis, there was no significant difference in pain, disability and depression power between music listening groups and non music listening groups when power was a controlled variable.

The conclusions from Siedliecki and Good's (2006) study were that chronic non-malignant pain is a major health problem, and despite the use of multiple medications,

many pain sufferers do not find relief. Music is safe, inexpensive and accessible for patients to use, and can be self-administered based on the patients taste in music. Music helps decrease pain, depression and disability, while helping to increase power.

Music therapy has been successful for individuals with a wide variety of illnesses, including mental illnesses. However, many research studies have failed to examine the long term effects of music therapy. The purpose of Ledger and Baker's (2006) study was to address the limitations of many earlier studies by having a larger sample size, and by using a control group. Ledger and Baker (2006) sought to investigate the long term effects of music therapy in individuals with Alzheimer's disease, specifically the frequency and severity of agitation.

Ledger and Baker (2006) included 13 nursing homes in Queensland and Victoria. Each of the chosen nursing homes offered a mixture of high and low levels of nursing care and were either community, church, or privately owned facilities. Ledger and Baker's (2006) study was a longitudinal, repeated measure design with an experimental group and a control group. A sample of 60 participants was included. Inclusion criteria were; (a) primary diagnosis of Alzheimer's disease type dementia, (b) stage 4, 5, or 6 on the Global Deterioration Scale (GDS), and (c) cognitive impairment evident upon Mini-Mental Status State Examination (MMSE) or Mental Status Questionnaire (MSQ) administration. Individuals with poor health who were unlikely to complete a year-long study were excluded from the study. The ages of the participants ranged from 71 to 96 years of age, most participants were female. Some of the participants also had psychiatric disorders, including depression and schizophrenia, as well as Alzheimer's disease (Ledger & Baker, 2006).

The participants in the experimental group attended weekly sessions of music therapy for at least 42 weeks within 1 year. Music therapy sessions lasted 30 to 45 minutes, and were conducted by a qualified music therapist. Each session had 2 to 10 participants, and was held at a consistent time in accordance to the participants' schedule at the nursing home (Ledger & Baker, 2006). The control group did not participate in music therapy sessions and continued to receive nursing care as usual.

The agitation levels of the participants were measured prior to the beginning of the study, and again at 3, 6, 9, and 12 months (Ledger & Baker, 2006). The levels were measured using the Cohen-Mansfield Agitation Inventory (CMAI) long form. The CMAI is a scale used to measure 29 agitated behaviors. The scale subdivided behaviors into four sub-categories including: verbal non-aggressive behaviors, verbal aggressive behaviors, physical non-aggressive behavior, and physical aggressive behavior. CMAI showed high internal consistency reliability ($r = >0.82$), test-retest reliability ($r = >0.97$) and high inter-rater reliability ($r = .8$) (Ledger & Baker, 2006). In addition to completing the CMAI, the music therapist leading the groups kept a log of objective behavior changes of participants both pre and post session. Within the logs only noticeable changes were recorded using the CMAI descriptor as a guide.

The CMAI was analyzed by totaling the scores and subcategory scores for each participant at each of the five evaluation times. The scores were "calculated by assigning values to the frequency rating for each behavior" (Ledger & Baker, 2006, p. 333). A rating scale ranging from 0 = "never" to 6 = "several times an hour" was used.

Following the totaling of the scores a repeated measures multivariate analysis of variance was completed to test for differences between the control group and the experimental group for the range, frequency, and severity of agitation over time in the participants.

The results of Ledger and Baker's (2006) study were reported in three different categories: range and frequency of behaviors, severity of behaviors, and therapists' observation. The range and frequency of agitated behaviors were significantly higher ($p < 0.05$) prior to the start of the study for the control group. Throughout the course of the study CMAI results fluctuated from one data collection point to the next within the experimental and control groups. The highest level of agitation for the experimental group was at time-point 4, while the control group had the highest level at time-point 3. Overall there were no significant differences in the range and frequency of agitated behaviors displayed over time in either groups (Ledger & Baker).

The severity of behavior in the experimental group was more stable for the subcategory of verbal aggressive behavior, which was therefore focused upon in the study. There were no significant differences reported between the experimental group and the control group in the display of the four types of agitation over time (verbal non-aggressive $p = 0.57$, verbal aggressive $p = 0.45$, physical non-aggressive $p = 0.44$, and physical aggressive $p = 0.38$). A univariate test did show less verbal aggressive behavior over time in the experimental group ($p < 0.05$) (Ledger & Baker, 2006). Logs kept by the music therapists were evaluated prior to music therapy session and again following the conclusion of the sessions. Prior to participation in music therapy most participants were noted to wander, fidget, insult others, made anxious statements, complained, asked repetitive questions, and yelled. Following participation in music therapy these types of

behaviors lessened and often immediately following music therapy the participants remained less agitated (Ledger & Baker).

In conclusion, Ledger and Baker (2006) determined there were no significant changes in range and frequency of agitated behaviors displayed over time for either group. There were also no significant differences in any of the four subtypes of agitation. The results indicated that the effects of music therapy in the agitation levels of individuals with Alzheimer's disease are only short term.

Music therapy, along with guided imagery, has been helpful for individuals experiencing depression. Chou and Lin (2006) conducted research to explore the experiences of outpatient mental health clients who were suffering from depression and undergoing guided imagery and music therapy (GIM). Therapy sessions were conducted in a manner suggested by McKinney (2002), and Laurie (2006) (as cited in Chou & Lin, 2006) sessions consisted of three phases: (a) conversation between the subject and therapist discussing topics such as recent problems and the current emotional state while ambient mood music was played in the background, (b) introduction period, where physical relaxation was reached through exercises while light music was played, and (c) a music listening period. During which the subjects were guided through imagery.

The research took place at a psychiatric outpatient clinic in a medical center in southern Taiwan. Subjects were recruited through physicians' referrals, and by advertising in the clinic. Inclusion criteria for the study were: diagnoses of depression by a psychiatrist, attending regular appointments, and continuing medication therapy. All individuals had completed high school or higher, had no difficulty with verbal communication, were between 19-50 years of age, and had scored greater than 24 points

on the Mini-Mental State Examination. Prior to beginning therapy the subjects completed The Beck Depression Inventory (BDI), which assessed the severity of depression being experienced (Chou & Lin, 2006).

Twenty-four to 48 hours following therapy sessions, a semi-structured phone interview was conducted for 30 to 40 minutes. During this interview the theme of the most reflective experience during the therapy session was discussed (Chou & Lin, 2006). The interviews were recorded, and later transcribed verbatim into writing by one of the researchers. Data analysis was completed following the transcription which determined credibility. The consistency was also determined by two coders ($r = 0.81$).

After interviewing five different subjects, following eight therapy sessions, there were 40 interviews from which findings were formed. Scores from The Beck Depression Inventory results were between 10 and 56. "A score of 9 or below indicated depression, remitted 10-17 indicated mild depression; 18-29 indicated moderate depression; and over 30 indicated severe depression" (Chou & Lin, 2006, p. 97). Findings from GIM were grouped into five themes: (a) leisurely wandering in natural sceneries; (b) creation of surreal virtual surrounds; (c) recollection of past life experiences; (d) submersion in thematic music melodies; and (e) experiencing various physical relaxation events. Many of the subjects reported feeling more relaxed, peaceful about past situations, excited, free of headaches and various body pains, and able to sleep after fighting insomnia.

Only 21.8% of the subjects credited the experiences to the melody resulting in physical relaxation inspired by the music, while 78.3% gave credit to guided imagery.

The authors concluded music lead to the most prominent imageries, with classical music being best suited to bring to mind images (Chou & Lin, 2006). Music assists with depression by using GIM.

Choi, Lee and Lim (2008) examined the effects of group music therapy on depression and anxiety in mentally ill clients. The purpose was to test the effectiveness of group music therapy on improving depression, anxiety, and relationships in psychiatric patients.

Choi et al. (2008) conducted the research with inpatients in a psychiatric hospital in South Korea. The study included 26 patients who were non-randomly placed in either the control group (five men and eight women) or the music therapy group (five men and six women). The diagnoses for the patient in the music therapy group included schizophrenia, psychotic disorder, bipolar disorder, and conduct disorder. The diagnoses for the control group included schizophrenia, psychotic disorder, bipolar disorder, anxiety disorder and mental retardation. The two groups were not significantly different in age or gender. Choi et al. had full participation of all 26 patients.

During the course of the study Choi et al. (2008) administered questionnaires to measure each of the four variables being studied. Depression was measured using Beck's Depression Inventory. Anxiety was measured using State and Trait Anxiety Inventory. Relationships were measured using the Relationship Change Scale. The measures were administered prior to the music therapy treatment, and again following 15 sessions of music therapy.

The music group intervention significantly improved scores for depression, state and trait anxiety, and relationships ($p = 0.001$) compared to the control groups. Also noted

was greater improvement in the severity of symptoms in the music group compared to the control group. Along with having decreased symptoms individuals in the music therapy group showed an increase in self-confidence and feelings of worth (Choi et al., 2008).

In addition to the use of music therapy, art has been widely used in hospital a setting to help reduce pain, and music has been used to help decrease pain perception. A study completed by Mitchell et al. (2008) investigated the effects of music and art on pain perceptions. The authors conducted this study to test visual and auditory distractions from pain as a reliable method of pain control and increasing pain tolerance (Mitchell et al.).

The study (Mitchell et al., 2008) took place in a small university laboratory. The random controlled sample consisted of 80 persons (44 women, 36 men) who were recruited through advertisement on the university campus. The average age of the participants was 21 years of age.

The treatment used was to have each participant place a nondominant hand in warm water in order to keep hand temperatures steady during the trial. After the hand reached a temperature of 32 degrees C the participant moved the hand into 5 degree C circulating and refrigerating water bath (Jeiotech model VTRC 620, Seoul, Republic of Korea). The participants were asked to hold the hand in the circulating water until it was no longer tolerable, for a maximum time of 5 minutes. During the time in which the hand was submerged, the participants listened to music of choice through headphones at a volume chosen by the participants. The music was presented from a JVC mini HiFi. The participants also visualized a painting selected from a list which was being projected onto the wall using an LCD projector during the time in which the hand was submerged (Mitchell et al., 2008). The participants completed three trials in counterbalance order with

a break of approximately 5 minutes between each trial. During the 5 minute breaks the participants completed the instruments used to measure the outcomes. Following all three trials the participants then completed the music listening questionnaire.

The instruments used to complete the study were as follows:

1. Tolerance Time, which was measured in seconds using a stop watch.
2. Pain intensity rating on 100-mm visual analogue scale. Participants made a mark on the scale rating their pain between “no discomfort” and “worst possible discomfort.”
3. The pain rating index (PRI) of the McGill Pain Questionnaire. This questionnaire uses a total score, along with two subscales to measure pain “sensory” and “affective/evaluative” pain.
4. A 100-mm perceived control visual analogue rating scale. Participants used this scale to mark the point at which they could alter the pain experience between “not at all” to “completely.”
5. A 100-mm perceived distraction rating scale. Participants used this scale to make between “not at all” and “completely” for the item “I felt able to take my mind off the pain.”
6. A short form of the Spielberger State Anxiety Questionnaire. The participants gave a rating between 1 (strongly agree) and 7 (strongly disagree) for items “I felt calm,” “I felt relaxed,” “I felt tense,” “I felt comfortable,” and “I felt anxious.”
7. Lastly the participants completed the Music Listening Behavior Scale which explores the participant’s relationship with the piece of music which they brought with them to listen to during the study (Mitchell et al., 2008, p. 164).

The reliability and validity of each instrument was based on previous studies that used the same instruments.

The findings were reported based on each measurement tool. Tolerance was analyzed using a mixed design analysis of variance, resulting in a significant ($p < 0.001$) effect on distraction condition and sex ($p < 0.05$), showing men tolerated more pain than women (Mitchell et al., 2008). Using Post hoc Bonferroni-adjusted pairwise comparisons, it was found that listening to participants' preferred music increased pain tolerance more than in the control group ($p < 0.001$), or an art group ($p < 0.001$). Pain intensity of the treatment group was significantly lower by listening to music when compared to the control group ($p < 0.05$). Post hoc pairwise comparison was used to evaluate state anxiety. Results showed that the music listening group had significantly less anxiety than the control group ($p < 0.001$) and the art group ($p < 0.001$). Distraction and perceived control were analyzed using post hoc pairwise comparison, which revealed that listening to music was more distracting than control or art groups ($p < 0.001$). However, findings also showed art is significantly more distracting when compared with the control groups' level of distraction ($p < 0.05$).

The music questionnaire that was completed following the trials evaluated emotions related to tolerance, perceived control, anxiety, and pain ratings (Mitchell et al., 2008). Music seen as uplifting by the listener, increased perceived control ($p < 0.05$) and decreased anxiety ($p < 0.05$). When considering the relationship of art to pain perceptions and anxiety there were no significant differences findings. Mitchell et al. (2008) concluded that music listening and visual stimuli can be successfully used as a means of

distraction to help reduce pain and anxiety perception, and to enhance tolerance and control.

Not only does mental illness affect the family and relationships with a mentally ill family member, it also affects every aspect of the patients life. Grocke et al. (2009) conducted a study using both qualitative and quantitative methods. The authors examined the effects of group music therapy on the quality of life in patients with severe and enduring mental illness. The study framework was based on a Cochrane's Literature review, completed by Gold, Heldal, Dahle and Wigram (2005) (as cited in Grocke et al.). The authors reported on 34 studies which had been previously conducted on music therapy and its effect on mental illness. Based on this review, a study was designed which involved 10 weekly sessions of music therapy for patients living in the community with severe and enduring mental illness.

The study was conducted in five different community centers which serve Melbourne. The subjects were recruited by the case managers and members of the staff. Criteria included: stable (with the use of medications); mental condition which was severe, chronic and enduring; ability to concentrate for at least an hour, and likely to contribute to the group during music therapy sessions (Grocke et al., 2009). A total of 29 participants were included. Only a total of 17 of the 29 completed the study. Of the 17 participants 10 were women, 7 were men. The primary diagnosis was schizophrenia, followed by schizoaffective disorder, bipolar, and various types of psychosis. The average age of the subject was 38 years old.

Three instruments were used in the study. The WHOQOLBREF scale is a 26-item version of the WHOQOL used to evaluate overall quality of life. A second scale, Social

Interaction Anxiety Scale (SIAS), is a 20-item questionnaire evaluating anxiety reactions from being with other people in a social setting was used. Higher scores indicate more social anxiety (Grocke et al., 2009). The Brief Symptom Inventory (BSI) scale measures groups of psychiatric symptoms and results in a global rating (Global Severity Index).

The findings (Grocke et al., 2009) were reported as both quantitative and qualitative. The findings of the WHOQOLBREF scale showed improvement in general quality of life, decreased physical pain, better support from friends, and more opportunities for leisure. Although not significant, making eye contact with others in a social setting was only one item on the SIAS which improved. The results of the BSI showed no significant improvement on any scale items. Both the BSI ($p = 0.873$) and SIAS ($p = 0.484$) showed no significant results following t-tests.

The qualitative data were gathered using focus groups with individuals who actively participated in music therapy once weekly for 10 weeks. During interviews it was apparent that music therapy provided the participants with a way to creatively express emotions, and work as a part of a team to write and record a song. The lyrics of the songs written by participants in therapy were thematically analyzed. Findings indicated that living with a severe chronic mental illness is taxing, but the human spirit is what keeps the subject going day to day (Grocke et al., 2009).

Grocke et al. (2009) concluded that music therapy can be successful in increasing the overall quality of life, and may help reduce social anxiety. The participants in the study suggested there should be a gradual ending to the therapy rather than a sudden closure to the weekly sessions. Following the study it was suggested to increase the duration of therapy to 20 weeks, and increase the session to 90 minutes in length.

Patients' Perceptions of Psych-education

According to Silverman, “traditional approaches, such as medications, dynamic psychotherapy, and hospitalization have had limited effectiveness when applied to the work aspects and socialization of persons with severe mental illness” (2006, p. 111). A study was conducted by Silverman (2006) to evaluate psychiatric clients’ perceptions of the effectiveness of psychoeducational programming, which often includes music therapy.

The participants were inpatients at an intermediate care center in the southwestern United States. A total of 73 patients participated, with the average age being 39.4 years old. Nearly 44% of the participants had been admitted to a psychiatric hospital between two and four times, while nearly 27% had been admitted five or more times. The remaining 29% reported only one admission only once to a psychiatric hospital. Of the participants, 66% were Caucasian. Prior to beginning the study participants were asked if rehabilitative programs offered at the hospital helped; nearly 93% answered “yes” (Silverman, 2006).

The participants were required to attend two classes weekly. The type of classes being offered were coping skills, substance abuse, community reentry, medication symptom management, music therapy, recreation therapy, or art. Participants rated each class’s helpfulness on a Likert-type scale, rating helpfulness as 1= “not at all” to 10 = “a lot” (Silverman, 2006).

Results of a repeated-measure analysis showed music therapy was more helpful than the substance abuse class. Statistically significant results were found ($p = .01$) when using a pairwise comparison with Bonferroni adjustments for multiple comparisons. When comparing music therapy and substance abuse class, music therapy and community

reentry, music therapy and medication management, music therapy and recreational therapy, music therapy and art, significant differences were found with music therapy being the preferred therapy among all classes. The correlation between the participants' perceptions of effectiveness and number of admissions to psychiatric hospitals was significant ($p > .05$). The differences between ethnicity and perception of effectiveness were calculated using t-tests, comparing minority groups with Caucasians and results were not significant ($p > .05$) (Silverman, 2006).

In conclusion, Silverman (2006) believed music therapy was more aesthetically pleasing than other methods of therapy then classes being offered to the participants over the course of this study. Music therapy covered a continuum of issues rather than a specific subject as in the classes and therefore may have been favored among the participants.

Silverman (2009) studied the effect of single-session music therapy on the verbalizations and perceptions of psychiatric patients. The purpose of this randomized controlled clinical trial was to compare group-based psychoeducational music therapy with psychoeducation on satisfaction with life, treatment perceptions, knowledge of illness, and the frequency and type of responses given by the subjects.

The 105 participants in the study (Silverman, 2009) were inpatients in a short-term acute care behavior health center. The diagnoses were varied and typical of an inpatient psychiatric care center. The participants' global assessment of functioning score, number of participants per session, and the age of each participant were assessed to determine differences between the control and experimental groups. Participants were involved in 32 music therapy sessions, conducted on Mondays and Thursdays for a period of 5 months.

Following the completion of the music therapy, participants completed a post-test assessment, which consisted of three instruments. The three scales rated how helpful each session was, how comfortable individuals were sharing personal information during the session, and how enjoyable the session was. The scales used a rating system of 1 being “not helpful, not enjoyable, or not comfortable” to 7 being “very helpful, very enjoyable, and very comfortable” (Silverman, 2009).

During the post-test assessment, the Satisfaction with Life Scale, a 7-point Likert-type scale, and the Adapted Knowledge of Illness and Resources Inventory, a 30-item multiple choice tool were completed ($r = .95$). Two additional scales designed by Silverman were used during the post-test assessment. The Group Psychosocial Event Sample Form (GPES) was completed by an observer during each session ($r = .93$). The second scale was The Social Functioning Scale, completed by the social worker who facilitated the therapy groups on a daily basis (Silverman, 2009).

Findings from Satisfaction with Life Scale were not significant ($p > .21$). There were no significant differences found between the participants’ satisfaction with life and psychoeducational knowledge ($p > .06$). The relationship between therapists’ questions and verbalizations was not statistically significant (Silverman, 2009). Significant results were found among the ratings of helpfulness, enjoyment, and comfort with the total number of verbalizations made during therapy sessions ($p < .006$).

Silverman (2009) concluded that although participants in the music therapy group rated helpfulness and enjoyment higher, individuals were still slightly uncomfortable. “For whatever reasons, it seems that patients enjoy music therapy and enthusiastically attend sessions” (2009, p.121).

Although participants may not see notable change in satisfaction with life, or with psychoeducational knowledge, music therapy is still beneficial.

Therapists' Perceptions of Music Therapy

Music therapy varies with the type of therapy and therapist. A descriptive analysis to evaluate psychiatric music therapists and institutions, philosophies, interventions, and clinical objectives was completed to evaluate the effect of music therapies on patients with a mental illness (Silverman, 2007).

The participants were all members of the American Music Therapy Association. There were 410 members contacted by email, which linked to the survey. The survey was available online for 21 days. Overall responses to the survey were 176 (42.9%) music therapists. Nearly 84% of the respondents were female, and nearly 50% of the respondents had a Bachelors degree in music therapy. Of the respondents, 8% worked in a private practice setting and were thus excluded from the survey (Silverman, 2007).

The survey items were a series of multiple-choice questions which asked participants about the institution where the individual works, work habits, and forms of documentation used on the job. There were also questions about length of music therapy sessions, location where sessions were held, and type of clients which are treated. There were questions with "yes" or "no" answers. Topics ranged from training, professional involvement, and specific institution (Silverman, 2007). The last section of the survey asked participants to respond to a series of open-ended questions concerning how long each individual had been a music therapist, how long each individual had worked in current institution, how many occupants reside at current the individuals' institution, and how much impact each individual believed they have on the clients being served.

The average length the participants had been practicing as a music therapist was 13.26 years. Music therapists had been employed at the current institution an average of 8.4 years. Based on the responses to a 48 question web-based instrument, examining music therapy approaches, it was shown that most music therapists focused on a common group of objectives during therapy sessions. The common objectives included: self-esteem, providing appropriate release of stress/tension, increasing verbal and nonverbal communication skills, and providing a healthy means of emotional release (Silverman, 2007). The findings indicated music therapist find great satisfaction in work.

Not only do the individuals enjoy the work, but each has a positive impact on the clients evidenced by the fact that majority of the clients meeting the objective and goals set in place prior to each therapy session. In conclusion, Silverman (2007) suggested a larger population of music therapist be involved in future research, which should also study the likelihood of music therapy continuing to be a type of therapy offered among the psychiatric population.

Summary of Literature

Meta Analysis: Music Therapy.

According to Gold et al. (2004) music therapy has been an effective treatment in a wide variety of mental illnesses. It was shown that children and adolescents often benefit from music therapy regardless of the psychiatric diagnosis. A particularly large effect was noted in children with behavior and developmental disorders (Gold et al., 2004). Not only has music therapy been effective with children with psychiatric illness, but also in decreasing the occurrence of negative symptoms in adult patients with schizophrenia (Ulrich et al., 2007). According to Ulrich et al. patients who participate in music therapy

have more quality contact with others and are more flexible when in contact with others. Individuals who have participated in music therapy also believe they are more influential and command more respect of others when in a social setting.

Effects of Music Therapy: Pain Symptoms, Depression, Agitation and Quality of Health.

Hayashi et al. (2002) found individuals who had received 15 music therapy sessions showed advantages in improvement of quality of life and decrease in negative symptoms. Research on the effects of music on power, pain, depression and disability was conducted by Siedliecki and Good (2006). Individuals involved in the study successfully learned from nursing staff how to use music to enhance the effects of prescribed analgesics, along with using music to decrease anxiety, depression and disability. Music was also shown to increase the feelings of power among individuals.

Along with decreasing anxiety, depression and disability music therapy has been shown to be successful in decreasing agitation levels of individuals with Alzheimer's disease (Ledger & Baker, 2006). Although only short term, participants showed less verbal aggressive behavior following participation in music therapy sessions. Participants also showed a decreased amount of yelling, wandering and fidgeting.

Not only has music therapy been effective in children and adolescents with a diagnosis of schizophrenia; but also in low therapy motivation adult patients. Patients who have been termed "low therapy motivation" may have poor insight into their mental psychosocial aspects. Music therapy is sometimes used in combination with guided imagery which has also been shown successful in the treatment of individuals suffering depression (Chou & Lin, 2006).

An additional uses of music therapy has been prominently displayed in persons experiencing anxiety, depression and pain. The music therapy session given during research (Choi et al., 2008) included singing songs, playing instruments, and song writing. The patients involved in this study were noted to have increased self-confidence and feels of worth among peers. Findings also reported music therapy effect the stress response within the brain, leading to less anxiety and improved mood (Choi et al.).

Patients' Perceptions of Psychoeducation.

Music therapy has also been noted to increase patient's overall quality of life; along with the development of stronger and more comfortable interpersonal relationships (Silverman, 2006, 2009). According to psychiatric patients, traditional methods of treatment, such as medication and hospitalization with psychotherapy have limited effectiveness in the areas of socialization and work aspects. Research completed by Silverman in 2006 and 2009 concluded that group music therapy sessions, in combination with traditional therapy, assists psychiatric patients to develop socialization skills and to have an overall better quality of life.

Therapists' Perception of Music Therapy.

Mental illness is predominately a chronic and severe condition which affects every aspect of an individuals' life. For those seeking treatment it is fortunate because there are many treatment options available. Among the many options is music therapy. Music therapy has been shown (Silverman, 2007) to be an enjoyable profession because many therapists believe they make a notable difference in the lives of their patients. Music therapists report (Silverman, 2007) that many patients meet the objectives and goals set during each session. Music therapy usually involves objects which include socialization,

communication skills, relaxation, decision making, anger management, reality orientation, medication knowledge, and increasing self-esteem among many others.

Chapter III

Methods and Procedures

Introduction

According to Grocke et al. (2009), individuals with severe and enduring mental illness rarely have the support of friends and family. Because of this, many individuals may be socially isolated and have poor quality of life. The purpose of this partial replication study (Grocke et al.) is to determine whether group music therapy influences quality of life and social anxiety for individuals with severe and enduring mental illness living in the community.

Research Questions

1. Will group music therapy enhance the quality of life in individuals with severe and enduring mental illness?
2. Will group music therapy help reduce social anxiety?

Population, Sample, and Setting

Park Center Inc. is a community based company offering outpatient mental health services. In 2009, over 8,000 individuals benefited from the services provided by Park Center Inc. (Park Center Inc., 2008). A sample will be obtained from this population with the assistance of case-managers employed by Park Center Inc. The inclusion criterion are: a diagnosis of a severe and enduring mental illness, stabilized on medication, and have the ability to concentrate for at least an hour. Participants will be able to contribute

actively to the group process. Participants will be excluded from the study if a personality disorder is present which would prevent concentration and the ability to appropriately participate in the study.

The anticipated sample will be 80 individuals (40 men, 40 women) ranging in age from 20-60 years. The most common diagnosis among participants will be schizophrenia, followed by schizoaffective disorder, bipolar disorder, intellectual disability, and various psychoses.

Protection of Human Subjects

This study will be submitted for approval to the Institutional Review Boards (IRB) of Ball State University and Park Center Inc. Each participant will be made aware of the commitment/restraints of this research study with a cover letter. Participants will be invited to contact the researcher with any questions or concerns in regards to the content of the study. Details within the cover letter will specifically ask participants consent to audio recorded interviews following data collection. Each participant will then give written, informed consent. Due to the nature of the participant's mentality consents will be co-signed by the individual's legal guardian (Burns & Grove, 2009). Confidentiality will be maintained. No names will be used on any reports. Participants can withdraw from the study at any time. No risks have been identified within the study. Benefits of the study include therapeutic music therapy and psychoeducation.

Procedures

Following receiving permission from IRB at Ball State University and Park Center Inc., the researcher will invite all case workers at Park Center Inc. to a meeting in which the details of the study will be presented and discussed. During the meeting the researcher will be provided with a list of individuals who meet study criteria. The list of individuals

meeting study criteria will be developed from Park Center Inc. data base of all individuals currently receiving treatment. Limits will be set on the search to result only individuals meeting study criteria.

Following this meeting, the researcher will meet face-to-face with four groups of 20 selected individuals meeting study criteria, and will ask the individuals to participate in the study. Each individual who indicates interest in participating will be asked to attend a meeting, along with the legal guardian, during the following week in order to receive further instruction. Consent will be obtained during the follow up meeting from the individuals and legal guardian who are willing to participate in the study. The consent will be co-signed by the legal guardians.

Following the consent of each individual, music therapy sessions will be held at Park Center Inc., located in Fort Wayne, Indiana. A certified music therapist will lead the music therapy sessions. Each group music therapy session will last 1 hour and will involve:

1. Participants singing songs.
2. Facilitated song writing in which the participants will contribute lyrics and suggestion for the style, melodic, harmonic, and rhythmic elements of the song.
3. Playing in instruments such as guitars, bongos, drums, wind chimes, xylophones, and tambourines.

Week 1 will consist of an introduction to the program. Each individual will be given a written statement concerning the conditions of the study. The music therapist will then hold a discussion with participants and legal guardians concerning familiar and preferred music and songs. During week 1 participants will also complete the assessment tool to

create a baseline for assessment. Weeks 2 through 8 will consist of 1 hour sessions in which the participants will sing songs with instrumental improvisation, and write songs. During week 9 of the study participants will go to a professional recording studio and record songs as a group.

Following the 9th session, participants will be handed printed copies of the three questionnaires being used in this study. Instructions will be given on how to complete each questionnaire, and the participants will be asked to return the questionnaires at the last session. The researcher will answer any questions about completing the questionnaires.

On the 10th week group music therapy will conclude with a focus group interview. Questionnaires will be collected. Participants will be given ample time to finishing completing any unfinished questionnaires as needed. The participants will also receive a CD copy of the songs that were recorded.

Instrumentation

Three instruments will be used for outcome measurements in this study:

1. The World Health Organization Quality of Life-Brief (WHOQOLBREF): (Murphy et al., 2000), is a 26-item likert-scale version of the WHOQoL scale, which will assess participants' overall quality of life. According to researchers at the University of Washington (2010) the WHOQOLBREF has shown good content validity and test-retest reliability. The WHOQOLBREF has also shown good discriminant validity.
2. The Social Interaction Anxiety Scale (SIAS) (Marrick & Clarke, 1998), is a 20-item scale which uses a 5-point Likert scale to assess individuals concerns about

being with other people in a social setting. The scale uses “0” as “not at all,” while “5” is “extremely.” The higher the score the more anxiety an individual is experiencing. Mattick and Clarke (1989) (as cited in Brown et al., 1997) reported Cronbach’s Alpha for the scale being .89-.94. The test-retest correlation coefficients exceed .90. Similar results were reported by Heimberg et al. (1992) (as cited in Brown et al., 1997) showing internal consistency for the SIAS to be .85-.90.

3. The Brief Symptoms Inventory (BSI) (Derogatis & Melisaratos, 1983), is a scale designed to detect clusters of psychiatric symptoms. Results of the 53-items 5-point scale provide a global rating on the Global Severity Index (GSI) (Grocke et al., 2009). According to Pearson Assessment (1993) reliability ranges from .71-.85. The University of North Carolina at Chapel Hill reports validity ranging from .30-.72 with an average of .50 (2010).

Focused group interviews will also be conducted. Audio recording will take place during the interviews. Participants will be asked questions about what it was like to be a part of the study, which aspects the participants most valued, how the program could have been improve, and if participants would recommend group music therapy to others. Further questioning will include aspects of writing songs and singing as a group. The author will encourage discussion by asking for more detail, or asking others to share thoughts when another participant commented. The interviews will be transcribed verbatim.

Design

A repeated measure design will be used for this study. Repeated measure design is a type of quasi-experimental research used when causality requires close examination (Burns & Grove, 2009). This design eliminates other factors from interfering with observing the desired cause and effect during the study.

Intended Methods for Data Analysis

Quantitative data will be analyzed by running *t*-tests on all questionnaire items both pre-music therapy and post-music therapy. The *t*-tests use standard deviation of a sample and estimates standard error of distribution of the sample. The *t*-test can only be used once during a study to avoid increasing the risk of type 1 error (Burns & Grove, 2009). The published study will provide a table relating all statistically significant ($p < 0.05$) results.

There will be four steps involved in the analysis of the interview transcripts following methods used by Grocke et al. (2009). During step one the researcher will read all the transcripts to obtain an overall sense of the groups' experiences and identified key statements made by the participants. The second step will involve the statements being divided into various groups which capture the common themes (Grocke et al., 2009). The third step will involve the synthesis of the common statements made by all groups; the statements will then be categorized into global themes. The final step of the analysis will be completed by a different researcher who read all the transcripts, derived meanings from the global themes.

A thematic analysis will be used to determine common themes among the lyrics written by the participants of the study. The analysis will involve four steps. The first step will be completed by the researcher which identified key phrases in the first song and

organized into provisional categories (Grocke et al., 2009). The second step involves the lyrics of the remaining songs, which will be evaluated for key phrase with similar meanings and will be placed into provisional categories as in step one. The final step of the thematic analysis will be to review all seven songs and review the categories into which they were placed.

Summary

In this chapter the methods and procedures to be used in this study are described. The variables in the study are music therapy and the effects it has upon adults with mental illness. Qualitative and quantitative methods of study design will be used with the anticipated sample of 20 individuals. Data will be collected using three outcome measures; The WHOQOLBREF, the SIAS and the BSI. Data will then be analyzed using phenomenological and thematic analyses. This study will replicate a study by Grocke et al. (2009) in an attempt to better understand the effect of music therapy on adult with chronic and severe mental illness.

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Source	Problem	Purpose	Concepts Frame- work	Sample	Design	Instruments	Results	Implications
Gold, Voracek & Wigram (2004)	There are 230 different approaches of psychotherapeutic treatment for children, only some have been tested for the efficacy and effectiveness	To examine the overall efficacy of music therapy for children, adolescents with psychopathology. Also to identify how the size of the effect of music therapy is influenced by the type of pathology, clients age, music therapy approach, and type of outcome	Behavior Problems Developmental Delay Music Therapy Behavior and Developmental Outcomes Frame-work not specified	11 studies (conducted between 1970 and 1998) included in the meta-analysis, which included a total of 188 subjects	Meta-Analysis	Cohen's d- used to measure the effect size index. Tends to be biased in small samples Hedges g- used to created unbiased conservative estimates of effect size Q Tests- used to examine the degree of heterogeneity between the studies	Music therapy has a medium to large positive effect on clinically relevant outcomes. Highly significant (p<.001) Statistically homogeneous Effects greater for behavior and developmental disorders than for emotional disorders Greater for developmental and behavior than for social skills and self-concept	Music therapy produces clinically relevant effect of a considerable size in children and adolescents and should be recommended for clinical use
Houtmans, Ulrich & Gold (2007)	Music therapy only recently being introduced as a form of treatment to improve the quality of life in	To examine the effect of music therapy for schizophrenic inpatients needing acute care.	Interpersonal contact Negative Symptoms Quality of	Randomized sample of 37 clients with psychotic disorders. Having an average age	Randomized control design	GieBentest Self Assessment. GieBentest Observer Assessment. Significance	Improves interpersonal contact Reduces negative symptoms	Music therapy is an effective form of treatment for schizophrenic inpatients needing acute care

	clients with Schizophrenia.		Life Frame-work not specified	of 21 and having been an inpatient for an average of 20 weeks		ranging from 0.27-0.95.	Possibly increases quality of life	
						Scale of Assessment of Negative Symptoms	Highly Significant (p<0.05)	
						Scales for Mental Health. Significance Ranging from 0.14-1		
Hayashi, Tanabe, Nakagawa, Noguchi, Iwata, Koubuchi, Watanabe, Okui, Takagi, Sugita, Horiuchi, Sasaki, and Koike (2002)	Continued research and comparison of completed research studies is needed to further evaluate the effect of music therapy in patients with schizophrenia	To examine the efficacy of group music therapy for inpatients with schizophrenia or schizoaffective psychosis	Quality of life in patients with schizophrenia and schizoaffective psychosis Music therapy Frame-work not specified	Long term female patients with a diagnosis of schizophrenia or schizoaffective, psychosis and absence of unequivocal organic cognitive impairment or mental retardation Two groups- Music Therapy Group and a Waiting Group.	Randomized	Positive and Negative Syndrome Scale (p<0.05) Quality of Life Scale (p<0.05) Likert Scale 5-point, 10 item scale used to assess ward-life activity Rehabilitation Evaluation Hall and Baker Scale (p<0.001)	The patients in the music therapy groups showed significant improvement in the areas of quality of life, personal relationships, and increased in participation in activities (p<0.01)	Further research is warranted in the area of music therapy and its effectiveness in the therapeutic effect amongst patients with schizophrenia

				Convenience Sample.				
				Mean age = 66.1				
				Mean age at onset = 32.1				
Chou & Lin (2006)	Medication may alleviate psychotic symptoms but does not completely help clients solve problems in their minds and modify cognitive distortion	To explore the listening experience of depression suffers while undergoing guided imagery and music therapy	Music Therapy and Guided Imagery Model Depression	5 outpatient individuals suffering depression	Random Sample Semi-structured interviews	Mini-Mental State Examination Beck Depression Inventory	Music therapy along with guided imagery helps reduce anxiety, pain, and feel more at peace	Music therapy and guided imagery along with medication therapy are successful treatment methods for individuals with depression
Siellecki & Good (2006)	The effect of music on pain, power, depression, and disability in a working aged adults with chronic non-malignant pain has not been full researched	To test the effect of music on power, pain, depression and disability and compare researcher provided music with subject provided music	Chronic non-malignant pain which is persistent regardless of traditional treatment Depression Disability Music therapy Roger's	Convenience Sample 24 month period from 2001-2003 60 total subjects Ages 21-65 Had neck, back, and/or joint pain for at least 6 month	Randomized Controlled Clinical Trial Random assignment to either Standard Music Group, Patterning Music Group, or Control	McGill Pain Measurement Questionnaire. Reliability 0.84 Pain Disability Index. Reliability 0.79 Center for Epidemiology Studies Depression Scale. Reliability 0.81-.084	Music groups had more power and less pain, depression, disability than the control groups (p<0.001) No statistically significant differences between the two music interventions (p<0.362)	Patients can be instructed by nurses how to use music in the appropriate manner in order to help reduce pain, depression, disability, and help increase the effects of analgesics

		science of unitary human beings	Receiving at least 1 form of traditional treatment	Group	Power as Knowing Participation in Change Tool Version 2. Alpha Reliability 0.94	Model supporting music's effect both directly and indirectly was supported		
Choi, Lee & Lim (2008)	Continued research is needed to study the effect of music therapy intervention in depression, anxiety and relationship in psychiatric patients	To test whether music therapy is effective for improving depression, anxiety, and the relationships of psychiatric patients	Music Therapy	Non-random Sample	Quasi-experimental design	Music interventions 60 min of music therapy for 15 sessions	The group receiving music therapy had significant improvement in scores for depression, state anxiety, trait anxiety, and relationships in comparison to the control group	Group music therapy can improve the symptoms of psychiatric patients
			Depression Anxiety Relationships and Mental Illness Frame-work not specified	Music Therapy Control Group = mean age 37.4 years diagnosed with schizophrenia, psychotic disorder, bipolar disorder and conduct disorder				
				Routine Care Control Group = mean age 34.9 diagnosed with schizophrenia, psychotic disorder,		Beck's Depression Inventory State and Trait Anxiety Inventory Relationship Change Scale	P<0.01 in all groups.	

Mitchell, MacDonald & Knudsen (2008)	<p>anxiety disorder, and mental retardation</p> <p>Total sample 26 patients</p>							
	No study to date has compared the use of visual and auditory distraction from pain	To evaluate how music and art effect pain perception, anxiety levels	Music and Art in relations to pain intensity and perceived pain Frame-work not specified	Random Controlled Sample 80 participants recruited through advertisement 44 women 36 men Mean age 21	Random-ized	<p>Pain intensity rating on a 100mm visual analogue scale</p> <p>Pain intensity index of the McGill Pain Questionnaire</p> <p>A 100mm perceived control visual analogue rating scale</p> <p>A 100mm perceived distraction rating scale</p> <p>A short form of the Spielberger State of Anxiety Question-naire</p> <p>Music listening behavior</p>	<p>Men listening to their preferred music could tolerate pain longer than using art or the silence control group $p = <.001$</p> <p>Those listening to music rated pain less intense than the control group $P=<.05$</p> <p>Listening to music decreased anxiety more than looking at art $p= .001$</p>	Music therapy is efficient for decreasing anxiety, pain relief, and provides greater perceived control over the experience than visual distraction

Ledger & Baker (2006)	There are no research studies on the long term effects of music therapy on aggressive behavior for individuals with Alzheimer's disease	To determine the effect of music therapy on aggressive behavior in individuals suffering Alzheimer's disease	Alzheimer's Disease Group music therapy Aggressive behavior	60 nursing home dwelling elderly with Alzheimer's disease between the ages of 71 and 96 Participants has moderate to severe cognitive impairment	Non-random Experimental design	Cohen-Mansfield Agitation Inventory, measures 29 different agitated behaviors	Long-term there is no difference in the agitation between control and experimental group Short term experimental group was less agitated following group music therapy sessions	Group music therapy may be useful to temporarily decrease the amount of aggressive behaviors seen in individuals with Alzheimer's disease
Grocke, Bloch & Castle (2009)	There are few controlled research studies on the effectiveness of group music therapy for those who have severe and chronic mental illness	To determine whether music therapy influences quality of life and social anxiety for comminute dwelling clients who have severe and chronic mental illness	Severe and Enduring mental illness Music therapy Quality of life Social Anxiety	17 community dwelling adults mean age 38. 10 women, 7 men who had the ability to concentrate for 1 hour 8 had diagnosis schiz- ophrenia, 4 bipolar, 3 psychosis and intellectual inability, 1 other psychosis	Convenience Sample Semi-structured focus group which gathered qualitative and quantitative data	WHOQOLBREF Scale Quality of Life Scale Social Interaction Anxiety Scale Brief Symptom Inventory Reliability not specified for any of the instruments	T-tests for all questionnaire items. Statistically significant P = <0.05 BSI symptomatic status did not alter at all p = 0.873 SIAS p= 0.484	Music is a motivating factor for those with severe and chronic mental illness Song writing paved a way for creative expression and enabled groups to experience working within a team

Silverman (2006)	Traditional approaches to treatment of mental illness has limited effectiveness when applied to work aspects and socialization of persons with mental illness	To quantitatively evaluate psychiatric patients' perception of their psycho educational programming	Patients perception of psycho educational programs Music Therapy Frame-work not specified	73 inpatients with an average age of 39.4 44% had been admitted to a psychiatric hospital between 2 and 4 times. 60% were Caucasian 66% were admitted on a voluntary basis	Random Study Design No control groups	Survey using a Linkert Scale Repeated-measure ANOVA. P = .01 Pairwise comparison with Boniferroni adjustments for multiple comparisons P = .01 and .05 T-Test to determine if ethnic back grounds changed the results. Not significant p= <.05	Music therapy overall highest perceived helpfulness p = .01 among various therapies offered	Music therapy when combined with traditional approaches has great perceived effectiveness among mentally ill patients Further research is needed to evaluate psychiatric programming and may use more objective measures rather than participant reported data
Silverman (2009)	Music therapy as a psycho-social intervention has a considerably smaller literature data base than other psycho-social treatments	To compare group-based psycho-educational music therapy to psycho-education in measures it satisfaction	Single-session music therapy Verbiliz-ation and perceptions of music therapy	Psychiatric inpatients at a short-term acute care behavior health care center 105 total participants; 60 experimental	Random-ized controlled Clinical Trial Independent Variables: group-based psycho-education and psycho-	Multiple Likert-type scales Satisfaction with Life Scale Adapted Knowledge of Illness and Resources Inventory. Reliability .95	No significance between satisfaction with life and psycho-educational knowledge p= >.06 No significance between perception of helpfulness,	Adults with psychiatric illness tend to enjoy life more, provide more self and cognitive insight and know more about their illness than those who do not attend music therapy.

		with life, knowledge of illness, treatment perceptions, and response frequency and type in an inpatient setting		and 45 control	educational music therapy	The Group Psycho-social Event Sampling Form Reliability .90 Statistical Package for the Social Sciences version 13.0 Overall reliability or instruments used .93	enjoyment and comfort $p = >.21$ Total verbalizations made during a session significantly related to helpfulness, enjoyment and comfort $p = <.006$	
Silverman (2007)	Very few published research studies describe the profession of music therapy, considering its status, trends in clinical practice, and development with data being collected via an on-line or web-based survey	Descriptivel y evaluate psychiatric music therapists and their institutions , philosophi es, interventio ns, and clinical objectives	Current trends in music therapy Job enjoyment among music therapists Therapists Perceived effectiveness using music therapy Frame-work not specified	176 members of the American Music Therapy Association in 2005 responded to the survey. 87.2% female 49.7% held a Bachelor's degree in Music Therapy	Descriptive Analysis	48 question web-based instrument posted online for 21 days which took approx 10 minutes to complete Linkert-type scales	Average years of working as a therapist 13.26 Average years with in a psychiatric setting 8.4 From 0-10 Therapists rated their level of job enjoyment 8.73 From 0-10 therapist rated their positive impact on the psychiatric population 7.94	Music therapists reported a high level of enjoyment working with the mentally ill and it appears that not only to they enjoy their consumer's but also feel as though they have a positive impact on their consumer's psychiatric treatment.

	<p>The most common objective focused on during therapy sessions are 1. Socialization 2. Communication 3. Self-esteem</p>
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