The Effect of Improvisational Group Drumming versus General Music Therapy versus Activity Therapy on Mood, Session Behaviors and Transfer Behaviors of in-Patient Psychiatric Individuals

Daniel B. Tague
THE FLORIDA STATE UNIVERSITY

COLLEGE OF MUSIC

THE EFFECT OF IMPROVISATIONAL GROUP DRUMMING VERSUS GENERAL MUSIC THERAPY VERSUS ACTIVITY THERAPY
ON MOOD, SESSION BEHAVIORS AND TRANSFER BEHAVIORS
OF IN-PATIENT PSYCHIATRIC INDIVIDUALS

By

DANIEL B. TAGUE

A Dissertation submitted to the
College of Music
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Degree Awarded:
Summer Semester, 2012
Daniel B. Tague defended this dissertation on June 11th, 2012. The members of the supervisory committee were:

Jayne Standley  
Professor Directing Dissertation

David Gussak  
University Representative

Clifford Madsen  
Committee Member

Alice-Ann Darrow  
Committee Member

John Geringer  
Committee Member

The Graduate School has verified and approved the above-named committee members, and certifies that the dissertation has been approved in accordance with university requirements.
Dedicated to my incredible wife, Lydia, and my precious daughter, Darby.
I love you both!
ACKNOWLEDGEMENTS

I would like to thank some of the wonderful people who inspired me through the years and especially those who helped me in this most recent endeavor:

To my dissertation committee members, I offer my deepest appreciation for your knowledge, gracious advice, and patience in steering me through these projects. I especially want to thank my major professor, Dr. Standley for her generosity and model example of a warm-hearted scholar, teacher and mentor. To Dr. Geringer, thank you for making statistics classes almost fun! To Dr. Darrow, thank you for all your excitement and enthusiasm for me, my little family, and music therapy, that finally got me to FSU! To Dr. Gussack, thank you for helping a musician feel like an artist. To Dr. Madsen, there is not room enough on this page, but thank you especially for reminding me that you control the environment which in turn controls you.

I want to express my special thanks to all of my music therapy colleagues, students, research helpers and facilitators without whom I would not have accomplished this or any of the other projects these last three years. Thank you, thank you: Olivia Swedberg-Yinger, Lori Gooding, Darcy Walworth, Natalie Wlodarczyk, Dianne Gregory, Yen-Hsuan Yang, Indra Selvarajah, Marsha Sykes, Melissa Violette, Ashley Hall, Tiffany Ervin, David Crowell, Brittany Turner, Julie Argue, Pat Kossman, and Lindajo Haythorn.

I want to thank my parents for their unwavering confidence and encouragement. Thanks to all the stars in the music therapy profession that inspire and make me reach for my potential.

To my sweet angel, Darby…thank you for always being there to remind me of the really important things in life! To Lydia, words alone cannot express the deepest gratitude and love I have for you and my appreciation for your sacrifices and support during two trips back to school. With all my love, this dissertation is dedicated to you.

Finally, I acknowledge the power of prayer in my life and give thanks to Him from whom all blessings flow.
# TABLE OF CONTENTS

List of Tables ........................................................................................................................................ viii
Abstract ................................................................................................................................................ ix

1. INTRODUCTION ................................................................................................................................ 1
   1.1 Mood ............................................................................................................................................... 1
   1.2 Mood and Behavior ..................................................................................................................... 2
   1.3 Psychiatric Mood Symptoms ........................................................................................................ 3
   1.4 Behavior of Psychiatric Patients ................................................................................................... 3
   1.5 Therapies for Psychiatric Patients ............................................................................................... 4

2. REVIEW OF LITERATURE .............................................................................................................. 6
   2.1 Activities Therapy in Psychiatric Care ......................................................................................... 6
      2.1.1 Recreational Therapy ........................................................................................................ 6
      2.1.2 Music Therapy .................................................................................................................... 7
   2.2 Music and Mood ............................................................................................................................ 8
      2.2.1 Music and Emotion .......................................................................................................... 8
      2.2.2 Music and Depression ...................................................................................................... 10
      2.2.3 Music and Mood in Medical Settings ............................................................................. 12
      2.2.4 Music, Mood and Memory .............................................................................................. 12
      2.2.5 Music and Mood During Exercise ................................................................................. 13
      2.2.6 Summary of Findings of Music on Mood ......................................................................... 14
   2.3 Music and Other Influences on Behavior in the Psychiatric Setting ........................................ 14
   2.4 Active Music-Making .................................................................................................................. 16
   2.5 Group Improvisational Drumming .............................................................................................. 19
   2.6 Group Empowerment Drumming on Mood ............................................................................. 20
   2.7 Teaching for Transfer ............................................................................................................... 22
   2.8 Purpose ........................................................................................................................................ 23

3. METHOD .............................................................................................................................................. 24
   3.1 Participants ................................................................................................................................... 24
   3.2 Design .......................................................................................................................................... 25
      3.2.1 Dependent Variables ...................................................................................................... 25
REFERENCES ........................................................................................................................................... 76
BIOGRAPHICAL SKETCH ...................................................................................................................... 84
LIST OF TABLES

Table 1: Demographic Data of Participants.................................................................24

Table 2: One-Way ANOVA: Pretest Mood Scores for MTD, GMT and D Treatment Groups.....32

Table 3: One-Way ANOVA: Posttest Mood Scores for MTD, GMT and D Treatment Groups ..32

Table 4: Pretest and Posttest Means: Mood Scores for MTD, GMT and D Treatment Groups............................................................................................................................................33

Table 5: One-Way ANOVA: 30 Minute Post Group 24 Hours Observation Sheet Behavior Scores for MTD, GMT and D Treatment Groups........................................................................................................33

Table 6: 30 Minute Post Group Mean 24 Hours Observation Sheet Behavior Scores for MTD, GMT and D Treatment Groups........................................................................................................................................34

Table 7: Observed Percentage Social Behaviors by Group.................................................34

Table 8: Mean On-Task Behavior Percentages by Number of Observed Intervals............35
ABSTRACT

Individuals with mental illness are often diagnosed with mood symptoms in relation to a variety of disorders. Mood has been used as a measure of progress for patients recovering from mental and physical illness, but has also been examined in a variety of populations as an indicator for certain behaviors and treatment outcomes. The purpose of this dissertation was to investigate whether single-session facilitated improvisational group drumming will improve the mood of in-patient psychiatric individuals and increase socialization and positive behaviors observed on the unit. Group drumming was compared with a non-drumming general music therapy session and a non-music activity therapy group. Participants (N = 66) were male and female patients with serious mental illness assigned by convenient randomized sampling to one of three experimental groups. Mood data were collected pre and post by self-report using an adapted visual analog mood scale (VAMS). On-task and interaction behaviors during sessions were collected via observation of digital video, and transfer behaviors on the living unit were collected 30 minutes post session by trained hospital staff.

The content of the three treatment sessions was designed to include five topics: cooperation, teamwork, friendliness, compliments and helpfulness. Each treatment protocol also incorporated role-play and direct instruction to encourage participants to demonstrate appropriate social interactions on the unit. The treatment protocols were created to allow for 35 minutes of activities during psychosocial education programming. Results from the modified VAMS survey indicated positive changes in mood for participants in all three treatment conditions although statistical analysis of the mean pretest and posttest scores showed no differences among groups. Results from the analysis of observations of participant behavior 30 minutes post treatment did not show significant differences between experimental groups, but participants from all three groups scored in positive numbers, indicating that they had been involved in positive behaviors on the unit after their participation in a treatment group with the greatest amount observed in the two music groups. Results from observations of interpersonal behaviors during treatment indicated that the mean percentages of social approval and neutral behaviors were also not significantly different by type of treatment. The mean percentage of on-task behaviors revealed that participants were more on task in the drumming and the music therapy treatment groups than in the activity therapy treatment groups, though differences were not statistically significant.
This study was the first application of group drumming to be used for an entire treatment session in an acute psychiatric setting. This was also the first research trial to use drumming alone to influence the mood of in-patient psychiatric individuals. Results of this study indicate that a group drumming protocol can be successfully utilized as part of the psychosocial training program in a hospital setting, though analysis of the data also confirmed that general music therapy and activity therapy may be beneficial to the mood of patients. Implications for clinical use and suggestions for future research are discussed.
CHAPTER ONE

INTRODUCTION

The Agency for Healthcare Research and Quality reported in 2004 that adults with a mental health and/or substance abuse diagnosis accounted for 1 out of 4 stays at U.S. community hospitals or 7.6 million hospital stays. Patients in treatment for mental illness ranked in the top five most costly medical conditions in the period between 1996 and 2006 (Soni, 2009). A common model for psychiatric treatment is the idea of psychosocial rehabilitation (PSR). This model of treatment places a focus on helping individuals reintegrate into society. Since the late 1990’s both in and out-patient facilities have used PSR programs in goal-oriented treatment that aids individuals in learning and developing functional social skills, vocational skills and improving successful community placement (Longo, Marsh-Williams, & Tate, 2002; Reger, Wong-McDonald, & Liberman, 2003). Members of society who are mentally healthy have fewer limitations on activities of daily life, miss fewer days at work and exhibit high levels of psychosocial functioning (Keyes, 2005).

Individuals with mental illness are often diagnosed with mood symptoms in relation to a variety of disorders. In addition to clinical depression, bi-polar disorder and mood disorder, individuals with schizophrenia or schizoaffective disorder may also have mood symptoms (Levinson, Umapathy & Musthaq, 1999). The American Psychological Association Guidelines for Best Practice in Working Toward the Recovery of Individuals with Mental Illness recommends measurement of mood as one of the important assessment tools in the treatment process (APA/CAPP Task Force, 2007).

Mood

Mood has been used as a measure of progress for patients recovering from mental and physical illness, but has also been examined in a variety of populations as an indicator for certain behaviors and treatment outcomes. One study of college students, for example, found that minor stressors led to depressed mood (Felsten, 2004.) Related research has shown that depressed mood is important for its relationship and association as an indicator for heart failure and alcoholism. Kassel, Jackson and Unrod (2000) explored the relationship between negative mood regulation expectancies, or one’s positive expectation of coping, with negative affect and
alcoholism. They discovered a link between negative mood regulation expectancies and problem drinking. In another study, May et al. (2009) found that even with pharmaceutical intervention for depression, a diagnosis of depression after Coronary Artery Disease increased the risk for heart failure. The research also suggested that non-pharmaceutical means be explored to influence mood.

Mood and Behavior

Other researchers have sought to establish a connection between mood and behavior. Gordon (1981) ran a series of studies regarding mood and found that when people are in a good mood, they seek out actions to maintain their mood level. In a related examination of mood and memory, Bower (1981) discussed experiments regarding mood and emotions and their effects on memory. He found that people remembered things better when they were in the same mood as the recalled memory. He also found that people related to characters in stories better when the narrative agreed with the reader’s emotional state and that the reader recalled more about the characters.

This connection with mood, memory and actions seems to be found in both positive and negative emotional states. Gordon’s (1981) research into mood and action revealed that people in a positive mood were more helpful and altruistic. Further research into this behavior was done by Capra (2004) where games were used to show that good-mood participants were more helpful to other player’s as revealed by their choices during the games. Helpful behavior is important in many settings where therapy is required because it relates to cooperation and compliance. Berkowitz (1987), for example, found that a positive mood in conjunction with self-awareness increased a participant’s willingness to aid the experimenter. Carr, McLaughlin, Giacobbe-Grieco, and Smith (2003) worked with a group of individuals with developmental disabilities prone to aggression, self-injury and property destruction. Participants in this study (N = 8) were given social attention in the form of hugs, “high fives” and smiles as a stimulus and then observed for compliance behaviors on routine tasks. The researchers found that there was a significant increase in mean task steps completed after the positive stimulus and that problem behaviors fell to near zero after positive mood induction. Gendolla (2000) discovered that mood affects the initiation, intensity and persistence of a behavior. Changes in mood have both an
informational impact and directive impact on behaviors by affecting a person’s judgment, appraisals and preferences.

In addition to helpfulness, some research has shown that mood may influence verbalizations. Both Grocke, Bloch and Castle (2009) and Silverman (2009) found that improved mood increased subsequent verbalizations in psychiatric patients. Tang, Yao and Zheng (1994) looked at the effect of listening to music and participating in group singing on various social measures. Their research showed that improved mood was related to a significant increase in social conversation. Bensimon, Amir and Wolf (2008) used improvisational group drumming with soldiers diagnosed with post-traumatic stress disorder. They reported an increase in group cohesion and feelings of togetherness for the participants ($N=9$) over the course of sixteen group drumming sessions.

**Psychiatric Mood Symptoms**

Mood symptoms as a result of major depressive disorder, bi-polar disorder, or as part of another diagnosis such as schizophrenia, present more than a problem of acute crisis. Joffe (2003) recognized that treatment should be more holistic in nature so that treatment can focus on the long-term for remission and resolution of symptoms. Contemporary physicians and researchers are still searching for more effective pharmacological treatment for mood symptoms (Zarate et al., 2010). More than half of patients with major depressive disorder currently do not conquer their mood symptoms after up to 14 weeks of medical treatment (Judd et al., 2002; Trivedi et al., 2006). In addition, a majority of patients with bi-polar disorder also fail to respond to treatment or tolerate medication over the long-term (Judd et al., 2002; Gitlin, 2006).

**Behavior of Psychiatric Patients**

In-patient psychiatric units are places where people with many different serious mental illnesses, substance abuse issues, and even developmental disabilities find themselves when other societal programs or safety nets are insufficient. A psychiatric admissions unit is, by nature, a volatile environment. Individuals in the psychiatric unit are at different stages of treatment involving pharmacological, cognitive-behavioral, psychodynamic and many other kinds of interventions. One estimate found that up to 45% of patients with schizophrenia exhibited aggressive or threatening behavior during a hospital stay (Steinert, Wiebe, & Gebhardt, 1999; Tardiff, Marzuk, Leon, Portera, & Weiner, 1997). Another analysis found that although
20% of assaults by patients were for psychotic reasons, most aggressive actions were a result of other factors such as misunderstandings caused by the psychosis or impulsivity (Nolan et al., 2003). Management of these behaviors is an ongoing challenge for psychiatric treatment. The American Psychological Association (APA) has recognized these challenges and recommended several strategies to help curb inappropriate behaviors and promote cooperative social interaction with staff and peers including skills training, therapeutic contracting, token economies and attention shaping (APA/CAPP Task Force, 2007).

**Therapies for Psychiatric Patients**

A new emphasis on the wellness and recovery model is currently guiding therapeutic practice in community psychiatric hospitals. Swarbrick (2009) described this model as helping the individual with serious mental illness, which is in a state of crisis, to be part of the treatment team that plans for emotional and physical stability in hopes of a successful recovery in the least restrictive environment. The wellness model emphasizes the role of the patient in the treatment process and promotes person-first terminology and planning. The APA has outlined several therapeutic aims as part of this process, including: (a) skills training, (b) social skills training, (c) cognitive rehabilitation, (d) supportive socialization, (e) and psychotherapy (APA/CAPP Task Force, 2007). The United States Psychosocial Rehabilitation Association (2011) standards for supporting these goals are to provide collaborative rehabilitation services that are individualized and evidence-based in an effort to promote individual acquisition of skills and resources for recovery and community-based living.

Music and recreational therapy are two examples of interventions used in community-based hospital PSR programs. Wolfe (2000) outlined music therapy practice in this setting as providing services in regard to assessment, skills training, continuing evaluation and discharge planning. The role of music was further explained by Unkefer (1996) to be supportive, re-educative and reconstructive and include activity-based, process-oriented and catharsis-oriented music interventions. Both music therapy and recreational therapy are also important parts of the therapy outlined by the APA to disseminate information regarding improving social skills through discussion and role-play. In support of recreational therapy in hospital PSR programs, Hutcheson, Ferguson, Nish, and Gill (2010) found a dramatic increase in patient participation in group activities when an organized and consistent recreational therapy program was followed.
This study will focus on the effect of activity therapies and discussion on the mood and behavior of inpatient psychiatric individuals. Music and other activity therapies such as recreational therapy are currently part of many psychiatric treatment programs. This study seeks to determine the effectiveness of group improvisational drumming on mood and behavior while comparing and contrasting this new intervention strategy with the more established treatment modalities.
CHAPTER TWO

REVIEW OF LITERATURE

Activities Therapy in Psychiatric Care

Recreational Therapy

Patients in contemporary in-patient psychiatric treatment participate in a variety of PSR classes and treatment interventions. Patients are seen in group settings by social workers, nurses, psychiatrists, and others such as activity therapists, art therapists and music therapists. The National Council for Therapeutic Recreational Certification (2007) reports that approximately 37% of about 12,000 certified recreational therapists work in the behavioral/mental health setting. Orr (2010) completed an analysis of recreational therapy (RT) in the psychiatric setting to determine the effect of recreational therapy on psychosocial functioning. Although she encountered significant difficulties in data collection that precluded statistical evaluation of global assessment of functioning, she discovered important data regarding the state of recreational therapy services delivery in contemporary in-patient psychiatric care. The results of her data showed that 31% of patients did not receive an official assessment for recreational therapy and that the amount of recreational therapy treatment was dependent on diagnosis and length of stay. Overall, the data showed that the largest portion of patients receiving recreational therapy was seen for over one hour per day for recreational therapy treatment.

Pestle, Card and Menditto (1998) studied the effect of RT on patients with schizophrenia in a social skills learning program. Results showed a significant improvement in appropriate behaviors as measured by the Time Sample Behavioral Checklist. In another study regarding the behavior of psychiatric patients, Corrigan, Liberman and Wong (1993) found that regardless of contingent rewards, patients with severe mental illness improved their pro-social behaviors and reduced their so-called “bizarre” behaviors after participation in recreational therapy activities.

As part of a PSR program, Kelley and Coursey (1997) studied the effect of an outdoor TR program on patients with mental illness. Participants \( N = 57 \) took part in day-long outings such as canoeing, rock-climbing, hiking and spelunking. Several different measures of emotion and stress indicated significant improvement in self-esteem and lower anxiety for the experimental group. Of particular interest were the results from patients with affective or
schizoaffective disorders on the Trust and Cooperation Scale and the Brief Symptom Inventory. Scores from these surveys revealed an increase in trust and cooperation and a decrease in hostility and interpersonal sensitivity. A related study by Finnell, Card and Menditto (1997) compared RT with vocational rehabilitation sessions. This small study of hospitalized patients (N = 6) with schizophrenia also used the Time Sample Behavioral Checklist. The researchers discovered that the participants exhibited significantly more appropriate behaviors when they were part of the TR group.

Music Therapy

The American Music Therapy Association reports that approximately 18.5% of all music therapists work in a mental health setting (AMTA, 2010). Silverman (2003) conducted a meta-analysis of the effects of music on symptoms of psychosis. The influence of music in many forms, including popular, classical, preferred or non-preferred, recorded or live, was determined to be significantly effective in addressing the symptoms of psychosis. Silverman (2006) also studied the patient perception of music therapy as compared to other psychosocial rehabilitation programs. He found that music therapy was the highest rated therapy group according to self-report surveys by patients. Heaney (1992) compared music therapy more specifically with art and recreation therapy in the psychiatric setting. He also found that patients rated music therapy as being significantly more pleasurable than the other two therapies, although all activity therapies were scored favorably by the participants.

As psychiatric care in the United States has evolved to have shorter in-patient stays, therapeutic interventions have become more focused on the effects of single-session treatment (Silverman & Marcionetti, 2004). Silverman (2009) provides some guidelines for effective single-session music therapy in the psychiatric setting. He argues that some underlying considerations for music therapy in an acute psychiatric setting are the need for quick and accurate assessment, building rapport, matching interventions with patient need, and establishing closure. His guidelines for implementing successful music therapy include providing consistent services in both time and setting while keeping unit staff involved and informed. He also recommends that the therapist should have an open and positive demeanor and be prepared to be flexible with musical interventions. The author stresses the use of patient preferred music, providing positive reinforcement and treating every session like it is the last one you will have with a patient.
Music and Emotion

Music, by nature, is fused with meaning and emotion, but without standardized interpretation. In an effort to explore this relationship, researchers have used a variety of tools to evaluate the feelings of research participants. Farnsworth (1958) discussed attempts by researchers and musicians to catalogue certain descriptive adjectives to correspond with emotions relayed by musical selections. The Hevner Adjective Check List was a one example of word groupings that conveyed similar emotional content (Farnsworth, 1958, p. 97). The Hevner Adjective Check List used eight word groupings that related to eight basic emotions. Farnsworth explained that as researchers tried to match emotions to music using adjective check lists or other means, they were never able to establish consistency in the mood labels for musical selections. Farnsworth concluded that many factors combine to affect a listener’s mood responses to music. Musical form such as mode and tempo seem to be prominent variables. The mood state of the listener and music preference were also described as important factors. Eagle (1973) found evidence to support Farnsworth when he studied the effect of music with and without lyrics on the existing mood state of college students. He found that a participant’s existing mood was a significant factor in a person’s responses to music. This was the case even when the same music was presented in a different order to listeners.

Checklists or word groupings, such as the Hevner Adjective Check List, have commonly been used to investigate mood. Some investigators have also used the Beck Depression Inventory (BDI) (Hussain, Thompson, & Schellenberg, 2002) or the Maslach Burnout Inventories (Bittman, Bruhn, Stevens, Westengard, & Umbach, 2003; Bittman et al., 2004). Others have used the Profile of Mood States (POMS) (Bittman et al., 2005; Hussain et al., 2002; Macone, Baldari, Zelli, & Guidetti, 2006; Cassileth, Vickers, & Magill, 2003; Waldon, 2001) or the Rejeski Feeling Scale (Haneishi, 2001). Many of these instruments have short form versions that are useful in working with participants under physical, emotional or cognitive distress.

One early study into the effect of music on mood, insight and anxiety compared three types of music therapy treatments with male forensic psychiatric patients (Thaut, 1989). Researchers had participants (N = 50) rate their perception of relaxation, how they felt and the
nature of their thoughts about their personal lives. All participants experienced a music therapy group, an instrumental improvisation group and a relaxation group. Results from the surveys indicated a significant improvement in ratings for all three questions from pre to post treatment. The question about relaxation after the relaxation group received the highest gain in score, followed by the question about mood and then the question about thought/insight.

Husain et al. (2002) used the BDI and POMS to examine the effect of tempo and mode on spatial ability, arousal and mood. Participants ($N = 36$) were undergraduate students who listened to four different versions of a Mozart sonata before completing measures of arousal, spatial ability and mood. Music played in the fast tempo or a major mode improved participants’ scores on spatial tasks, but only mode variations affected mood scores. Overall, the researchers discovered that moderately arousing piano music that induces positive moods may affect performance on spatial and other similar cognitive tasks.

Saarikallio and Erkkila (2007) conducted a study with Finnish adolescents to explore music in mood regulation. Participants ($N = 8$) were interviewed and provided written feedback about sessions where they brought in their own preferred music recordings. Examination of the responses through grounded theory helped to develop a model for mood regulation by music. The researchers found that music was a versatile way for adolescents to regulate mood and helped them to restore a sense of well-being and experience a more varied and colorful life. Not only did they discover that musical activities helped to regulate the intensity and clarity of the subjective experience of emotions, but that music was an effective way to discharge negative emotions.

Haneishi (2001) included a mood measurement among her dependent variables in a study regarding a music therapy voice protocol on speech intelligibility and various vocal parameters with people who have Parkinson’s disease. The music therapy voice protocol utilized singing exercises based on participants’ preferred music styles and songs. Participants ($N = 4$) self-rated their mood using the Rejeski Feeling Scale before and after 12 to 14 therapy sessions held 3 times per week. The mean of mood scores was higher from pretest to posttest, but statistical results were not significant.

A much larger study was conducted in the psychiatric setting by Wen-Ying, Zheng, Yong-Zhen, Hong-Yi and Bio (1998). In this study, participants ($N = 70$) with schizophrenia were seen for music therapy groups and regular medication or regular PSR groups plus
pharmaceutical treatment. Participants in the music therapy group received 6 sessions per week for 2 hours each session. The music therapy sessions consisted of music listening, appreciation, performance and learning about musical notation and elements of music. The results of the study indicated that participants in the experimental group experienced significant improvement in thought processes, affect and reduced sluggishness. A unique aspect of this study was a follow-up with participants after 3 months in which the researchers found a significantly better difference in the severity of psychiatric symptoms between experimental and control groups. This study is also of note because of the quantity and concentration of music therapy used as treatment for the experimental group.

Lipe et al. (2012) completed a study about music and art activities in the psychiatric clubhouse setting. This out-patient setting allows individuals with mental illness to experience more independent and choice-driven leisure-skill development and self-improvement classes. The researchers measured participant responses regarding stress, well-being, and sense of belonging. Results of the data showed that participants (N = 41) felt reduced stress over 20 sessions and a significant improvement in the answer to the question, “How do you feel right now?”

Tague (2011b) researched the effect of music listening and group painting on the mood of in-patient psychiatric individuals. Participants (N = 31) used non-traditional brushes on large canvas with and without programmed music. The music was designed to provide increasing levels of stimulation from tempo, style and lyric content during the painting experience. Participants completed a Positive/Negative Affect Scale (PANAS) survey before and after each painting experience. Results indicated that mean mood scores improved for all individuals in both treatment conditions when compared with baseline scores. The improvement in mood scores was statistically significant for both experimental conditions as measured by the PANAS survey. The participants also showed a significant improvement in mood scores as measured by a Faces scale while they were painting with music, but not after they had painted without music. This study suggests that there may be some effect from art therapy or combined music and art therapy on the mood of in-patient psychiatric patients. Implications for using music with art and suggestions for further research are also discussed.

Music and Depression

Two early studies about the effect of music on the behavior of people with depressive symptoms were conducted on psychiatric patients who were chronically depressed and on the
general population in white urban neighborhoods. Williams and Dorow (1983) used a contingent music listening protocol during counseling to affect changes in complaints and non-complaints by depressed patients. When participants were observed to use a verbal complaint, the music was stopped. Results indicated that participants decreased complaints and increased non-complaint verbalizations during contingent music conditions with or without contingent verbal reprimands or praise. Stack and Gundlich (1992) looked at the relationship between the number of suicides and the amount of country music played on the radio. They reported that 51% of the variance in the urban white suicide rate could be accounted for by the percentage of radio time devoted to playing country music. Stack and Gundlich theorized that country music contains recurrent thematic material (e.g., alcohol abuse) that may reinforce preexisting thought patterns in those people with suicidal ideation.

Other researchers have investigated the possible use of music to influence symptoms of depression. Hsu & Lai (2004) employed a daily listening regiment of soft music for Taiwanese in-patient psychiatric individuals to affect depression. Participants \(N = 54\) were given their choice of music from one of six types of recordings: Baroque, country, easy listening, natural sound, Chinese folk song or Taiwanese folk song. Participants listened to the music at a low volume for 30 minutes every night at 6 pm. The results of the study indicated significantly better scores on the Zung Depression Scale as well as better scores of depression when compared to the control group that did not listen to music.

In a related study, Erkkila et al. (2011), found that live music therapy with patient participation was effective in reducing anxiety symptoms and improving general functioning in psychiatric patients diagnosed with depression. Seventy-nine working age individuals diagnosed with uni-polar depression were divided into an experimental and control group. The control group participated in 5-6 individual counseling sessions with specially trained nursing staff, while the experimental group participated in improvisational-based live music therapy sessions for up to 18 bi-weekly sessions. Both groups received regular medical treatment while participating in the study. Rigorous research methodology included a 15 month training regimen for the 10 music therapists leading the music therapy groups. Video recordings were made of all sessions in order to obtain observational data of the participants, but also to insure consistency in treatment implementation. Analysis of the data showed that the experimental group scored significantly better from pre to post tests at the 3-month follow-up on the Montgomery-Asberg
Depression Rating Scale, the Hospital Anxiety and Depression Rating Scale, and the Global Assessment of Functioning test. The researchers noted that participant responses to the music therapy treatment indicated that active-music making was an important part of the patient experience. Drumming was highlighted as a way participants were able to express emotions through changing the style and intensity of beats or playing the drum with a mallet or simply with their hands.

**Music and Mood in Medical Settings**

Music therapy has specifically been used as an alternative or supportive intervention to affect mood. Many of these studies have taken place in the medical setting to help patients with pain and anxiety. Whitehead-Pleaux, Zebrowski, Baryza and Sheridan (2007) studied the use of music therapy on pediatric pain and mood. They used patient preferred music provided by live singing and instrument accompaniment by a trained music therapist. Time sampling indicated that there was a significant difference between level of engagement in the music therapy and behavioral distress which included mood measurements. Barnason, Zimmerman and Nieveen (1995) studied the effect of music interventions on anxiety in the patient after coronary bypass grafting. The researchers compared the differences between anxiety and mood for three groups receiving sedative preferred music, a music therapy video of sedative music or a rest group. Results indicated that the group listening to preferred sedative music showed significantly improved mood ratings. No significant differences were found in the other two groups.

Waldon (2001) compared music-making sessions and music responding sessions for their effect on mood in oncology patients as measured by the POMS. The music making condition required participants to help in the creation of music by song-writing or playing instruments. The music responding condition involved listening to music and participating in lyric analysis or discussion. Participants ($N = 11$) were divided into two groups and received 8 music therapy sessions over a 10 week period. Pooled pretest and posttest scores for all the sessions revealed a significant improvement in mood state scores from pre to post sessions levels. Both music conditions showed significant improvement, but no significant differences were found between conditions.

Measures of mood are often dependent variables in studies with participants with long-term illnesses or hospital stays (Cassileth et al., 2003; Haneishi, 2001; Waldon, 2001). Cassileth et al. (2003) explored the use of live music therapy on participants ($N = 62$) undergoing stem cell
transplant. Live music therapy for 20-30 minutes was compared to standard hospital care and the
POMS survey was given every 3 days. Participants in the music therapy group scored 28%
lower on the combined anxiety/depression scale and 37% lower on the total mood disturbance
score when compared to the control group scores. Both results were statistically significant in
comparison. The researchers noted that improvements in mood scores were immediate after
receiving music therapy, but also observable throughout the participants’ stays at the hospital.

Music, Mood and Memory

Sousou (1997) studied the effect of melody and lyrics on mood and memory.
Participants were asked to listen to instrumental music or to mentally create a melody as they
read lyrics to themselves. Although two types of lyrics were used, “happy” and “sad”, analysis
suggested that the mood of participants was influenced by the music played and not the lyrics.
De l’Etoile & Thaut (1993) also examined the effect of music as a mood catalyst on recall. The
importance of their findings was that participants who had participated in music for mood
induction recalled significantly more information than participants in a no-music control or a
group where music was used as background during encoding. This study was an early and
important indication that further research should be done regarding the use of music to influence
mood.

Music and Mood during Exercise

Seath and Thou (1995) looked at the effect of music on the perception of effort and mood
during aerobic-type exercise using popular music. Results indicated highly significant
differences between the use of music and no music relative to the perception of both effort and
feeling. Two other studies involving the use of exercise looked at the effects of listening to
music on mood and anxiety during running on a treadmill to exhaustion (Macone et al., 2006)
and the effect of music on mood during bench stepping exercises (Hayakawa, Miki, & Takada,
2000). Macone et al. (2006), used a specific music recording that was familiar to the
participants, but not necessarily participant preferred. The music did not have lyrics and was
played at a tempo within a range of 140-160 beats per minute. The POMS and the State Trait
Anxiety Inventory (STAI) measures revealed that participants in the music listening group
experienced significantly less tension, depression, fatigue, confusion and state anxiety.
Hayakawa et al. (2000), studied the effects of three different kinds of music on a 60-minute

13
bench stepping exercise. Participants (N = 16) were middle-aged women in Japan who listened to traditional Japanese folk songs, aerobic dance music or exercised without music. They found that the participants reported significantly less fatigue with aerobic dance music and Japanese folk songs than with no music during exercise. The aerobic dance music was also associated with significantly more vigor and less confusion.

**Summary of Findings of Music on Mood**

The literature base regarding music and emotions is relatively large and diverse. Music and its effect on emotion have been studied in a variety of settings, including psychiatric, medical, educational, and for exercise. Some common themes are evident in the review of related literature. Music seems to be most influential on mood and emotions when it involves the participant’s preferred music and reflects a current mood state or activity level. The quantity of music intervention also seems to have an effect on significant findings. Finally, active music-making or active-listening seem to be key elements in participant involvement and mood responses. Gfeller (1990, p. 53) summed it up well by saying that even though music may be a way to evoke emotional responses in the listener, it may also be a vehicle for expressing past emotions.

**Music and Other Influences on Behavior in the Psychiatric Setting**

A few of the aforementioned articles and brief discussion in the introduction section have established that individuals with serious mental illness are often unpredictable and prone to disruptive behavior (Nolan, 2003; Steinert et al., 1999; Tardiff et al., 1997). Psychiatric hospitals actively work to address these issues in a number of ways. One of the most unique ways to manage and decrease disruptive behaviors on an in-patient acute psychiatric unit was humor-based activity and intervention (Higueras et al., 2006). In this study, researchers examined two 83-day long periods using a global disruptive index. During the experimental period, professional actors engaged psychiatric individuals and staff in humor-centered stories, games and activities. Results of the study indicated a significant decrease in the global disruptive index, including attempted escape, self-injury and fighting. An extensive review of literature of environmental design by Devlin and Arneill (2003) found many more ways that hospitals have tried to influence behavior including, providing more windows and outside light, playing background music and decreasing ambient noise in the environment.
Many hospitals have moved toward a treatment mall style of patient care and education. The treatment mall concept emphasizes psychiatric individuals’ choices in a range of PSR programs (Longo et al., 2002; Reger et al., 2003). PSR programs typically include a variety of clinical services, including recreational and music therapy (Hutcheson et al., 2010). Mowbray et al. (2005), advocate for the next step in PSR programming, called Supportive Education (SEd), which seeks to promote individuals with mental illness to attend higher education. The SEd program is part of the overall movement towards the wellness and recovery model (Swarbrick, 2009).

Music therapy interventions have also been successful in promoting more appropriate behavior in the psychiatric setting. An early form of the PSR model was called, “therapeutic community treatment.” Cassity (1976) compared participants \((n = 7)\) in group guitar lessons to participants \((n = 5)\) in a group without music and measured changes in peer acceptance, group cohesiveness and social relationship. The experimental music group scored significantly higher from pre to post test for peer acceptance and group cohesiveness and made 38.7% more choices and gave other peers 31.4% more choices.

Another early study in using music investigated the effect of soothing or stimulative background music on the client-therapist relationship. In this study, Pruetter and Mezzano (1973) examined 10 minutes of counseling between counselors and graduate students. Results indicated that when soothing background music was being played, there were more interactions overall and more affective interactions between the counselors and students. The researchers noted that even a lack of background music allowed more affective interactions than stimulative music. Background music also proved to be highly influential on behavior in a study observing the interactions of psychiatric patients in a public free-time area of an in-patient facility (Harris, Bradley & Titus, 1992). Researchers discovered that hard rock or rap music played free field produced more inappropriate behaviors among participants than easy listening or country music. Researchers in this study did not speculate about why or how the music may have prompted these behaviors since the study did not control for lyric content or song choice.

Cevasco, Kennedy and Generally (2005) reported that competitive music games increased cooperation and teamwork among female patients in a substance abuse program. Silverman (2009) studied the effect of music therapy on verbalizations in the psychiatric setting. He did not find statistically significant differences between an experimental group receiving
music therapy and the control group for amount of verbalizations, although the music therapy group was reported to have more overall verbalizations. In addition, the music therapy groups were better attended than the discussion groups.

Overall, the literature regarding the effect of music on behavior in the psychiatric setting supports music for therapeutic intervention. Public statistics and the experience of the researcher attest to the higher levels of inappropriate and even harmful behaviors occurring on in-patient psychiatric units as compared to behavior in the general population. Appropriately organized and facilitated music activities have been shown to decrease inappropriate behaviors with patients who have serious mental illness. In addition, music activities may help to increase group cooperation, teamwork, and cohesiveness while improving the number of quality interactions with healthcare workers.

**Active Music-Making**

Active music-making has been compared with more passive music interventions for its effect on mood. Active music making in the form of singing, moving and playing instruments may be more powerful in affecting mood levels because it increases individual participation. Cevasco (2006) found that patients with Alzheimer’s disease demonstrated more than 80% participation during rhythm activities. She also discovered that participants were more engaged in singing, moving and playing when there was a rhythmic accompaniment on a djembe drum as compared with piano, guitar or autoharp accompaniments. Maratos, Crawford and Proctor (2011) editorialized on the topic of music therapy for depression with an emphasis on active music-making. They termed it, “active doing,” which they described as the client playing music instruments with the therapist. They suggest that active music-making is important for therapy with clients with depression because it provides aesthetic, physical and relational value. They further argue that music-making may help to draw out a reclusive client through moments of improvisatorial instrument playing and physiological connections through rhythm and auditory stimulation.

Some of the aforementioned studies have also emphasized the importance of active music-making in therapy and research related to music and mood. These studies help define active music-making in therapy as sessions including, but not limited to: musical stories, musical games, instrumental improvisation, rhythm practice, playing instruments, and improvising lyrics.
(Cassileth et al., 2003; Erkkila et al., 2011; Wen-Ying et al., 1998). Although Waldon (2001) attempted to compare music-making therapy sessions with music “responding” therapy in an oncology setting, he did not find a significant difference between the two conditions when comparing scores from a POMS survey.

Silverman and Marcionetti (2004) used a single session music therapy intervention that included drumming, songwriting, music games and other music activities to affect mood in individuals with serious mental illness. Mean scores for all self-report measurements improved after the single-session music therapy groups except for the group participating in lyric analysis as the music therapy intervention. Walworth, Rumana, Nguyen, & Jarred (2008) used live music therapy sessions to affect quality of life indicators, medications and hospital length of stay as measured by self-report analog scales. Music therapy consisted of patient preferred music before and after surgery. Results indicated statistically significant differences for anxiety, perception of hospitalization, relaxation and stress, although no statistically significant differences were found for mood or pain.

Brown, Gotell and Ekman (2001) introduced the idea of “music-therapeutic caregiving” in a discussion and review of case studies with music therapy and dementia. Music therapists often use music to provide relaxation or direction while patients with dementia go through the activities of daily living. Sometimes recordings may be useful for background music when a therapist is not available, but Brown et al. (2001) proposed the use of active singing by caregivers to help patients with dementia. They argued that live singing increases attentional behavior and can even be used for patients with late-stage dementia.

Another researcher used singing, structured drumming and rhythmic improvisation to test the effect of music therapy-based bereavement groups on mood and behavior of grieving children (Hilliard, 2001). Tests for mood and behavior indicated a significant difference among subjects in the experimental group for the children in the home environment, but not the school environment. Two notable studies looked for differences in music therapy interventions using active music-making interventions. Silverman (2005) explored music therapy games in the psychiatric setting. He found music therapy games to be of equal value as songwriting, group drumming and lyric analysis in addressing goals and objectives in the psychiatric setting. He argued that music games are enjoyable and allow for appropriate competitiveness while fostering good group dynamics, flexibility and active participation. A second study compared using
movement to music, rhythm-based activities or musical games to decrease depression, stress and anxiety in females in a substance abuse rehabilitation program (Cevasco, 2005). The results of the study did not find a significant difference between types of interventions, but did reveal a decrease in depression for many of the participants.

Recreational Music Making (RMM) is a formalized music-making protocol that has been developed by Remo, Inc. in coordination with the Clavinova piano program (Bittman et al., 2003; Bittman et al., 2004; Bittman et al., 2005). The essence of this protocol is to foster group music-making with a sense of nurturing and camaraderie in a friendly environment for musical expression. Bittman et al. (2005) used RMM to study the stress response in volunteers \(N = 32\) using blood samples and the POMS survey. An experimental and control group were both required to put together a 500-1000 piece puzzle in one hour with verbal interruption every 10 minutes saying that other participants were doing better. Blood samples were compared for genetic stress markers and found that 19 out of 45 stress markers for participants in the experimental group had reversed after one hour of rest. This result was significantly different from the results of the control group that had only 6 out of 45 stress markers reverse after one hour of rest. The POMS only indicated a significant difference in a 73% increase in vigor/activity and a 60% decrease in fatigue/inertia for the experimental group as compared to the control groups.

Anecdotal evidence during the current study, as well as discussion by some of the researchers in the reviewed literature who have used active music-making, point to better attention and participation rates for groups using active-music making. Participants have expressed enjoyment and desire to repeat the activities after being involved in music-making experiences. The literature highlights that improvisational music-making and instrument playing are important opportunities for building therapeutic rapport with clients and eliciting participant responses. Research using active music-making has sometimes discovered more significant findings with active music-making treatment than passive music listening. Some studies have also demonstrated that active music-making can be modeled and taught to staff or health care workers so that music interventions can be used more effectively when a therapist is not present.
Group Improvisational Drumming

A facilitated group drum circle may be described as a guided improvisational group music ensemble or experience. In his book, *The Healing Power of the Drum*, Freidman (2000) described improvisational music making in a variety of settings as a keystone practice for music therapy intervention. His book explained the use of drumming for groups and individuals in this framework. Blackett and Payne (2005) implemented a group drumming intervention with participants in a substance abuse treatment program. They based their treatment on several categories of drumming objectives such as drumming to enhance communication, drumming to increase social interaction and drumming to reduce stress. These categories were developed from an extensive review of literature regarding group drumming (Blackett, 2003).

Bittman et al. (2003) used a group drumming protocol with long-term care workers over a period of six weeks. Their research indicated that group cohesiveness and communication evidenced during drumming were two of the factors that could produce cost-savings for a long-term care facility. Kaplan (1999) also found that small group drumming improved the group cohesiveness of college students better than music listening or aerobic exercise.

The importance of the social aspect of group drumming is further emphasized by Stevens (1997) in her description of drum circle activities for the mental health setting. Camilleri (2002) described and evaluated a drumming for community program at a charter school. In both cases, the authors described the natural ways that group drumming fostered verbal and non-verbal social interaction while also promoting teamwork and group cooperation. The third category proposed by Blackett and Payne (2005), drumming to reduce stress and anxiety, fits well with the ideas of drumming to enhance communication and socialization. Bittman et al. (2003) found significant improvement in the mood and stress levels of health care workers as measured by the Maslach Burnout Inventory and the Profile of Mood States.

Silverman (2007) conducted a survey of music therapists working in psychiatric facilities. He found that almost half of the respondents reported using drum circles in group therapy. In order to provide more structure and training for the improvisational group drumming model, Matney (2007) and Stevens (2003) have provided guides for using drumming as therapy with different populations. Since they are both board-certified music therapists, their clinically oriented handbooks for leading drum circles often serve as a foundation for developing the skills outlined by the American Music Therapy Association (AMTA) competencies (AMTA, 2008).
Stevens (2003) uses drum circles and group drumming to enhance wellness and structure therapeutic verbal discussion. Her book provides much direction for the drum circle facilitator on how to use non-verbal communication to facilitate community drum circles, as well as how to encourage discussion of ideas and emotions that surface during group drumming. Matney (2007) is a music therapist who is also a trained percussionist. The information in his book is a combination of instruction about how to facilitate group drumming and a discussion regarding the use of drumming in common music therapy settings.

As group drumming has become more prevalent as a tool for music therapy treatment, more attention has been given to group drumming in the music therapy degree curriculum. Tague (2012) developed a music therapy drumming curriculum for college students that utilized successive approximations, chaining of information and practice, periodic checkups and simulated practice as its core components. Another key factor in the curriculum was to provide the students with multiple opportunities to lead improvisational group drumming in an atmosphere of supportive feedback. Participants (N = 11) reported their level of confidence and perception of drumming and leadership skills on surveys taken over the course of a school semester. Mean confidence scores data were analyzed through graphical presentation. Mean self-reported skill level scores were also compared to the mean scores given by the instructor for each question on the skills survey. Examination of the data indicated a positive trend for self-reported confidence and drumming skill levels. In addition, skill level trends supported the idea that student confidence increased as skill level increased. Overall, the findings suggested that classroom instruction to increase drum skills and promote performance experience in a supportive group environment may increase the self-confidence of music therapy students in using drumming in therapy.

Friedman (2000), a psychotherapist who advocates for group drumming, provides many anecdotal accounts of the power of drumming in people’s lives in his book, The Healing Power of the Drum. These stories are instructive, and he comments on ways to transfer ideas from the individual examples to larger populations. Kalani (2004), another pioneer of modern community drum circles, gives very detailed descriptions of how to facilitate drum circles. Both the Kalani (2004) and Stevens (2003) books come with supportive audio recordings that have valuable background tracks for use in drum circles. Stevens and Burt (1997) were early adopters of the idea of using drumming in the mental health setting. In their book, Drum Circles: Theory and
Application in the Mental Health Treatment Continuum, they argued that drumming should be explored in the setting of mental health. Specifically, they advocated for more research in applying group drumming, evaluating its effectiveness and especially its potential impact on populations in mental health (Stevens & Burt, 1997, p. 182).

**Group Empowerment Drumming on Mood**

Research using therapeutic drumming protocols has shown some significant results in increasing mood scores after participants received a series of recreational music-making sessions. The Remo sponsored HealthRHYTHMS program is based on the protocol developed for a research study examining the effects of group drumming on certain immune system parameters (Bittman, Stevens & Bruhn, 2001; Bittman et al., 2001). A typical group empowerment drumming session like the one in HealthRHYTHMS may include but not be limited to: (a) an ice-breaker activity (e.g., a shaker-egg pass), (b) basic instruction on how to play hand drums, (c) rhythmic naming by playing the drums on word syllables, (d) taking turns being a group drumming facilitator, (e) guided-imagery drumming or relaxation, and (f) echo drumming and other rhythm games designed to facilitate improvisational playing, group cohesion and spontaneous expression of emotions.

Bittman, et al. (2003) used group empowerment drumming, combined with music-making on Clavinova digital pianos in a study to see if recreational music-making could reduce burnout and improve mood states in long-term care workers. They discovered a significant improvement of multiple burnout and mood dimensions. In a later study, Bittman et al., (2004), found that recreational music-making using the HealthRHYTHMS drum protocol significantly reduced burnout and improved mood in first year nursing students as measured by the Maslach Burnout Inventory and the POMS. Blackett (2005) used the HealthRHYTHMS protocol one time per week across seven weeks for a small group (N = 7) of adults in a drug treatment program. In addition to supporting the findings in previous research that group drumming facilitates communication, group cohesion and emotional expression, he found that the group drumming sessions increased participant attendance and retention rates. Slotoroff (1994), who conducted research long before the more formalized HealthRHYTHMS protocol, used a drumming technique to help victims of trauma with assertiveness and anger management.
A pilot study by Tague (2011a) demonstrated that group drumming could be offered as part of a PSR program for classes on an inpatient psychiatric unit. A group drumming protocol was devised that included an ice breaker activity, call and response drumming, echo drumming, participants as drumming facilitators, and group instrumental improvisation. A variety of world music percussion instruments were utilized without negative incidents, including, but not limited to: djembe drums, tubano drums, frame drums, conga drums, tambourines, axatse shakers, egg shakers, jingle sticks, guiros, ocean drums and rain-sticks. Participants’ self-reports of mood were taken using a modified visual analog mood scale. Results of the data showed that there was an improvement in mood scores from pretest to posttest and an informal review of behavior scores from hospital records and anecdotal reports from nursing staff pointed towards a decrease in negative behavioral incidents on the psychiatric unit in the evening hours on dates when the drumming protocol had been implemented.

**Teaching for Transfer**

Some of the early research into developing teaching methods that enhanced the transfer of ideas into action was conducted by Poche, Yoder and Miltenberger (1988). Their study involved teaching school children proper actions in response to approaching strangers. The researchers compared an instructional video alone to a video plus behavior rehearsal to a standard safety program. Only 10.5% of the children who participated in behavioral rehearsal had unsafe responses. Greater than 43% of the children who only received standard safety training exhibited unsafe responses.

Ninness, Fuerst, Rutherford and Glenn (1991) further clarified this idea of teaching for transfer during a study teaching social skills to adolescents who were emotionally disturbed. Treatment consisted of modeling, role-playing, instruction and self-reinforcement to improve on-task and socially appropriate behavior in the classroom setting. Although the participants made good improvements in behaviors in the classroom, the researchers thought it important to note that behaviors did not improve in other settings outside of the classroom until participants were given explicit instruction to implement behavior modification strategies and self-reinforcement in between classes. The idea of teaching for transfer of skills from one setting to another is also supported by Maratos, Gold, Wang and Crawford (2008) in a study published in the Cochrane Reviews. They found that music therapy was most effective in reducing depression symptoms.
when the music therapists explained to the participants what music therapy was and why they were there.

In a related study, Kahans and Calford (1982) examined attitude changes in psychiatric patients or medical students after listening to different genres of music recordings or a live performance. They found that there was a significant change in participants’ attitudes towards the therapist as measured by semantic differentials when the music being presented was the preferred music of the therapist and when the therapist implicitly or explicitly conveyed this enthusiasm for the music to the participant audience.

**Purpose**

Mood is an important indicator of overall mental health. Improved mood is often a prerequisite for discharge from in-patient psychiatric treatment because of its relation to depression, post discharge medication compliance and successful discharge planning to community-based living. Treatment with general music therapy and activity-based therapy has demonstrated an effect on improving mood, decreasing stress and increasing appropriate emotional expression for psychiatric patients. Very little research has explored the effect of group drumming with psychiatric patients, although its use with other populations has demonstrated a positive effect on mood and reducing stress. Research investigating the effect of drumming on mood improvement, and the transfer of behaviors associated with improved mood to the general psychiatric unit, may aid patients in treatment and recovery.

Therefore, the purpose of this dissertation was to investigate whether improvisational group drumming will improve the mood of in-patient psychiatric consumers and increase socialization and positive behaviors observed on the unit. Group drumming was compared with a non-drumming general music therapy session and a non-music activity therapy group. The treatments were designed to be a part of the regular hospital PSR programs. Goals and objectives for this dissertation reflected established aims of the PSR program, namely: (1) active participation in facilitated group drumming to improve mood, (2) teaching and practicing behaviors to improve social interaction and appropriate behaviors on the units, and (3) evaluating the effectiveness of different types of activity therapy and expressive arts groups to improve the mood and social interaction of individuals in psychiatric treatment.
CHAPTER THREE

METHOD

Participants

Participants were male \( (n = 42) \) and female \( (n = 24) \) patients with serious mental illness in a locked psychiatric treatment hospital with an average patient stay of seven days. See Table 1 for the participant demographic details by psychiatric unit and treatment condition. The hospital is part of a statewide system of psychiatric hospitals in the Southeastern part of the United States. Participants volunteered to take part in this study and had the option of participating in treatment condition activities without completing the pre or posttests. Participants for the study were individuals scheduled for regular PSR programs, including music therapy, spirituality, activity therapy, hygiene, stress management, money management, health, and community involvement. New patients who had not yet been referred for PSR groups were also allowed to participate. Individuals dual-diagnosed with developmental disabilities or who were unable to read and fill out the consent forms or dependent measures without asking for assistance or accepting assistance with reading the consent forms and the surveys were not included in the study.

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>MTD ( n = 22 )</th>
<th>GMT ( n = 22 )</th>
<th>D ( n = 22 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>13</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Female</td>
<td>9</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Admissions</td>
<td>11</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Female Admissions</td>
<td>9</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Co-ed Step-down</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
Design

This study utilized a pre and post testing with single-session intervention across three conditions: music therapy (MTD) drumming and discussion \((n = 22)\), non-drumming general music therapy (GMT) and discussion \((n = 22)\), and non-musical activity therapy (D) and discussion \((n = 22)\). Group assignment utilized a convenient randomized sample based on individuals who chose to come to the groups at the offered regular group times for PSR balanced across three different units of the hospital. Two participants in the MTD group were randomly excluded from the data in order to equalize the sample in each treatment condition. Individuals were encouraged to attend group sessions when offered on their unit in accordance with standard hospital policy without any additional incentives. This prompt included the researcher and staff making unit-wide announcements regarding the groups with verbal encouragement to attend.

Music treatment and “no-music” conditions were rotated across three different psychiatric units to balance for gender and acuteness of symptoms. A schedule was created before treatment sessions began that listed the dates and times for sessions each week. Only one treatment group was held on a unit per week over the 12 week period. A total of 24 treatment groups were completed. The three conditions were rotated through the three units each week so that each unit received all three treatment conditions before repeating a condition. This order continued until enough participants were seen for each condition \((n = 22)\) and the condition discontinued from the rotation. The MTD group met ten times, the GMT group met eight times and the D group met six times. Sessions were conducted for approximately forty-five minutes during the last PSR group offered in the afternoons on Tuesdays, Wednesdays and Thursdays.

Dependent Variables

The primary pre and post test variable for this study was psychiatric individuals’ self-perception of mood. A secondary dependent variable included hospital staffs’ observations of patient behavior on the unit. These data were measured 30 minutes after the end of group treatment sessions. The third dependent variable was observation of on-task and interpersonal interactions during each session. These data were scored by the researcher and a trained, independent observer watching video recordings of each session.
Measurements

Mood data were collected pre and post by self-report. The Visual Analog Mood Scale (VAMS) (see Appendix C) as adapted by Jones (1998) is an eleven item self-report survey based on groupings of emotion words. Each word grouping uses a 100 millimeter line anchored by Not At All for the 0 point and Extremely, Intensely Feel at the 100 millimeter mark. The researcher added pictures of a smiling face and frowning face to the anchor points as a visual cue. This was deemed necessary due to limited cognitive capabilities of similar patients revealed in prior research by the principle investigator (Tague, 2011a; Tague, 2011b). These studies revealed that a visual Faces scale provided reliable results in comparison to the Positive Affect and Negative Affect scales (Watson, Clark & Telegen, 1988). In addition, the Faces scale enabled a greater number of participants to successfully complete a survey as a dependent measurement.

Participants for the current study took the modified VAMS as a pretest and posttest for each experimental treatment condition. Each VAMS test was scored by taking the sum of the millimeter measurements for each of the 11 individual questions. Answers to each question were operationally defined as one of the following marks: (a) a slash, period, checkmark or other mark on the line, (b) a word or number written on the line (measured at where the word crossed the line, or from the center of the word if written on the line), (c) a circle around the 0 or 100 mark, or (d) a circle around one of the faces. Actual marks on the 100 millimeter line were used as the answer for each question when a participant also wrote down a word or number on or near the line. Measurements for questions one and two (the only two positive emotions) were inverted for analysis so that the lower the score, the better the mood. For example, a score of 20 indicated a more positive mood than a score of 120. The lowest possible score was 0 and the highest 1100.

Transfer behaviors on the living unit were collected 30 minutes post session by the Health Service Technician (HST) or nurse on each unit. The 24 Hour Observation Sheet was a standard observational measure used by hospital staff (see Appendix D). Individual behavior for patients on a unit was entered into the 24 Hour Observation Sheet in 30 or 15 minute increments based on individual treatment plans. Data were collected for each subject 30 minutes after treatment by the HST or a nurse on each unit. The researcher extracted data pertaining to participants by looking at the 24 Hour Observation Sheets each week after treatment groups had been completed. Each entry on the observation sheet included at least one of thirty-nine location codes and twenty-three behavioral codes that described patient activities for the previous 30
minute period. Behavioral codes were assigned a positive or negative numerical value for evaluation of data based on recommendations from an expert panel consisting of a registered nurse, an activity therapist and an HST (see Appendix E). Codes that indicated social interaction or cooperative behaviors such as, “cooperative”, “calm”, “interacting with others”, and “happy” received a positive numerical value. Codes that indicated isolation or uncooperative behaviors such as “uncooperative”, “agitated”, “withdrawn” and “threatening” received a negative numerical value. In addition, hospital records were reviewed for significant incidents that occurred during those times that would have included medication refusal or aggressive acts by the participants on the unit. If an incident was recorded during the observed times it was scored as minus 2 points. Each participant received a single score for each observation period based on the sum of values associated with the codes assigned for the observation interval. The higher the score, the more appropriate or socially interactive the behavior.

On-task and interaction behaviors during sessions were collected via observation of digital video. The researcher and a trained graduate student independently viewed the recordings by using a 15 second observe and 5 second record interval method. These observations were made using an adapted Form K: Interpersonal Observation sheet (see Appendix F) to record observed behaviors (Madsen & Madsen, 1998). Each 15 second observation interval was viewed for participant on-task behavior as well as verbal, expression or contact behaviors showing approval, disapproval or neutral interaction toward peers. The researcher and trained observer independently viewed 20% of the observations. Reliability was calculated by dividing agreements by agreements plus disagreements and resulted in a mean rate of 93%.

The category of on-task behavior was operationally defined as a participant demonstrating the following behaviors during the observation interval: (a) active listening, as evidenced by looking at the person speaking, (b) following directions, (c) active participation, or (d) appropriate verbal communication (taking turns in a conversation, asking questions about the topic). Any of these behaviors or combination of these behaviors for the duration of the record interval were counted. Approval, disapproval and neutral expression behaviors were observed for peer to peer interaction. All participants in a group were observed simultaneously during each interval. Multiple instances of expression were possible for each interval; however, the direction of expression was not recorded. Observers followed behavioral definitions for
expression as outlined in Madsen and Madsen (1998). The mean percentages for on-task, approval, disapproval and neutral expression were calculated for each session (see Appendix G).

**Independent Variables**

The independent variables for this study were a music therapy drumming group, a general music therapy group and a non-music activity group. A fourth independent variable was multiple therapists leading groups. This was controlled as much as possible. The researcher, a Board-Certified Music Therapist (MT) with over ten years of experience, led the GMT and MTD groups. Both the GMT group and MTD group were also led by other Board-Certified Music Therapists. The researcher and one of the other music therapists rotated group leading every week between MTD and GMT treatment groups. The non-music discussion groups were facilitated by certified recreational therapists as assigned by regular hospital programming.

**Protocols**

The content of the three treatment sessions was designed to include five topics recommended in the reviewed literature: cooperation, teamwork, friendliness, compliments, and helpfulness. Topics for discussion in the three groups were included based on the categories of themes for group drumming organized by Blackett (2005) and evidence that group drumming may increase appropriate social behaviors and communication (Bensimon et al., 2008; Grocke et al., 2009; Silverman, 2009; Tang et al., 1994). The session leaders for all three treatment groups were free to address these themes in accordance with their professional standards of practice and specified type of activity, although researcher-created lesson plan outlines were provided. Each treatment protocol also incorporated role-play and direct instruction to encourage participants to demonstrate appropriate social interaction on the unit according to recommendations in the research of Ninness et al. (1991) and Maratos et al. (2008) regarding teaching for transfer of skills. The recreational therapists were directed to not include any music activities in their groups. The treatment protocols were created to allow for activities lasting approximately 35 minutes during the standard 45-50 minute PSR group time. The balance of the remaining time was used to obtain consent and data for the dependent variables.
Music Therapy Drumming

The experimental MTD group was an improvisational drum circle group facilitated by the researcher or one of two other music therapists. A group drumming protocol was developed and adapted from the HealthRHYTHMS group empowerment drumming model (Bittman et al., 2001) and a pilot study conducted by the researcher (Tague, 2011a). Participants in the group drumming intervention used hand drums, shakers, and other small percussion while sitting in a circle. Activities in the MTD group included an ice-breaker activity, a rhythm passing game, call and response drumming, group facilitation and instrument sharing. A sample session outline can be seen in Appendix H.

General Music Therapy

The GMT group was a music therapy session utilizing music therapy activities that were commonly part of PSR group treatment classes. The researcher or one of two other music therapists led these groups using a guitar for accompaniment, but no other instruments. This study was designed to provide maximum contrast between a MTD group using musical instruments, the GMT group using music activities without instruments, and a non-music activity group. Participants participated in the following general music therapy activities: a hello song, group singing, music listening, lyric discussion and a goodbye song. A more detailed session outline can be seen in Appendix I.

Activity Therapy

The D group was a non-music activity and discussion group in the style of non-music activity therapy groups conducted for the hospital PSR program. Two different recreational therapists led these groups. This group participated in learning and discussion including: question and answer, small group work and role-play. A sample outline can be seen in Appendix J.

Therapists

As part of the PSR program, the activity therapy department provided music, art and recreational therapists to facilitate unit-based and treatment mall groups and classes. Other hospital staff such as social workers, doctors, nurses and trained PSR staff have also traditionally led PSR groups. This study used music therapists to lead the GMT and MTD groups and
recreational therapists to lead the D groups. All of the therapists included in this study were board-certified in their respective fields with at least one year of experience in the psychiatric setting.

**Setting**

Three separate psychiatric units at the same regional hospital were used for conducting activities for the treatment groups. The dining room or patio areas were used on the single-gender acute care units and the co-ed groups were seen in a classroom setting. Treatment groups were only held during the last PSR group on these afternoons to allow for an hour of free time on the units where observation could occur without any other organized activities (i.e., snack time, dinner, and activity groups).

**Materials**

Participants in the GMT and D groups utilized forensic pens or markers, and props such as a ball or short pieces of string. The group leaders in the GMT group used an acoustic guitar for accompaniment. Recorded music was played free-field on a Sony CFD-S05 with volume adjusted by the principle investigator or group leader in between 65 to 70 on the Sony volume indicator. Percussion instruments for the MTD group utilized world music instruments including approximately three free-standing hand drums from two to three feet tall, three African-style hand drums that required holding in a lap or by the knees, an ocean drum, rainstick, cabasa, pair of claves, tambourine, egg shakers, tone block, kokirico, ten-inch frame drum, and a guiro. Video recordings of each session were made primarily using a Canon Digital Camera, model FS100, but also a Panasonic Lumix camera, model DMC-LZ7, when two sessions occurred at the same time.

**Procedure**

All group sessions began with an orientation to the research and explanation of and obtaining of consent. Consenting participants filled out the VAMS surveys before the activities began in each group. In the event that a patient who had previously taken part in one of the groups was part of another research group, he or she was still invited to participate, but data were only used from the first session attended. The VAMS surveys were administered again at the end of each session. The VAMS surveys were number coded to protect participant identity.
All sessions were approximately 45 minutes, although there was variation in the amount of time for treatment activities based on how long it took participants to complete consent forms and respond to the VAMS surveys. HSTs completed the 24 Hour Observation sheets 30 minutes post session daily, in accordance with guidelines learned in hospital staff development training. The principle investigator obtained copies of the 24 Hour Observation sheets from unit staff or manually recorded information for each participant from these records during the evening of each group or the week following group sessions. The group activities for all three treatment conditions were video-taped for behavioral analysis.

The principal investigator held short weekly meetings on each unit that participated in the study. The investigator thanked the individuals for their participation and attempted to elicit responses about their participation in the research activities. A written debriefing form was provided for responses and participants were also invited to verbally comment during the meeting. The debriefing form had a place for participants to provide contact information if they indicated their desire to receive a research report after data have been analyzed. The debriefing form can be seen in Appendix K.
CHAPTER FOUR

RESULTS

Data Analysis for Participants’ Perception of Mood

The dependent variable of mood for the participants in all three conditions was measured by the VAMS survey. Raw data from the VAMS survey consisted of composite scores from the eleven questions on each survey. A one-way Analysis of Variance (ANOVA) for independent samples was used to compare the mood scores between the three groups before and after the three experimental groups. Results of the analysis showed no significant difference between the pretest scores, $F (2, 63) = 0.16, p > .05$ (see Table 2), and no significant difference between the posttest scores, $F (2, 63) = 0.29, p > .05$ (see Table 3).

Table 2

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>18205.12</td>
<td>9102.56</td>
<td>.158</td>
</tr>
<tr>
<td>Within Groups</td>
<td>63</td>
<td>3633299.50</td>
<td>57671.42</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>3651504.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>38874.030</td>
<td>19437.02</td>
<td>.285</td>
</tr>
<tr>
<td>Within Groups</td>
<td>63</td>
<td>4294818.46</td>
<td>68171.72</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>4333692.49</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There were no significant differences in mood scores between experimental groups as measured by the VAMS survey, however all group mean scores showed improvement in mood (see Table 4).
Table 4

*Pretest and Posttest Means: Mood Scores for MTD, GMT and D Treatment Groups*

<table>
<thead>
<tr>
<th></th>
<th>MTD</th>
<th>GMT</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Pretest</td>
<td>364.27</td>
<td>210.76</td>
<td>384.59</td>
</tr>
<tr>
<td>Posttest</td>
<td>294.14</td>
<td>233.74</td>
<td>317.68</td>
</tr>
</tbody>
</table>

Although not significantly different from each other, participant mood scores improved by 85 points for the activity group, 70 points for the drumming group, and 67 points for the music therapy group. However, it should be noted that standard deviations remained relatively large on the posttest (233.74 to 296.74).

**Data Analysis for Participants’ Observed Behavior on Unit**

A one-way ANOVA was also used to compare the scores for participants' social behavior as observed by hospital staff for the 30 minute interval post treatment group. Results of the analysis determined that there was no significant difference between the three treatment groups, \( F(2, 63) = 0.08, p > .05 \) (see Table 5).

Table 5

*One-Way ANOVA: 30 Minute Post Group 24 Hours Observation Sheet Behavior Scores for MTD, GMT and D Treatment Groups*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>( F )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>.212</td>
<td>.106</td>
<td>.081</td>
</tr>
<tr>
<td>Within Groups</td>
<td>63</td>
<td>82.273</td>
<td>1.306</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>82.485</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean scores for participant behavior on the unit were between one and two points for all three conditions (See Table 6). The mean score for the drumming group approached two points while the mean score for the activity group was only slightly lower. A score of two on the 24 Hour Observation Sheet corresponded with behaviors such as talking, being cooperative, interacting with others, participating in outside activities or appropriately visiting with staff.
Neutral behaviors received a score of one point for such behaviors as reading, watching television, or sitting in the day room.

Table 6

30 Minute Post Group Mean 24 Hours Observation Sheet Behavior Scores for MTD, GMT and D Treatment Groups

<table>
<thead>
<tr>
<th></th>
<th>MTD</th>
<th>GMT</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>30 minute observation</td>
<td>1.91</td>
<td>0.97</td>
<td>1.86</td>
</tr>
</tbody>
</table>

Data Analysis of Interpersonal Behavior during Treatment Groups

A two by three chi-square statistic was used to test whether there was any significant difference between the mean percentage social approval and neutral peer to peer behaviors between the three experimental conditions. Social disapproval behaviors were not used in the calculations because the frequencies were too small for analysis. Results indicated that the percentages of social approval and neutral behaviors were not significantly different by type of treatment $\chi^2 (2, N = 66) = 2.91, p > .05$ (see Table 7).

Table 7

Observed Percentage Social Behaviors by Group

<table>
<thead>
<tr>
<th></th>
<th>MTD</th>
<th>GMT</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Approval %</td>
<td>8.90</td>
<td>8.38</td>
<td>7.80</td>
</tr>
<tr>
<td>Social Neutral %</td>
<td>7.00</td>
<td>6.75</td>
<td>15.80</td>
</tr>
<tr>
<td>Social Disapproval %</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Both music treatment groups had lower percentages of neutral behavior than the activity group. A review of the data showed that most neutral expressions were observed as verbal. Verbal neutral expressions were anything that could not be categorized as approval or disapproval. Verbal neutral expressions during experimental groups were generally informational or directional statements of fact between individuals or any other verbalization that could not be clearly understood or categorized by the observer.
A chi-square test was calculated to compare the mean percentage on-task behaviors between the three groups. Results indicated that there was not a significant difference between on-task behavior scores, $X^2 (2, N = 66) = 0.26, p > .05$. Mean on-task behaviors revealed that participants were more on task in the drumming and the music therapy treatment groups than in the activity therapy treatment groups (see Table 8). Mean on-task behaviors for both music therapy groups were almost eight percentage points higher than the mean on-task behaviors for the activity therapy group. One important difference in the three experimental groups was that music or rhythm stimuli were explicitly not used in the activity therapy groups.

Table 8

<table>
<thead>
<tr>
<th></th>
<th>MTD</th>
<th>GMT</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>% On-Task</td>
<td>98.40</td>
<td>99.13</td>
<td>92.60</td>
</tr>
</tbody>
</table>
CHAPTER FIVE

DISCUSSION

The primary purpose of this study was to evaluate the use of group drumming activities as the sole intervention for a single-session therapy group in an adult acute in-patient psychiatric setting. A review of related literature showed that general music therapy and recreational therapy services currently play a standard role in many psychiatric services (NCTRC, 2007; Orr 2010; Silverman, 2003; Silverman 2009). Silverman (2008) described a long history of research using music therapy in the psychiatric setting and recommended more study of group treatment methods and models. Orr (2010) recognized the availability and prevalence of recreational therapy services in the psychiatric setting, but also noted the lack of a consistent and methodological research base in the field.

In addition to introducing group drumming into the acute psychiatric setting, this study sought to explore and compare group drumming with general music therapy and activity based therapy using three dependent variables: a mood survey and two different behavioral observations. In past research, music therapy has compared favorably to psychosocial rehabilitation classes as well as other activity therapies (Heaney, 1992; Silverman, 2009; Silverman 2011). Active participation or music-making has also been highlighted in the literature as an important component for successful treatment (Kelley & Coursey, 1997; Maratos et al., 2011; Silverman 2005).

Group improvisational drumming as part of music-making in treatment has been used in conjunction with music therapy for successful outcomes in the medical and psychiatric settings (Silverman & Marcionetti, 2004; Silverman, 2005; Talwar et al., 2006; Waldon, 2001). The HealthRHYTHMS protocol was notable for its exclusive use of group drumming as an intervention, although it is based on multi-session format. (Bittman et al., 2001; Bittman et al., 2003; Bittman et al., 2005; Blackett & Payne, 2005). Therefore, the purpose of this dissertation was to investigate whether single-session improvisational group drumming will improve the mood of in-patient psychiatric consumers and increase socialization and positive behaviors observed on the unit. Group drumming was compared with a non-drumming general music therapy session and a non-music activity therapy group.
Limitations

The main limitations for this study were the constraints put on the methodological design and logistics within the facility programming. The Institute Review Board for the facility as well as hospital guidelines required maximum choice for participants to be maintained at all times. Participants and other patients were free to come and go through the treatment settings without restriction. Although no major disturbances or incidents occurred during implementation of any of the treatment sessions, there was noise and distraction caused by patients or staff entering and exiting the treatment area, talking or conducting unit duties. Disruptions to treatment also occurred by extensive setup times or setting rearrangements when patients who did not want to participate in the research study still desired to be part of the group activity, but had to be situated off camera.

Silverman (2010) encountered similar limitations in an exploratory study with in-patients who had serious mental illness. He listed time constraints, poor cognitive functioning of participants and logistics of obtaining accurate data as major limitations in the psychiatric setting. The original prospectus for this study planned for 60 minute treatment sessions to allow for time obtaining consent and collecting data. Shortly before data collection began, however, the facility changed its PSR programming to have 45 minute sessions. In the current study, the researcher or group facilitator only had 45 minutes to obtain consent, collect data on the pre and posttest VAMS surveys and run treatment activities. Due to the wide variations in participant cognitive ability, the researcher sometimes spent a significant amount of time carefully explaining and obtaining consent from some individuals and helping them complete the VAMS surveys. Inevitably, this left differing amounts of time for treatment activities between groups.

As previously mentioned, camera placement was sometimes an issue for groups where certain patients wanted to be off camera, but still participate in group activities. Camera placement in some instances degraded film quality due to backlighting or obscuring some participants for certain intervals. It is possible that not all behaviors were accurately observed as a result of these limitations. Future research may benefit from better digital recording equipment and a live camera operator to ensure consistent film quality.

Erkkila et al. (2011) conducted research in with psychiatric patients using randomized treatment groups and highly consistent treatment delivery. They had ten music therapists provide treatment after going through a 15 month training program. They also video recorded
each treatment session to ensure consistent delivery of research protocols. The current study did not require group facilitators to implement the exact same protocol or use a script. Training was provided to facilitators that oriented them to treatment outlines with activities, topics for discussion and instruction on how to teach for the transfer of ideas. Some of the aforementioned limitations necessitated impromptu adaptations in session outlines, timelines and delivery. All treatment facilitators were highly trained and experienced therapists in the psychiatric setting, therefore changes to the session treatment outlines based on patient reactions and responses may have been beneficial to successful treatment and research outcomes. Future research should carefully consider both options of treatment delivery, rigid versus flexible, in designing experimental protocols.

The HST staff at the hospital received training in the use of the 24 Hour Observation Sheet during regularly scheduled staff development lessons. The researcher also received this training for informational purposes. There was wide variation, however, in how different HST staff at different times and on different units scored participant behavior. The hospital has done well to include behavior observations as a part of standard documentation, but variations in quantity of codes assigned to an interval as well as specificity of actions over the 30 minute interval were noted by the researcher. Future research may want to devise a way to standardize scoring of on-unit behavior or use trained observers other than facility staff.

Interpreting the Dependent Measurements

Participants’ Perception of Mood

Results of this study suggest that all three types of treatment may help individuals with serious mental illness to better their temporary mood state. Descriptive data from modified VAMS survey indicated positive changes in mood for participants in all three treatment conditions. Statistical analysis of the mean pretest and posttest scores showed no differences between groups. Therefore, it seems that all three treatment groups were equally effective in improving participant mood scores. The mean improvement in scores for all three experimental groups was 71 points, with the D group improving the most and the GMT group improving the least. It should be remembered that standard deviations of the means were quite large for both pretest and posttest scores. One possible explanation for the large standard deviations is the
combination of patients with different diagnoses and varying acuteness of symptoms, many of whom made little discrimination in scoring individual items.

Research is mixed regarding the efficacy of one type of music therapy or activity therapy over another (Silverman, 2009; Waldon, 2001). There is agreement in the literature that music therapy versus a no contact control group is more effective at improving mood scores (Cassileth et al., 2003; Erkkila et al., 2011; Hsu & Lai, 2004). In the current study, it was interesting that the lowest mean change in mood scores occurred with the GMT group. Anecdotal and observational reports may partially explain this change. The researcher and other music therapists who led the GMT group noticed that participants were more careful in their completion of the posttest VAMS survey than with the pretest as evidenced by participants taking longer to fill out the survey, asking more questions about the meanings of the words and marking fewer extreme scores. The researcher and facilitators suggest that participants may have been more willing to share their true feelings after the music therapy activities as a result of the lyric analysis and songwriting activities that prompted discussions about emotions. The songwriting activity was the second to last intervention in the GMT group. It is possible that participant actions in providing examples of their feelings for the songwriting activity helped them to be more aware of their emotions right before they filled out the posttest VAMS.

**24 Hour Observation Sheet**

Results from the analysis of observations by HSTs of participant behavior 30 minutes post treatment did not show significant differences between experimental groups. Participants from all three groups scored in positive numbers, indicating that they had been involved in more social and cooperative behaviors on the unit since participating in a treatment group. The current study set out to observe behaviors at 30 minutes and 60 minutes post treatment, but changes in the hospital program schedule during the data collection period eliminated the 60 minute observation interval because of a mealtime. Although differences may have appeared in behavior after 30 minutes, Gardner (1985) highlighted research that found improved helping behaviors after mood induction only lasted approximately 20 minutes. Other studies that looked at behaviors up to three months after treatment were not single-session designs and implemented music therapy very intensely several times per week (Wen-Ying et al., 1998). The average stay at the hospital for the current research was only seven days.
The current study used role-play and discussion in the activity therapy treatment group and facilitated discussion in the drumming and general music therapy treatment groups to encourage participants to describe and imagine ways that socially appropriate behavior could appear on the unit. Although these methods of teaching for transfer of behavior are supported by extant research, the same literature describes the difficulty in promoting transfer behaviors to more than one specific setting at a time (Ninnes et al., 1991). Silverman (2009) also attempted to measure a form of psychosocial functioning post music therapy treatment. A blind observer rated participant behavior 22 hours after treatment, but the slightly higher level of functioning for the experimental group was not statistically significant. Lack of comparison data from a no contact control or significant differences between groups makes it difficult to conclude that treatment groups were responsible for the on-unit behaviors.

**Interpersonal and On-Task Behaviors**

Results from the analysis of observations for interpersonal expression determined that there was not a significant relationship between approval and neutral expressions based on treatment group. The two music therapy groups were very similar with regard to mean number of expressions, while the activity therapy group had a much higher percentage of neutral expression behaviors. Many of the approval expressions during all three treatment groups typically occurred during the beginning ice breaker activities, role plays, games or active-music making interventions. The MTD group had the highest percentage of approval expression behaviors. The MTD groups were also the only groups that always sat in a circle. One possible explanation for the high positive interpersonal behaviors is that the circle seating, and close proximity to one another to facilitate instrument sharing, made it easier for participants to see other participants and interact. During some of the MTD and GMT treatment sessions, the instrument playing or song being played seemed like it was a preferred music style for some of the participants. Preferred musical activities were often observed to cause excitement and approval expressions. The high percentage of neutral social expressions during the activity therapy group may have been a result of neutral verbal communications between peers during group puzzle or task activities. Although many of these activities were set up to be competitive or team-based, participants were often observed to use helpful or informational verbalizations toward one another without necessarily showing concomitant approval or disapproval expression.
Participants in the two music groups had very high on-task behaviors. The observed on-task behaviors for the activity therapy group were lower by almost eight mean percentage points, although this was not found to be statistically significant. The one consistent variable missing from the activity therapy group was music. Songs, rhythm and musical instruments were exclusively utilized in the MTD and GMT treatment groups. Active music-making is one factor that consistently promotes high participation and attendance as part of psychiatric treatment (Maratos et al., 2011; Silverman, 2009; Silverman, 2011).

**Implications for Clinical Use**

This study was the first application of group drumming to be used for an entire treatment session in an acute psychiatric setting. This was also the first research trial to use drumming alone to influence the mood of in-patient psychiatric individuals. Results of this study indicate that a group drumming protocol can be successfully utilized as part of the psychosocial training program in a hospital setting. Analysis of the data also confirmed that general music therapy and activity therapy may be beneficial to the mood of patients.

Logistics and safety are always a consideration in the psychiatric setting. Music therapists may feel more confident in bringing a variety of percussion equipment into an acute psychiatric unit. There were no negative behavioral incidents or safety issues with the percussion instruments observed over the ten sessions of music therapy drumming. This researcher suggests that participants considered percussion equipment as musical instruments and not as objects that could be used in a harmful manner. Noise “pollution” on the nursing unit was only an issue on one unit where there was not a closed off room for treatment groups. Although some of the nursing staff commented that the drumming was loud, they also supported the activity and encouraged the patients to participate because they recognized the positive behaviors seen in the activities. In some cases, the MTD group was held outside on a patio when weather permitted.

Participants in the MTD treatment group had the highest mean percentage of approval expression behavior. Every activity in the drumming session protocol required group interaction. Group drumming may offer advantages for treatment related to goals and objectives for patients to improve and demonstrate functional social skills. The group drumming activities also provided opportunities for increased patient and staff interaction. The circular seating
arrangement not only facilitated participant peer interaction, but more often than in the other treatment groups, included hospital staff. Future clinical work and research may want to explore possibilities to use drumming as a stimulus to increase appropriate staff and patient interaction. Building relationships of trust and improving rapport with patients is a constant challenge for hospital staff due to the paranoia and anti-social behaviors comorbid with many psychiatric illnesses.

A further extension to the benefits of social interaction during group drumming is that staff members have an opportunity to model appropriate behaviors. Although there were no instances of participants using percussion equipment inappropriately, patients were able to watch staff participants play instruments and express appropriate emotion through drumming. Modeling appropriate behavior is an important tool in teaching for the transfer of behaviors to different settings (Ninnes et al., 1991; Poche et al., 1988)

Results of this study may also point to the need for therapists to talk about the goals and objectives with clients. Discussion of treatment themes, role-plays and practicing cognitive transfer of ideas to other settings was an integral part of the treatment protocols. Results of this study support other research that found role-plays and active discussion of the purpose behind the music activities to be key factors in promoting behaviors across settings (Maratos et al., 2008; Ninnes et al., 1991). It may be more effective in certain therapy situations to discuss the aspects of teamwork, helpfulness and cooperation that are the foundation of shaker pass activities or improvisation using complimentary rhythms.

**Suggestions for Future Research**

This study may help to promote further research in using group drumming in the psychiatric setting. Silverman (2008) described several areas of consideration for future research with music therapy in the psychiatric setting that would be helpful in replicating the current study or conducting similar research. A no contact control group, for example, would be beneficial in determining differences between activity therapies such as music therapy, recreational therapy or group drumming and regular psychosocial programming (Silverman, 2009). Although it was not possible for this study since all patients may attend psychosocial education classes which include activity therapies, it may be possible in a different research site to have a group that receives routine care and medication, but no activity therapy. Silverman
also recommends using better randomization for establishing experimental groups and including mixed methods in the design.

The current research included a participant feedback form; however, debriefing meetings held on the units at night only elicited minimal responses not adequate for analysis. Future studies may choose to use more standardized dependent measurements. Other scales, such as the POMS, BDI, VAMS and PANAS, have been used in the psychiatric setting, although typically with higher functioning patients or individuals in outpatient treatment. Further exploration of accessible and valid measurements for stress, mood, depression and functioning are warranted. This type of research may also benefit from separating participant results by diagnosis or acuteness of symptoms.

Finally, the most interesting findings from the current research were the behavioral observations and interactions. More research is needed that uses behavioral observation to evaluate levels of participation, number of verbalizations, helping behaviors, and differences between participants in treatment groups or no contact control groups. Future research may explore the interaction of staff and patients using group drumming. Multi-session drumming groups to encourage patient and staff interaction may be more effective than single-session treatment. Drumming groups might also be offered to staff as part of a stress management or wellness program.
APPENDIX A

HUMAN PARTICIPANTS COMMITTEE APPROVAL LETTERS

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 2/10/2012

To: Daniel Tague

Address: -------------------
Dept.: MUSIC SCHOOL

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
The Effect of Group Drumming or General Music Therapy as Compared to Group Discussion on the Mood State and Observed Transfer Behaviors of In-Patient Psychiatric Consumers

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 11/09/2011. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be
required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 11/7/2012 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Jayne Standley, Advisor
HSC No. 2011.7235
February 6, 2012

Daniel Tague
Activity Leader

111201 - The Effect of Group Drumming or General Music Therapy as Compared to Project: Group Discussion on the Mood State and Observed Transfer Behaviors of In-Patient Psychiatric Consumers

Project Status: Approved Until 02/06/2013

Dear Researcher,

The above-referenced project was reviewed by the DPH Institutional Review Board at its regularly scheduled meeting on 01/27/2012. The Board has approved this study until 02/06/2013.

If you wish to continue this project beyond the current approval period, please submit a "Continuing Review Application" before the above expiration date. If you do not submit a renewal application before the expiration date, the approval of your project will automatically terminate. Any involvement with human subjects must cease on the above date unless you have received approval from the Board to continue the project. It is the investigators responsibility to track the deadline.

This approval applies only to the protocol described in your application. IRB review and approval is required before implementing any changes in this project except where necessary to eliminate apparent immediate hazards to human subjects.

If you have any questions regarding this letter or general procedures, please contact the IRB Chair at lufedorowicz@chr.state.ga.us. Please reference the project # in your communication.

Best wishes in your research endeavors,

Luke Fiedorowicz, Ph.D.
APPENDIX B

PSYCHIATRIC INDIVIDUALS CONSENT FORMS
Music Therapy Research Opportunity

My name is Daniel Tague and I am a Ph.D. candidate from Florida State University. You are invited to be in a research study about the effects of group drumming. Drumming will be compared with general music therapy and group discussion by measuring mood state. You are being asked to participate because you are here for an activity group. I ask that you read this form and ask any questions you may have before participating.

Background Information: The purpose of this study is to see if group drumming will improve the mood of patients. This study will also evaluate the effect of group drumming on socialization and positive behaviors. Results may show differences in mood change between music and non-music groups. Results may also show an effect on positive social behaviors.

Procedures: If you agree to take part in this study, you will be asked to fill out an 11-question survey. You will be asked to rate how you feel right now. Each survey will take about five (5) minutes to complete. The surveys will be given to you before and after the group activity. The activity may require playing a musical instrument, singing, listening to music and verbal discussion.

Risks and benefits of being in the Study: This study involves minimal risk or discomforts which are no greater than those experienced in everyday life. You may benefit from this study by experiencing an improved mood state.

Compensation: There is no compensation for this study. Activities will take place during the regularly scheduled group time for activity therapy.

Confidentiality: The records of this study will be kept private and confidential. The survey will ask for your name, but names will be removed from the surveys after the session. Surveys are only identified with a code. Mr. Tague will retain the list of codes and corresponding names in a locked office. It will not be possible for someone to figure out your answers. The list of names will be used to collect data from the 24 Hour Observation Sheets. These observation sheets are already part of your medical record. I will not include any information that will make it possible to identify a participant in any published report. Surveys and the list of names and matching codes will be kept in a locked office. They will be retained for one (6) years after the conclusion of the study. After six years they will be destroyed or erased from digital files.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Florida State University or Southwestern State Hospital. If you decide to participate, you are free to not answer any question or withdraw at any time without penalty or loss of benefits for which you are otherwise entitled.

Contacts and Questions: The researcher for this study is Daniel Tague who is overseen by Dr. Jayne Standley. Dr. Standley is the major professor and faculty advisor for this study. You may reach Daniel Tague at Dr. Standley may be reached at (850) 644.4565 or jstandley@fsu.edu. Please ask any questions you have now, or at any point in the future. If you have any questions or concerns about your rights as a research subject, you may contact the FSU Institutional Review Board (IRB) at (850) 644-8633. You may also access their website at http://www.fsu.research.edu. The Institutional Review Board for the Georgia Department of Public Health may be reached at (404) 657-6645. You will be given a copy of this consent form for your records.

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

Signature ___________________________ Date __________

Signature of Investigator ___________________________ Date __________

DPH IRB# 111201
Exp. Date 02/06/2013
Informed Consent
(Video recording)

I ___________________________ agree to participate in the music therapy or discussion group activity. This activity will be video recorded for the purpose of evaluating the group activities. Video recordings will be used for data collection purposes only and will not leave the hospital. I understand that I can withdraw from participation at any time. My choice to participate or refuse will in no way affect my treatment at this facility. Any questions I have regarding the video recording of this group activity have been answered.

Confidentiality: Video recordings will be kept securely in a locked office for six (6) years. Recordings will then be destroyed or electronically erased.

Contacts and Questions: The researcher for this study is Daniel Tague who is overseen by Dr. Jayne Standley. Dr. Standley is the major professor and faculty advisor for this study. You may reach Daniel Tague at Dr. Standley may be reached at (850) 644-4565 or jstandley@fsu.edu. Marsha Sykes, Activity Therapy Coordinator, is the contact person for Southwestern State Hospital. Mrs. Sykes may be reached at (229) 277-2957, or msykes@dhr.state.ga.us.

Please ask any questions you have now, or at any point in the future. If you have any questions or concerns about your rights as a research subject, you may contact the FSU Institutional Review Board (IRB) at 850-644-8633. You may also access their website at http://www.fsu.research.edu. The Institutional Review Board for the Georgia Department of Public Health may be reached at (404) 657-6645. You will be given a copy of this consent form for your records.

Statement of Consent: I have read the above information. I have asked questions and have received answers. I consent to video recording during the group music or discussion activities.

____________________________  ________________
Signature                      Date

____________________________  ________________
Signature of Investigator      Date


DPH IRB# 111201
Exp. Date 02/06/2013
APPENDIX C

VISUAL ANALOG MOOD SCALE
Visual Analog Mood Scale

Please make a vertical mark at the appropriate point on the line which corresponds to how strongly you feel the emotion group at this moment. Please mark on each line.

1. Joy, Happiness, Enjoyment

[Diagram showing a scale from 0 to 100, with 0 labeled as "Not at all" and 100 labeled as "Extremely, Intensely Feel"]

2. Acceptance

[Diagram showing a scale from 0 to 100, with 0 labeled as "Not at all" and 100 labeled as "Extremely, Intensely Feel"]

3. Sadness, Depression, Sorrowful, Suffering

[Diagram showing a scale from 0 to 100, with 0 labeled as "Not at all" and 100 labeled as "Extremely, Intensely Feel"]

4. Anger, Rage, Hostility

[Diagram showing a scale from 0 to 100, with 0 labeled as "Not at all" and 100 labeled as "Extremely, Intensely Feel"]

5. Fearful, Distrustful

[Diagram showing a scale from 0 to 100, with 0 labeled as "Not at all" and 100 labeled as "Extremely, Intensely Feel"]
6. Surprise, Startled, Bewildered, Shocked

7. Anxiety, Nervousness, Anticipation

8. Shame, Humiliation, Embarrassment, Disgrace

9. Guilty, Regretful, Blame

10. Frustrated, Disgusted, Contempt

11. Lonely
APPENDIX D

24 HOUR OBSERVATION FORM

54
APPENDIX E

24 HOUR OBSERVATION CATEGORIES

<table>
<thead>
<tr>
<th>Positive</th>
<th>Neutral</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. On Phone</td>
<td>2. Standing</td>
<td>17. Personal room</td>
</tr>
<tr>
<td>10,11,12. With Staff (Phys, Ther., Nurse)</td>
<td>3. Resting</td>
<td>27. Restraints</td>
</tr>
<tr>
<td>13. With AT</td>
<td>6. Reading</td>
<td>A. Confused</td>
</tr>
<tr>
<td>14. Team</td>
<td>7. Writing</td>
<td>C. Uncooperative</td>
</tr>
<tr>
<td>15. Group</td>
<td>8. Watching TV</td>
<td>E. Agitated</td>
</tr>
<tr>
<td>22. Fresh Air</td>
<td>19. Hallway</td>
<td>G. Hearing voices</td>
</tr>
<tr>
<td>31. Off unit with staff</td>
<td>23. Lobby</td>
<td>J. Isolating self</td>
</tr>
<tr>
<td>32. Off unit activities</td>
<td>36. Walking</td>
<td>K. Crying</td>
</tr>
<tr>
<td>33. Outside activities</td>
<td>38. Bathing</td>
<td>L. Demanding</td>
</tr>
<tr>
<td>37. With HST</td>
<td>D. Calm</td>
<td>M. Restless</td>
</tr>
<tr>
<td>B. Cooperative</td>
<td>U. Pacing</td>
<td>N. Withdrawn</td>
</tr>
<tr>
<td>V. Interacting with others</td>
<td></td>
<td>O. Self-harm ideation</td>
</tr>
<tr>
<td>W. Happy</td>
<td></td>
<td>P. Angry</td>
</tr>
<tr>
<td>T. Ventilating feelings</td>
<td></td>
<td>Q. Anxious</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R. Paranoid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S. Threatening</td>
</tr>
</tbody>
</table>

Expert Panel:
Missy Duval, RN
Lorenzo Crumidy, HST
Melissa Stinnett, Lead HST
Melissa Violett, MT-BC
APPENDIX F

INTERPERSONAL OBSERVATION FORM
Interpersonal Observation

Observer name: _____________________  Date: __________________
Group: ______ Location: _______ Date: ________ Time start: _________ Time end: ________
Key: T = # of participants on-task; APR = Approval; NEU = Neutral; DIS = Disapproval
V = Verbal; C = Contact; E = Expression; # = number of participants in group

<table>
<thead>
<tr>
<th></th>
<th>Record A</th>
<th></th>
<th>Record B</th>
<th></th>
<th>Record C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T APR</td>
<td>NEU</td>
<td>DIS</td>
<td>T APR</td>
<td>NEU</td>
</tr>
<tr>
<td>#.......</td>
<td>V C E</td>
<td>V C O</td>
<td>V C E</td>
<td>V C E</td>
<td>V C O</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Adapted from Form K Interpersonal Observation (Madsen & Madsen, 1998)
APPENDIX G

MUSIC THERAPY DRUMMING EXAMPLE
Music Therapy Drumming Session Format

Cooperation: The drumming group will begin with a shaker pass activity intended to promote the theme of cooperation.

- Participants will be seated in a circle with the researcher leading the activity. The Research Therapist (RT) will chant directions for the participants to move and shake egg shakers in rhythm to their seated neighbors. The RT will gradually speed up the shaker passing and strategically drop his own eggs until the activity goes too fast to maintain.

- Participants will be asked to share comments about their individual and group cooperation during the activity. The RT will also ask for examples of how participants can demonstrate cooperation on the unit after the group is finished.

Friendliness: The RT will facilitate the next activity by creating a wave effect of participants who move their arms up and down in sequence around the circle.

- (1) This “wave” concept will be transferred to drums by having the participants take turns playing a beat on the drum in rapid succession around the circle. The wave effect will then be magnified by each participant playing (2) multiple times on the drum for each turn.

- The RT will relate the wave activity to the idea of friendliness and lead a discussion about being friendly on the unit after the group.

Compliments: Participants will be instructed about different ways to play the drums in order to obtain quality musical sounds.

- The RT will lead the group in call and response drumming by asking simple questions such as, “What’s your name?”, in rhythm to the word syllables.
Participants will respond by playing their answers on a drum in rhythm to their verbal answers.

- The RT will continue to use this call and response technique to set up complimentary rhythms between sets of group members. (e.g., “play the drum, keep-the-rhythm-go-ing)
- After this activity, the RT will lead the group in a discussion about how to compliment other patients and staff on the unit.

Teamwork: The RT will instruct participants in simple non-verbal gestures to indicate concepts such as start/stop, loud/soft, and rumble as he leads the group in improvisational drumming.

- The RT will encourage participants to take turns facilitating the group drumming.
- After volunteers have had a turn leading the group in drumming, the RT will introduce the idea of teamwork for discussion. Participants will be encouraged to talk about how teamwork helped the activity to be successful and how they might be a team player on the unit.

Helpfulness: The RT will then transition the group into a slower, relaxing rhythm and direct pairs of participants to share large instruments such as ocean drums or large Tubano hand drums.

- The RT will guide the group with references to natural rhythms such as breathing, walking and the heartbeat.
- The RT will lead the group in talking about helpfulness and how helpfulness might be demonstrated on the unit.
Celebration circle: The drumming session will conclude with a celebration circle. The group will be instructed to improvise on an instrument while trying to fit their playing into the overall group rhythm.

- Each participant will be given the *chance to stand up and stop the group* in order to share something they are grateful for or would like to celebrate. **Pre-written, positive self-statements will be provided in a container** if a participant would rather choose to read a statement to the group.
APPENDIX H

MUSIC THERAPY GROUP SAMPLE OUTLINE
General Music Therapy Session Plan

**Hello Song:** Music Therapist (MT) will lead the group in an introduction singing activity that provides orientation to time and place and introduces the participants.

- Participants will sing assigned responses and provide their names.
- MT will encourage social interaction and initiate a discussion about *friendliness*.

**Song Choice:** MT will provide song cards that can be chosen for the group to sing. (The Way You Do the Things You Do, A Little Help From My Friends, You’ve Got A Friend, maybe…Beautiful, etc.)

- Participants will take turns choosing songs.
- All participants will be given a chance to choose a song.
- The MT will facilitate discussions regarding themes (i.e., *compliments, teamwork, and helpfulness*) in the song lyrics.

**Lyric Analysis:** MT will provide lyric handouts and play a song regarding *cooperation*. (Raise the Barn)

- Participants will listen to the song and then the MT will lead them in discussing the song lyrics.

**Song-Writing:** MT will provide a song with some words and phrases blanked out. (Lean On Me)

- Participants will fill in the blanks to create their own songs about *teamwork*.
- MT will play newly created songs on the guitar and encourage group singing and discussion.

**Goodbye Song:** MT will lead the group in a goodbye song that orients the participants to the end of the session and reminds them of the themes discussed in class.
APPENDIX I

SONG-WRITING ACTIVITY
Lean On Me

Verse
D G
Sometimes in our lives

D
we all ________________________________________________

A7
We all ________________________________________________

D G
But if we are wise

D A7 D
We know _______________________________________________

Chorus
D G
Lean on me, when you’re not strong
D
And I’ll be your friend

A7
I’ll help you ___________________________________________
D G
For it won't be long
D
'Til I'm gonna need
A7 D
Somebody to lean on

Verse
D G
Please swallow your pride
D A7
If I have things you need to borrow
D G
For no one can fill
D A7 D
Those of your needs that you won’t let show

D D
Just call on me brother _____________________________________
A7 D
We all need somebody to lean on

D D
I just might _______________________________________________
A7 D
We all need somebody to lean on.

D G
Lean on me when you’re not strong
D A7
And I’ll be your friend, I’ll help you carry on
D G
For it won’t be long,
D A7 D
‘til I’m gonna need somebody to lean on.
APPENDIX J

DISCUSSION GROUP SAMPLE OUTLINE
Non-music Activity Therapy Session Plan

1. **Introduction:** Activity Therapist (AT) will introduce themes and welcome participants to the group.
   - Participants will take turns making introductions.
   - Participants will be asked to share something nice about themselves or someone in the group.

2. **Ice Breaker Activity:** AT will facilitate a social activity based on the theme of friendliness.
   - **Activity:** Matching colors or colors of opposite attraction.
   - Participants will be split into groups for the activity.
   - Participant will be required to move around the room for this activity.

3. **Discussion Activity:** The AT will present themes for discussion.
   - **Activity:** CSI game – discussion re: cooperation and teamwork.
   - Participants will utilize a whiteboard or chalkboard during the discussion.
   - The AT will facilitate the discussion and help maintain group focus.

4. **Role-playing Activity:** The AT will ask for volunteers to role play pre-set situations especially re: helpfulness and being complimentary.
   - **Activity:** Participants will role-play situations on the unit that require targeted social skills.
   - The AT will facilitate discussion regarding the outcome of the role-plays.

5. **Wrap-up:** AT will restate the five themes and ask participants for examples for these behaviors on the unit. (Themes: Friendliness, Compliments, Cooperation, Teamwork, Helpfulness)
APPENDIX K

RESEARCH DEBRIEFING FORM
The Effect of Group Drumming or General Music Therapy as Compared to Group Discussion on the Mood State and Observed Transfer Behaviors of In-Patient Psychiatric Consumers

Research Debriefing

The purpose of this research was to find out what are the differences in mood changes of consumers in an acute psychiatric setting after participating in a group drumming session, a general music therapy session and a non-music discussion group? Will improvements in mood scores affect verbal and social behaviors during and after the treatment conditions?

Thank you for your participation in the research activities. I would like to know if you have any comments or questions regarding the research question or the activities. Please answer the following questions by speaking to me or writing your response.

1. How did you feel about participating in the drumming, music or discussion activity? (For example, did you learn anything helpful and do you feel like it may have helped you after the activity?)

2. How do you feel that the research study was implemented? (For example, was it well organized and were the researchers respectful and helpful?)

If you would like a research summary sent to you after I have analyzed the data, please provide an e-mail or mailing address:

Name: __________________________________________________
E-mail address: ___________________________________________
Mailing Address: _________________________________________

________________________________________________________________________
### APPENDIX L

### VAMS RAW DATA

#### Music Therapy Drumming

<table>
<thead>
<tr>
<th>Subject</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>365</td>
<td>103</td>
</tr>
<tr>
<td>B</td>
<td>509</td>
<td>459</td>
</tr>
<tr>
<td>C</td>
<td>374</td>
<td>578</td>
</tr>
<tr>
<td>D</td>
<td>536</td>
<td>300</td>
</tr>
<tr>
<td>E</td>
<td>408</td>
<td>200</td>
</tr>
<tr>
<td>F</td>
<td>696</td>
<td>759</td>
</tr>
<tr>
<td>G</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>H</td>
<td>92</td>
<td>62</td>
</tr>
<tr>
<td>I</td>
<td>517</td>
<td>520</td>
</tr>
<tr>
<td>J</td>
<td>106</td>
<td>74</td>
</tr>
<tr>
<td>K</td>
<td>530</td>
<td>206</td>
</tr>
<tr>
<td>L</td>
<td>506</td>
<td>522</td>
</tr>
<tr>
<td>M</td>
<td>447</td>
<td>655</td>
</tr>
<tr>
<td>N</td>
<td>61</td>
<td>24</td>
</tr>
<tr>
<td>O</td>
<td>291</td>
<td>273</td>
</tr>
<tr>
<td>P</td>
<td>139</td>
<td>0</td>
</tr>
<tr>
<td>Q</td>
<td>612</td>
<td>172</td>
</tr>
<tr>
<td>R</td>
<td>675</td>
<td>534</td>
</tr>
<tr>
<td>S</td>
<td>346</td>
<td>532</td>
</tr>
<tr>
<td>T</td>
<td>503</td>
<td>195</td>
</tr>
<tr>
<td>U</td>
<td>54</td>
<td>26</td>
</tr>
<tr>
<td>V</td>
<td>207</td>
<td>227</td>
</tr>
</tbody>
</table>

#### General Music Therapy

<table>
<thead>
<tr>
<th>Subject</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>387</td>
<td>278</td>
</tr>
<tr>
<td>B</td>
<td>445</td>
<td>369</td>
</tr>
<tr>
<td>C</td>
<td>243</td>
<td>187</td>
</tr>
<tr>
<td>D</td>
<td>152</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>704</td>
<td>865</td>
</tr>
<tr>
<td>F</td>
<td>656</td>
<td>545</td>
</tr>
<tr>
<td>G</td>
<td>402</td>
<td>335</td>
</tr>
<tr>
<td>H</td>
<td>200</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>480</td>
<td>448</td>
</tr>
<tr>
<td>J</td>
<td>252</td>
<td>10</td>
</tr>
<tr>
<td>K</td>
<td>58</td>
<td>100</td>
</tr>
<tr>
<td>L</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>M</td>
<td>512</td>
<td>515</td>
</tr>
<tr>
<td>N</td>
<td>898</td>
<td>1097</td>
</tr>
<tr>
<td>O</td>
<td>665</td>
<td>364</td>
</tr>
<tr>
<td>P</td>
<td>679</td>
<td>637</td>
</tr>
<tr>
<td>Q</td>
<td>50</td>
<td>54</td>
</tr>
<tr>
<td>R</td>
<td>550</td>
<td>397</td>
</tr>
<tr>
<td>S</td>
<td>487</td>
<td>401</td>
</tr>
<tr>
<td>T</td>
<td>74</td>
<td>22</td>
</tr>
<tr>
<td>U</td>
<td>348</td>
<td>352</td>
</tr>
<tr>
<td>V</td>
<td>219</td>
<td>13</td>
</tr>
</tbody>
</table>
### Activity Therapy

<table>
<thead>
<tr>
<th>Subject</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>268</td>
<td>200</td>
</tr>
<tr>
<td>B</td>
<td>99</td>
<td>47</td>
</tr>
<tr>
<td>C</td>
<td>332</td>
<td>422</td>
</tr>
<tr>
<td>D</td>
<td>390</td>
<td>232</td>
</tr>
<tr>
<td>E</td>
<td>328</td>
<td>332</td>
</tr>
<tr>
<td>F</td>
<td>444</td>
<td>193</td>
</tr>
<tr>
<td>G</td>
<td>383</td>
<td>315</td>
</tr>
<tr>
<td>H</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>75</td>
<td>248</td>
</tr>
<tr>
<td>J</td>
<td>227</td>
<td>198</td>
</tr>
<tr>
<td>K</td>
<td>196</td>
<td>153</td>
</tr>
<tr>
<td>L</td>
<td>531</td>
<td>60</td>
</tr>
<tr>
<td>M</td>
<td>568</td>
<td>544</td>
</tr>
<tr>
<td>N</td>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>O</td>
<td>616</td>
<td>353</td>
</tr>
<tr>
<td>P</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Q</td>
<td>1100</td>
<td>1100</td>
</tr>
<tr>
<td>R</td>
<td>679</td>
<td>137</td>
</tr>
<tr>
<td>S</td>
<td>506</td>
<td>561</td>
</tr>
<tr>
<td>T</td>
<td>207</td>
<td>70</td>
</tr>
<tr>
<td>U</td>
<td>191</td>
<td>177</td>
</tr>
<tr>
<td>V</td>
<td>360</td>
<td>200</td>
</tr>
</tbody>
</table>
APPENDIX M

24 HOUR OBSERVATION SHEET RAW DATA

24 Hour observation sheet score

Music Therapy Drumming

<table>
<thead>
<tr>
<th>Subject</th>
<th>30 minute post treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>2</td>
</tr>
<tr>
<td>H</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>J</td>
<td>2</td>
</tr>
<tr>
<td>K</td>
<td>2</td>
</tr>
<tr>
<td>L</td>
<td>4</td>
</tr>
<tr>
<td>M</td>
<td>3</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
</tr>
<tr>
<td>O</td>
<td>2</td>
</tr>
<tr>
<td>P</td>
<td>2</td>
</tr>
<tr>
<td>Q</td>
<td>2</td>
</tr>
<tr>
<td>R</td>
<td>2</td>
</tr>
<tr>
<td>S</td>
<td>1</td>
</tr>
<tr>
<td>T</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>2</td>
</tr>
<tr>
<td>V</td>
<td>2</td>
</tr>
</tbody>
</table>

General Music Therapy

<table>
<thead>
<tr>
<th>Subject</th>
<th>30 minute post treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
</tr>
<tr>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>H</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>J</td>
<td>2</td>
</tr>
<tr>
<td>K</td>
<td>3</td>
</tr>
<tr>
<td>L</td>
<td>0</td>
</tr>
<tr>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>N</td>
<td>3</td>
</tr>
<tr>
<td>O</td>
<td>0</td>
</tr>
<tr>
<td>P</td>
<td>2</td>
</tr>
<tr>
<td>Q</td>
<td>2</td>
</tr>
<tr>
<td>R</td>
<td>1</td>
</tr>
<tr>
<td>S</td>
<td>1</td>
</tr>
<tr>
<td>T</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>0</td>
</tr>
<tr>
<td>V</td>
<td>2</td>
</tr>
</tbody>
</table>
24 Hour observation sheet score

Activity Therapy

<table>
<thead>
<tr>
<th>Subject</th>
<th>30 minutes post treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
</tr>
<tr>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>H</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>3</td>
</tr>
<tr>
<td>J</td>
<td>1</td>
</tr>
<tr>
<td>K</td>
<td>0</td>
</tr>
<tr>
<td>L</td>
<td>2</td>
</tr>
<tr>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
</tr>
<tr>
<td>O</td>
<td>3</td>
</tr>
<tr>
<td>P</td>
<td>0</td>
</tr>
<tr>
<td>Q</td>
<td>4</td>
</tr>
<tr>
<td>R</td>
<td>0</td>
</tr>
<tr>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>T</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>0</td>
</tr>
<tr>
<td>V</td>
<td>0</td>
</tr>
</tbody>
</table>
APPENDIX N

INTERPERSONAL BEHAVIOR OBSERVATION RAW DATA

<table>
<thead>
<tr>
<th>Condition</th>
<th>Unit</th>
<th>Date</th>
<th>Approval</th>
<th>Neutral</th>
<th>Disapproval</th>
<th>On task</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total Cells</td>
<td># Cells marked</td>
<td>Total Cells</td>
<td># Cells marked</td>
</tr>
<tr>
<td>MTD*</td>
<td>510</td>
<td>3-1</td>
<td>89</td>
<td>0</td>
<td>89</td>
<td>1</td>
</tr>
<tr>
<td>MTD*</td>
<td>310</td>
<td>2-15</td>
<td>26</td>
<td>1</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>MTD*</td>
<td>501</td>
<td>2-22</td>
<td>82</td>
<td>0</td>
<td>82</td>
<td>8</td>
</tr>
<tr>
<td>MTD</td>
<td>310</td>
<td>3-7</td>
<td>97</td>
<td>8</td>
<td>97</td>
<td>7</td>
</tr>
<tr>
<td>MTD</td>
<td>510</td>
<td>5-9</td>
<td>107</td>
<td>11</td>
<td>107</td>
<td>9</td>
</tr>
<tr>
<td>MTD</td>
<td>510</td>
<td>4-12</td>
<td>97</td>
<td>27</td>
<td>97</td>
<td>9</td>
</tr>
<tr>
<td>MTD</td>
<td>510</td>
<td>3-20</td>
<td>92</td>
<td>27</td>
<td>92</td>
<td>7</td>
</tr>
<tr>
<td>MTD</td>
<td>501</td>
<td>3-14</td>
<td>74</td>
<td>5</td>
<td>74</td>
<td>1</td>
</tr>
<tr>
<td>MTD</td>
<td>310</td>
<td>3-27</td>
<td>111</td>
<td>0</td>
<td>111</td>
<td>6</td>
</tr>
<tr>
<td>MTD</td>
<td>310</td>
<td>5-2</td>
<td>87</td>
<td>3</td>
<td>87</td>
<td>5</td>
</tr>
<tr>
<td>GMT*</td>
<td>501</td>
<td>3-21</td>
<td>80</td>
<td>2</td>
<td>80</td>
<td>6</td>
</tr>
<tr>
<td>GMT*</td>
<td>501</td>
<td>2-29</td>
<td>80</td>
<td>4</td>
<td>80</td>
<td>2</td>
</tr>
<tr>
<td>GMT</td>
<td>310</td>
<td>4-18</td>
<td>94</td>
<td>6</td>
<td>94</td>
<td>2</td>
</tr>
<tr>
<td>GMT</td>
<td>510</td>
<td>3-28</td>
<td>109</td>
<td>11</td>
<td>109</td>
<td>25</td>
</tr>
<tr>
<td>GMT</td>
<td>310</td>
<td>4-4</td>
<td>144</td>
<td>11</td>
<td>144</td>
<td>10</td>
</tr>
<tr>
<td>GMT</td>
<td>510</td>
<td>3-6</td>
<td>100</td>
<td>7</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>GMT</td>
<td>310</td>
<td>3-14</td>
<td>103</td>
<td>20</td>
<td>103</td>
<td>9</td>
</tr>
<tr>
<td>GMT</td>
<td>510</td>
<td>4-26</td>
<td>66</td>
<td>6</td>
<td>66</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>310</td>
<td>5-9</td>
<td>87</td>
<td>18</td>
<td>87</td>
<td>7</td>
</tr>
<tr>
<td>D*</td>
<td>501</td>
<td>2-15</td>
<td>35</td>
<td>4</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td>D</td>
<td>310</td>
<td>2-29</td>
<td>42</td>
<td>0</td>
<td>42</td>
<td>9</td>
</tr>
<tr>
<td>D</td>
<td>310</td>
<td>3-21</td>
<td>73</td>
<td>0</td>
<td>73</td>
<td>6</td>
</tr>
<tr>
<td>D</td>
<td>510</td>
<td>3-13</td>
<td>94</td>
<td>7</td>
<td>94</td>
<td>26</td>
</tr>
</tbody>
</table>

* Viewed for reliability
REFERENCES


BIOGRAPHICAL SKETCH

Name: Daniel Brice Tague

Birthplace: Pomona, CA

Higher Education: Texas Tech University
Lubbock, TX
Major: Russian Language and Area Studies and European History
Degree: B. A. (1994)

University of Kansas
Lawrence, KS
Major: Music Therapy

The Florida State University
Tallahassee, FL
Major: Music Education (Music Therapy)
Degree: Ph. D. (2012)

Experience: Music Therapy Services of Texas
Music Therapy Private Practice
Keller, TX
2000 - 2009