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Abstract

The purpose of this study was to explore the impact of group music therapy on levels of self-reported negative affect (NA) among men and women on a residential unit of an integrated dual diagnosis treatment program. More specifically, we sought to determine if, and to what degree engagement in composition, receptive (listening), re-creation (performing), and improvisation experiences would result in a shift—namely, a decrease—in the intensity of self-reported NA. Participants were adults in residential treatment who had been diagnosed with co-occurring substance use disorders (SUDs) and mental illnesses (MIs), predominantly mood and anxiety disorders. Twenty group music therapy sessions were held on the unit. Three researcher-developed visual analogue scales were used to assess pre- and post-session levels of anxiety, anger, and sadness. In total, 89 surveys were analyzed. Results indicate that nearly a third of the participants who were involved in the treatment groups reported a decrease in anxiety, sadness, and anger combined, with more than half of the responses in each of these three emotional states indicating a decrease. While these are encouraging results, generalization of findings is limited primarily by the use of a non-standardized measurement tool, the absence of a control group, the possibility of intentional deceit, and the potential for researcher bias in the collection and compilation of the data.

The Impact of Group Music Therapy on Negative Affect of People With Co-Occurring Substance Use Disorders and Mental Illnesses

In this study, we explored the impact of group music therapy on levels of self-reported negative affect among men and women in a residential, integrated dual diagnosis treatment program. Participants had co-occurring substance use disorders (SUDs) and mental illnesses (MIs), predominantly mood and anxiety disorders.

Approximately 8.9 million Americans aged 18 years and older are dually diagnosed with SUDs and MIs (SAMHSA, 2010). The high prevalence of co-occurring SUDs and mood and anxiety disorders, specifically, has been clearly established in clinical investigations (Merikangas, Dierker, & Szamari, 1998). One recent publication asserts that people with addictions are twice as likely as those in the general population to be diagnosed with these particular affective psychopathologies (National Institute on Drug Abuse, 2009). When compared with singular diagnoses, the combination of substance-related and mental health disorders appears to be correlated with higher frequencies of homelessness (Caton, 1994), incarceration (Abram & Teplin, 1991), hospitalization (Drake & Brunnette, 1998), and relapse (Swofford, Kasckow, Scheller-Gilkey, & Inderbitzin, 1996), as well as poorer overall quality of life (Singh, Mattoo, Sharan, & Basu, 2005).

Although the benefits of music therapy in the treatment of SUDs and various forms of MI have been singularly researched and reported, the role and efficacy of music therapy in the treatment of individuals with co-existing disorders remains comparatively under investigated—this in spite of the fact that nearly 20 percent of members of the American Music Therapy Association (AMTA) reportedly work with clients with

psychiatric disorders (AMTA, 2010), many of whom undoubtedly have multiple mental health diagnoses, as indicated above.

The research team for the present study was comprised of a university faculty MT-BC (principal investigator) with nearly 30 years of clinical experience with adolescents and adults with MIs and two junior-level student music therapists (SMTs) from an AMTA-approved undergraduate training program. We were not considered clinical staff at the facility; rather we were viewed as faculty and student visitors who provided voluntary music therapy sessions as a service to the residents. The fourth author, a statistician, conducted the analysis of data and assisted with interpretation of the findings.

Negative Affect

Definition and Prevalence

The term *affect*, while variously defined in the professional psychology literature can be understood as an umbrella term for subjective experiences of a feelingful nature. Cheetham, Allen, Yücel, & Lubman define *affect* as "relatively brief feelings that are experienced in response to a particular stimulus or situation" (2010, p. 623). In the course of a typical day, healthy individuals experience a multiplicity of these brief feelings (sometimes called *emotions*) with varying frequency, intensity, and duration. One's perception of emotions as positive or negative is dependent on the context and his or her emotional competence, defined as the ability to interpret and respond to feelings in self and others (Gross & Muñoz, 1994). In this report, we use the term *negative affect* (NA) to refer to any brief emotion characterized by distress or displeasure (Watson, Clark, & Tellegen, 1988). Examples include anxiety, anger, sadness, shame, fear, and so forth.

Researchers have confirmed that NA figures prominently in psychopathologies, including the three most commonly represented among participants in our study: anxiety, depression, and SUDs. Low positive affect and high NA (both state and trait) are major distinguishing features of anxiety and depression (Tellegen, 1985). In fact, by definition, people with Generalized Anxiety Disorder experience greater frequency, intensity, and duration of negative emotions like restlessness, irritability, worry, and fear than those without this diagnosis (APA, 1994). Likewise, diagnostic criteria for affective disorders such as Major Depressive Disorder include sustained and excessive negative emotions, including sadness, emptiness, worthlessness, and guilt (APA, 1994).

Negative Affect and Substance Abuse

While it is difficult to distinguish between NA as a cause or a consequence of substance use, alcohol and drug abuse have been positively associated with high levels of NA—specifically anxiety, depression, and hostility (Passion-Gonzalez, Templer, & Walker, 2001). NA is directly correlated with initial substance use, so-called *risky use*, substance craving, addiction, and relapse (Cheetham, Allen, Yücel, & Lubman, 2010). Among individuals with MI, NA appears to trigger the use and abuse of substances more frequently than other factors, such as being around others who use substances or experiencing loss or interpersonal conflict (Adington & Duchak, 1997; Bradizza & Stasiewicz, 2003; Warner et al., 1994).

Negative Affect and Treatment

The finding that NA is linked with substance use, abuse, and relapse underscores the value of treatment modalities and interventions with the potential to help clients reduce their levels of NA. Pharmacological interventions are used frequently to manage

emotional distress. Another option is *emotion regulation*, a collection of cognitive and behavioral strategies designed to manipulate in self or others certain "emotion antecedents or one or more of the components of an emotional response—behavioral, subjective, or physiological" (Gross & Muñoz, 1995, p. 153). Individuals can consciously self-direct such strategies in order to avoid NA altogether or to alter levels of negative emotions once they have begun.

Music-based interventions have been shown to promote desirable emotional shifts among healthy individuals (Lesiuk, 2010; McKinney et al., 1997) and among various clientele, including adults with stroke and brain injury (Baker & Wigram, 2004; Magee & Davidson, 2002), cancer (Burns, 2001; Clark et al., 2006), and rheumatoid arthritis (Jacobi, 1995). However, surprisingly few experimental music therapy studies to date have targeted this aim with adult psychiatric clients. In the following section, we highlight some of these studies with a particular emphasis on clients with co-occurring psychopathologies.

Affect Shifts and Music Therapy

Some publications focus on the efficacy of music therapy with psychiatric clientele (including those diagnosed with SUDs) toward expression of various emotions, with the implication that such emotional expression promotes desirable affect shifts (Bednarz & Nikkel, 1992; Burt, 1995; Hakvoort, 2002; Dingle, Gleadhill, and Baker, 2008; Treder-Wolff, 1990; Unkefer, 2005). For instance, Gallagher and Steele (2002) provided music therapy for individuals with dual psychiatric diagnoses, 65 – 70 percent of whom were also criminal offenders. The adult participants were involved in group sessions for nine months. Clinical goals included the identification and expression of

thoughts and feelings, as well as stress and anger management. A systematic review of session documentation by the music therapists and other staff involved in the treatment of 188 of these clients showed that 68 percent seemed to have had a positive change in affect. However, only 29 percent of the clients involved actually reported positive change in emotions during the sessions. (The authors do not account for the difference between staff and client perceptions.) Gallagher and Steele conclude that, among individuals with dual diagnoses, music therapy is particularly effective as a motivator, providing emotional support and opportunities for identification and expression of affect.

Other studies have targeted emotional shifts more directly. For instance, in one of the first systematic investigations of the impact of music therapy interventions on affect, Thaut (1989) surveyed 50 psychiatric prisoner patients about their levels of relaxation, affect, and thought after their involvement in three types of interventions: group music therapy (music listening and verbal processing), instrumental group improvisation (structured playing with emotional referents), and music and relaxation (music-assisted progressive muscle relaxation). (While not clearly articulated, it is implied that each patient attended just one session in each intervention group.) All patients had primary and secondary psychiatric disorders such as schizophrenia, depression, and personality disorders. Using information from prior patient interviews, Thaut designed three 10-point scales to evaluate mood/emotion (How are my mood and my emotion?), relaxation (How relaxed am I?), and thought/insight (How are my thoughts about me and my life?). Results indicated significant desirable pre- to post-session changes in all three scales. The relaxation scale showed the most significant change ratings, followed by mood/emotion. There was no apparent link between the three types of music therapy interventions and

changes in the dependent variables. Thaut notes several limitations of his study, including use of a non-standardized measurement tool and the possibility that participants' responses may have been influenced by expectations of favoritism for cooperative behavior, which Gussak (2007) suggests is a particular liability among incarcerated individuals. The absence of a control group further impacts evaluation of the findings.

In a 2005 study, Jones examined whether lyric analysis or songwriting was more effective in evoking a desirable emotional change within a single session at an adult inpatient detoxification facility. A Visual Analog Mood scale was given to participants at the beginning and end of each music therapy session. Jones used a standardized measurement tool, adding *lonely* as a variable, "based on the researcher's clinical experience with people in treatment for chemical dependencies" (p. 100). None of the participants reportedly had a dual diagnosis. No significant difference was found in emotional shifts between lyric analysis and song writing groups, which may lend support to Thaut's (1989) finding that the type of intervention is not a compelling factor in changes witnessed during treatment. However, Jones' analysis did support the hypothesis that sessions evoked emotional change; when taken as a whole, participants reported significant decreases in the intensity of *guilt/regretful/blame* and *fearful/distrustful*, and significant increases in feelings of *acceptance* and *joy/happiness/enjoyment*.

A more recent study by Baker, Dingle, and Gleadhill (2007) yielded further evidence of emotional shifts in music therapy. They involved clients with co-occurring SUDs and depression and/or anxiety in a variety of music experiences (e.g., lyric analysis, song parody, or song singing/listening) during seven weekly sessions. After each session, participants completed questionnaires about their prior use of music to

regulate emotion, as well as their reactions to the music therapy. Results indicated that 87.5 percent of the 24 respondents had used music previously to alter their affect, with 65 percent of the participants reporting that music had promoted an "uplifting/happier/positive change" for them (p. 326) and an additional 20 percent indicating that music had promoted "calming/relaxing/mellow" responses (p. 326). Furthermore, when asked to identify emotions experienced during the session, more "positive" than "negative" were selected. As in the Gallagher and Steele (2002) study, these authors cite that negative emotions were associated with serious subject matter, such as a focus on depression, anger, and anxiety.

While it is tempting to conclude from this study that music therapy promoted a desirable emotional shift, the authors assert the exploratory nature of the study and point to limitations, such as a relatively small number of participants and a post-test only design. Additionally, as with all non-standardized tools, content and construct validity is a concern. In particular, although clients were asked to circle all emotions that they experienced in the session, conceivably they could have felt "optimistic" at a minimal level and "angry" at a high level but would have no way of reflecting this difference in intensity on the single scale that was provided.

In her research, de l'Etoile (2002) involved eight adults with diagnosed chronic mental illness—two of whom also had a history of substance use—in six weekly, one-hour group music therapy sessions. Music therapy methods included music listening, lyric analysis, improvisation, songwriting, group singing, music for relaxation purposes, and music used with additional arts media. The goals of treatment included positively impacting affect, improving awareness and expression of feelings, and increasing group

communication. In addition to two investigator-developed tools—one measuring participants' perception of benefits of treatment and one measuring attitudes toward receiving professional help—the Symptom Checklist-90 Revised (Derogatis, Lipman, & Covi, 1973) also was used. This tool assessed change in psychiatric symptom prevalence among the participants, including anxiety, hostility, and depression. Music therapy was found to be most effective in reducing psychiatric symptoms related to anxiety, including obsessive-compulsive symptoms, interpersonal sensitivity, and phobic anxiety. These findings should be interpreted with caution given the brevity of treatment and the small participant pool.

This literature review, while representative rather than comprehensive, suggests that further, systematic investigation of the impact of music therapy on NA is warranted. In the present study, we attempted to address some of the methodological limitations of the previously reviewed studies by using a more robust sample size and a pre-test/post-test design. Additionally, although Jones (2005) took care to control for confounding variables, the participants in her study were mostly men; moreover, they were in the process of detoxification, rather than treatment. In that negative affect is one feature of withdrawal common to all drugs of abuse (Baker et al., 2004), responses to music therapy in detoxification programs may not be confidently generalized to the process of post-withdrawal treatment/active recovery, during which increased cognitive clarity, improved social-emotional support, the application of medication, and other factors may lead to more stable, idiosyncratic affect.

Purpose

As stated, the focus of this study was the impact of music therapy on NA among individuals with dual psychiatric diagnoses. We sought to determine if, and to what degree, the music therapy methods termed by Bruscia (1998) as *composition, receptive (listening)*, *re-creation (performing)* and *improvisation*, would result in a shift—namely, a decrease—in the intensity of participants' self-reported NA. During the treatment period, we attempted to attend to the clients' affective needs (e.g., emotional engagement, identification, self-expression, and validation), but we did not attempt to isolate and/or manipulate affect as a dependent variable, per se. Rather, we planned and executed all session experiences as we would for any group of similar clients, whether involved in research or not—with the totality of the residents' needs and interests in mind, concentrating not only on emotional outcomes, but on perceived interpersonal, physical, cognitive, and spiritual needs as well. In other words, clinical considerations took precedence in planning and facilitation of all sessions during which data were collected.

Method

Participants

Study participants were men and women living in a 20-bed Integrated Dual Diagnosis Treatment unit (IDDT) in Ohio. The parent program provided a variety of services, including screening, testing, therapy (inpatient and outpatient), education, and aftercare. All participants had been diagnosed with SUDs and co-occurring MIs. Their precise ages were not known but were estimated to range from the early twenties to the late sixties.

Due to the facility's policies regarding client privacy, information pertaining to resident demographics (including age, diagnoses, and substance use histories) was not available to us as volunteers. However, occasionally—both during introductions and throughout the course of treatment—residents chose to share personal and confidential information with the therapists. Many residents first presented themselves by saying, for example, "My name is Sheila. I am an alcoholic, and I have bi-polar disorder," perhaps as a result of their involvement in Alcoholics Anonymous and similar self-help recovery groups. These instances, coupled with direct observation and related inferences, as well as aggregate clinical information shared by staff, were used to assess and respond to resident needs throughout treatment.

In each case, the SUD was the primary diagnosis. Secondary diagnoses varied from person to person and, again, were held in confidence unless the residents revealed these data. Most residents who chose to do so stated that they were depressed and/or experienced chronic anxiety. Program staff confirmed that typical Axis I diagnoses among adults on the unit were affective disorders (depression and bi-polar disorder) and anxiety disorders (generalized anxiety and post traumatic stress disorder). In rare cases, residents on the unit might be diagnosed with schizophrenia or schizoaffective disorder or an Axis II personality disorder. No symptoms of psychoses were observed during the treatment period. All residents were taking medication to control psychiatric symptoms.

Length of stay in the program varied, ranging from a week to approximately 60 days, depending on insurance coverage, aftercare arrangements, and legal mandates. Some residents were court-ordered and some were voluntary admits. At least 50 percent had been in prior treatment; however, none had received music therapy before the study.

Measurement Tool

Our understanding of NA and construction of the measurement tool used to collect data was informed by the work of Watson and Clark (1994). They developed the PANAS – X (Positive Affect Negative Affect Schedule Expanded), in which four *Basic Negative Emotion Scales* are advanced, each of which subsumes multiple, aversive affect: (1) *fear* (i.e., scared, nervous, etc.), (2) *hostility* (i.e., angry, hostile, etc.), (3) *guilt* (i.e., ashamed, disgusted with self, etc.), and (4) *sadness* (i.e., downhearted, lonely, etc.). While we would have liked to have used the PANAS – X in its totality or a similar standardized tool, it was our intent to gather meaningful data related to NA as quickly as possible at the start and end of each session and to accommodate the range of reading and writing skills among our participants. Thus, we opted instead to create three visual analogue scales (VAS) to examine three of the four PANAS-X categories, which we termed *anxiety*, *sadness*, and *anger*. These labels and their synonyms were selected with feedback from a subject matter expert (i.e., a psychiatrist specializing in dual diagnosis and substance abuse treatment). The VAS is widely used in the behavioral sciences and has been shown to yield reliable and valid measurements of a variety of subjective variables (Carlson et al., 1989; Folstein & Luria, 1973; Monk, 1989).

On the left side of the scales (with a score of "1") were the labels *not nervous*, *not sad*, and *not angry*; on the right side (with a score of "7") were the labels *very nervous*, *very sad*, and *very angry*. Our decision to exclude *guilt* as a fourth scale was based on the principal investigator's concern that drawing attention to self-focused, aversive feelings might actually aggravate residents' NA and create a need for more immediate and/or intensive support than the program staff could provide following each music therapy

session. Moreover, there was no staff music therapist at the facility to provide support in between sessions when residual, unresolved feelings might have surfaced.

Procedures

The clinical director of the IDDT program granted permission to conduct the study, and we gained university Institutional Review Board approval. Twenty sessions were held during the academic semester. Two SMTs co-led each session, and the supervising faculty MT-BC was present and participatory in all sessions but one. Other professional and para-professional program staff attended on occasion.

Participation in music therapy was voluntary, but the session time was regularly scheduled and unopposed, and staff encouraged the residents' attendance. On average, 75 percent of the residents attended sessions during their stay. The number of people present in any given session ranged from 6 to 13. A few individuals attended only one session, but the majority attended 3-4 sessions. On occasion, for a variety of reasons, certain residents left sessions before the end; likewise, some residents joined sessions in progress.

The group met in a moderately sized common area on the IDDT unit, in which all other group meetings of the day also were held. For most sessions, several couches and chairs were arranged in a circle in an open section of the room. For a few sessions requiring a writing surface, the group sat around long tables in another part of the room facing a dry-erase board where the therapists were positioned.

Session Structure

Although each session was 45 minutes in length, music experiences comprised approximately 30-35 minutes, due to resident tardiness, necessary interruptions from

staff, and time needed to complete study pre- and post-session surveys. Since residents were consistently entering and leaving the facility, a decision tree model (Eyre, 2008) was used, in which music therapy experiences were pre-selected for their established effectiveness in mental health and addictions treatment, yet were informed by ongoing assessment and thus potentially altered in the moment to best suit the immediate needs and interests of the particular group members in each session. Although sessions were unique in terms of the music experiences that occurred, the following general session structure was used each time the group met:

1. Introductions – The SMTs and faculty MT-BC introduced themselves and asked the residents to introduce themselves (first names only), which allowed all individuals present to become somewhat familiar with anyone who had joined the treatment program and/or music therapy group since the previous session.

2. Pre-Session Survey – The SMTs explained the study survey, reading or paraphrasing an IRB-approved inbrief script. The pre-session surveys were distributed. The SMTs explained the confidentiality code and answered all residents' questions about the survey. Completion of the survey was voluntary. Once residents had completed the first side of the survey, they were directed to place the paper aside until the end of the session.

3. Music Therapy Description – The SMTs provided a brief description of music therapy and an explanation of what sessions might entail. Residents who had been at previous sessions were invited to share personal impressions in order to enrich the description for new group members.

4. Warm-Up – Most sessions began with a warm-up or introductory experience that prepared the group for what would be the core music experience during that session (see below). This warm-up was most often musical in nature (e.g., passing a frame drum around the group and inviting residents to play a brief representation of their current emotions), but sometimes it was verbal (e.g., stating a personal goal for the session).

5. Core Experience – The co-leaders led a primary music experience, which often was interspersed with discussion by group members, other SMTs, and the faculty MT-BC.

6. Summary/Closure – At the end of the session and as appropriate, the SMTs provided a verbal summary of key points of the session.

7. Post-Session Survey – The SMTs invited the residents in the group to fill out the second side of the survey, which was identical to the first, minus the confidential code (which appeared on the front). Again, completion of the survey was voluntary. The SMTs collected the surveys and reminded the residents of the day and time for the next session before the group dispersed.

Music Therapy Methods/Variations

As noted above, we adopted a reflexive approach to session planning and facilitation using a decision tree model. Nonetheless, several goals emerged as being consistently relevant for the treatment groups, and these aims informed the selection of music therapy methods and their variations: (1) actively engage with the therapeutic experiences; (2) increase emotional self-awareness and expression, (3) improve perception of self-efficacy, (4) increase and improve communication; (5) improve peer

relationships; and (6) expand knowledge about the use of music as a healthy coping (relapse prevention) mechanism.

Although we were conducting research and collecting data in an ongoing fashion, we did not review or interpret the data during the study; we waited until the treatment period had ended so as not to be influenced by survey results. It was our intent to preserve as natural and typical a treatment setting as possible, in which a variety of music therapy methods were used, as parallels group music therapy service delivery in psychiatric treatment in this country (Silverman, 2007).

Music experiences used for the warm-up and core portions of each session were drawn from all four primary music therapy methods as defined by Bruscia (1998): composition, receptive (listening) improvisation, and re-creation (performing). See Table 1 for a complete listing of music experiences used.

Insert Table 1 about here.

Composition. Song composition, which reportedly has been used to help clients clarify their feelings (Baker, Wigram, Stott, & McFerran, 2008; Ficken, 1976; Freed, 1987) was used on multiple occasions. In one variation, residents received a printed sheet with stems of the lyrics to the song "Imagine" by John Lennon. Each resident was invited to complete the lines of text in whatever way they felt was meaningful and satisfying. One of the SMTs compiled the residents' ideas on a dry erase board. The group members "weighed in" on particular lyrics that they thought best conveyed the ideas and emotions that they wanted to convey; those lyrics were then used in the final version of the song. Finally, the group sang the completed song with the newly composed lyrics. This process

took two sessions to complete and was used twice during treatment—once with "Imagine" and once with a 12-bar blues progression.

In contrast, the residents were involved in individual composition once during the treatment period. For this experience, the song "You Gotta Be" by Des'ree was used. As in the group composition, the residents were encouraged to fill in or change lines of lyrics to convey whatever was true for them in the moment. Next, instead of compiling all of the ideas and merging them into one group song, each resident was encouraged to sing her or his own song for the group, showcasing his or her unique ideas and emotions.

Receptive (Listening). Song discussion (Gardstrom & Hiller, 2010) was used in the group. The SMTs pre-selected suitable songs in conjunction with the faculty MT-BC. The song was played, either in recorded fashion or with electronic keyboard and/or acoustic guitar accompaniment provided by the SMTs. The SMTs and the faculty MT-BC facilitated discussion of the song. Upon request, the selected song was played once more after the discussion. One example of a specific song employed in song discussion is "Landslide" (Stevie Nicks).

In one session, improvised rhythms were used as a rhythmic foundation for structured and creative movement. The faculty MT-BC played a djembe while one SMT directed the residents, who were standing in a loosely formed circle, to move freely however they were inclined. Emphasis was placed on feeling the steady beat in the body and relieving tension. Movements initiated by residents included walking in place, impromptu body percussion, and swaying.

Re-Creative (Performing). Both vocal and instrumental re-creation was used throughout treatment. Residents were encouraged to sing familiar songs, either pre-

selected by the SMTs or chosen by the residents during the session or in a previous session. The SMTs accompanied singing on portable electronic keyboard and/or acoustic guitar. Some examples of pieces re-created vocally through the course of treatment include, "Amazing Grace" (Traditional), "If I Were a Rich Man" (Harnick & Bock), "Lean on Me" (Withers), and "Stand By Me" (King). The song "All You Need is Love" (Lennon) was re-created vocally with the addition of an alto saxophone (played by a resident with previous musical training) and hand-held percussion, including maracas, tambourines, and frame drums.

Rhythmic imitation was frequently used as an introduction to specific instruments or as a precursor to instrumental improvisation. Additionally, residents learned and subsequently re-created an Afro-Caribbean group "groove" on various drums (e.g., tubanos, djembes, etc.) and assorted percussion instruments (e.g., maracas, claves, etc.).

Improvisation. Vocal improvisation was structured within a 12-bar blues and often involved imitative scatting. Freestanding drums, frame drums, and small percussion instruments were most frequently used for instrumental improvisation. Additionally, the resident who played alto saxophone improvised with 12-bar blues accompaniment on multiple occasions.

Both referential and nonreferential forms of improvisation were used throughout treatment. Referential improvisations—defined as improvisation intended to portray a nonmusical referent (Bruscia, 1987)—were commonly implemented, using themes stemming from discussions related to self, treatment, the future, and similar topics. Nonreferential improvisation—defined as improvisation without regard for a particular referent beyond the sounds and music created (Bruscia, 1987)—was used most frequently

as a group experience to create a sense of unity and to provide opportunities for emotional and musical self-expression.

Results

Survey data were compiled in spreadsheets by the faculty researcher and a student assistant. The statistician computed the data using a reputable statistical analysis computer software program.

Viable data were collected for 12 of 20 sessions. In total, 49 residents completed surveys during the course of the study. Eighteen participants completed multiple surveys for a total of 89 surveys. Because group composition changed frequently, however, only data from the first survey that each participant submitted were included in the statistical analysis (11 sessions). Both pre- and post-session scores ranged from "1" to "7" for Anxiety and Sadness and "1" to "6" for Anger. See Table 2 for the distribution of pre- and post-session scores.

Specific findings for each of the three scales are presented in turn below.

Insert Table 2 about here.

For the Anxiety scale, 49 viable data sets were analyzed. Twenty-five individuals (51.0 percent) indicated a decrease in anxious feelings, nineteen (38.8 percent) reported no change, and five (10.2 percent) indicated an increase in anxious feelings. A chi-square test was carried out to determine whether there were differences among the proportions of responses among the three categories (increase, decrease, no change) for the anxiety scale. A *p*-value of 0.0016 was obtained, indicating that there were statistically significant differences among the observed proportions. See Table 3 for more complete data pertaining to direction and magnitude of changes in self-reported anxiety.

Insert Table 3 about here.

Forty-nine viable data sets were analyzed for the Anger scale. Twenty-one individuals (42.9 percent) reported a decrease in anger, twenty-seven (55.1 percent) reported no change, and one individual (2 percent) reported an increase in anger. A chi-square test was carried out to determine whether there were differences among the proportions of responses among the three categories (increase, decrease, no change) for the anger scale. The observed *p*-value was less than 0.001, indicating that there were statistically significant differences among the observed proportions. More complete results for direction and magnitude of change in self-reported anger are presented in Table 4.

Insert Table 4 about here.

For the Sadness scale, 49 viable data sets were analyzed. A total of 32 individuals (65.3 percent) indicated a decrease in sadness, fourteen (28.6 percent) reported no change, and three (6.1 percent) indicated an increase in sadness. A chi-square test was carried out to determine whether there were differences among the proportions of responses among the three categories (increase, decrease, no change) for the sadness scale. The observed *p*-value was less than 0.001, indicating that there were statistically significant differences among the observed proportions. See Table 5 for more complete data pertaining to direction and magnitude of change in self-reported Sadness.

Insert Table 5 about here.

As the notes in Tables 3, 4, and 5 indicate, for all three scales, the majority of participants who reported no change in NA reported a "1" at both pre- and post-session. That is, there was no potential for decrease among these participants, as they began the session at the lowest possible scorable magnitude of NA.

A cross-tabulation of scores from all three scales (see Table 6) indicates that 16 of 49 (32.7%) people reported a decrease in all three scales. Ten individuals (20.4%) reported no change in all three scales. Only 1 of 49 reported an increase in all three scales.

There were two sessions during which all first-session participants perceived a decrease in anxiety. Neither anger nor sadness yielded comparable results. However, when scores for no change are added, numbers increase considerably: 100% of participants reported no change or a decrease in anxiety during 6 of 11 sessions; in anger during 9 of 11 sessions; and in sadness during 7 of 11 sessions.

We note that whenever ordinal scales are used by a participant to rate an inner experience, the magnitude expressed by an increase of, say, one unit is entirely subjective—that is, the resulting data do not constitute interval data. Thus, in our case, we did not think it appropriate to employ means (except possibly to indicate trends in a very broad sense) or to add data from the different scales to obtain an overall measure of NA. Exploring the proportions of participants who exhibited a decrease, increase or no change in pre- and post-session scores for NA is a valid technique for summarizing ordinal data. However, its very nature does not lend itself to drawing conclusions about the magnitude of change that the participants experienced.

Discussion

The wide range of pre- and post-session scores is to be expected, given the natural heterogeneity of individual emotional experience as well as the subjective nature of reporting affect. Additionally, psychotropic medications, no matter how carefully regulated, cannot mitigate entirely the symptoms of MIs such as anxiety and depression, and some individuals were clearly more severely symptomatic than others.

Numerical first-session data for each scale indicated that close to 50 percent of the residents experienced decreases in NA. Numbers were greatest for sadness, followed by anxiety and anger. One third of the residents experienced a decrease in all three emotional states. Additional narrative data, captured in the SMTs' session evaluations and reflective journals, provided a context for and helped to substantiate these findings. Throughout treatment, group members made numerous, unsolicited comments regarding their emotional and physical reactions to the experiences within the group. Most comments were centered on a lessening of anxiety post-session, an increase in energy as a result of the session, and a realization of or appreciation for personal musical talent that led to a boost in confidence or pride.

Three people reported increases in sadness during three separate sessions. In one of these sessions, discussion of the song, "Landslide" led to comments about missing precious time with children, guilt about actions while using substances, and building a life around an addiction to alcohol. The second incidence of an increase in sadness occurred on a day when the weather was gloomy, which many residents linked to their low energy levels and depressed moods. As Gallagher and Steele (2002) note,

> Sometimes session content does not lend itself to positive mood changes (i.e., when listening and discussing serious subject matter such as grief or denial. In

> other cases, clients with addictions may have co-morbid depression or anxiety that may not lift within the course of a session or two, despite their participation level (p. 121).

Regarding sadness, residents who spoke about their depression often stated at the end of the session that they felt an increase in vigor and a "lighter" mood. One such member of the group, after instrumental improvisation, said she was "on fire and driven" and wanted to feel "proud and successful." Another resident spoke at length about how his contributions on the saxophone during a number of sessions had helped him to elevate his self-esteem and, in turn, to feel more optimistic about his future. Positive changes in facial affect (e.g., more frequent smiling) and posture (e.g., less slouching), although not formally measured, were regularly apparent, particularly during vocal and instrumental re-creative experiences.

There appeared to be numerous potential sources of state anxiety. Considerable interpersonal conflict was evident from time to time; on at least two occasions, residents exited sessions after being confronted by other group members. Also, a few residents commented as they entered the room that they had been denied a cigarette break and felt "jittery." Some residents revealed performance anxiety when asked to play instruments or sing in front of others. When conflict and/or anxiety were evident, drumming or instrumental improvisation was used toward catharsis of these intense emotions. In response, participants made statements such as, "It [improvisation] made me less stressed" and, "It allowed me to let go of tension and feel better."

Scores for anger reflect lower pre- and post-session averages as compared to anxiety and sadness. There are at least three plausible explanations for this. First,

perhaps anger was eased during the cigarette break that immediately preceded the music therapy session. Nicotine is used to manage negative affect, and nicotine ingestion has been found to reduce reports of anger (Jamner, Shapiro, & Jarvik, 1999). Second, cognitive behavioral therapy (CBT) groups at the facility incorporated relaxation, cognitive restructuring, and communication skills interventions toward improved anger management. It is possible that these interventions occurred prior to certain music therapy sessions. Third, it could be that residents showed tendencies toward self-deception and/or social desirability response bias. That is, the respondents may have recorded less intensity of anger on the scales than they actually felt in order to show themselves in a positive light.

Additional within- and between-participant comparisons are possible when all survey data are examined (N=89). For instance, among participants who attended multiple sessions (N=18), six particular individuals consistently experienced decreases in anxiety and sadness from the start to the finish of the sessions; four of these same individuals reported consistent decreases in anger. It is plausible that, in comparison to their peers, these individuals were somehow more amenable to treatment in general or to the modality of music, specifically. Future studies might look for connections between trends in self-reported NA and client demographics, such as age, sex, psychiatric diagnosis, and previous musical training and experience.

Assuming that music therapy is implicated in the reported decreases of NA, what mechanisms might help to explain these results? One possibility relates to the "therapeutic factors" of group psychotherapy, as identified by Yalom (2005). Many residents expressed profound negative emotions during the sessions. They spoke of

sadness stemming from torn family relationships and personal defeat of goals and aspirations. One woman spoke of the guilt and despair she experienced after being ignored by her own children when she encountered them on a public bus. Another spoke of feeling "dirty" as a result of things she had done while under the influence of her substance of choice. These moments of deep, personal sharing were always met with intentional, therapeutic responses from other residents, such as empathic listening, the sharing of similar experiences and feelings, words of acknowledgement and encouragement, and compassionate physical contact (e.g., hugs, holding hands, etc.). That is, *catharsis* of difficult emotions, the *instillation of hope*, *universality*, and *altruism* were regularly noted features of the group process that Yalom believes contributes to emotional healing.

Decreases also may have been linked to a concept identified as *experiential avoidance* (Hayes, 1994). Theoretical and empirical data related to NA suggest that some individuals engage in harmful behaviors (e.g., alcohol or drug use, self-harm, binge eating, suicide attempts, etc.) as a way to avoid or suppress unwanted experiences, including distressing emotions (Chapman, Dixon-Gordon, & Walters; 2011). However, distress can be avoided with healthier alternatives, such as music engagement. For instance, the attention-distraction mechanisms of music engagement have been definitively linked to reductions in perceived physical pain of adults (Colwell, 1997; Magill-Levrault, 1993). It may be, quite simply, that music therapy served as a positive distraction for some of the study participants, which allowed the awareness or intensity of their NA to subside over the course of the session. In fact, residents made comments to support this theory, mostly in the context of active music making rather than receptive

(listening) experiences.

Another possible explanation for the decrease has as its basis physiological correlates of music perception. Studies have shown that music stimuli excite pathways in regions of the brain responsible for emotional processing and memory (Boso, Politi, Barale, & Emanuele, 2006). While the mechanisms are not fully understood, it seems that music engagement—like certain other types of human activity—can affect certain neurotransmitters and receptors, both lowering levels of so-called "stress hormones" and promoting the release of endogenous opioids (pain killers) such as dopamine (Panksepp & Bernatsky, 2002; Rider, Floyd, & Kirkpatrick, 1985; Spingte & Droh, 1987; Standley, 1992). These neurochemical changes typically result in a general sense of well being (or even euphoria) for the listener or performer. The potential of music to function as a surrogate for exogenous and/or endogenous opioids among individuals with relevant dependencies or with limbic system dysfunction—associated with anxiety disorders, depression, schizophrenia, and other psychiatric disorders—is a highly complex topic that warrants further investigation.

Limitations and Suggestions for Future Research

There are, of course, multiple factors and limitations that should be considered before generalizing these findings and while designing and implementing future studies on the topic. First, the data were gathered using three visual analogue scales (VAS), which are widely used with confidence; however, our actual scales were not pre-tested, and thus reliability and validity could not be guaranteed. The use of a standardized measurement tool would certainly add to credibility of the findings. Also, data used for the analysis were collected on different days, and a variety of music therapy methods

were used for sessions on different days. As inferred above, participants responded differentially to these various methods. Researchers would benefit from collecting data pertinent to each type of method in order to better understand their potentially distinct influences on affect.

In addition, the participants' experiences outside the sessions—experiences that influenced their emotions—were likely dissimilar on different days. There also may have been changes in the daily residential schedule or interpersonal conflicts within the group that occurred on one day but not another. The make-up of the group changed from session to session as well, potentially affecting the dynamics within the group. Moreover, there was some degree of self-selection, as certain participants left sessions early and/or did not complete one or both parts of the survey. The impact of some of these factors would have been mitigated only by the inclusion of a control group, which may not be possible or feasible in clinical settings, but which is strongly encouraged in future research.

An additional complication is that we not only served as therapists for the groups, but also administered and collected the surveys. As part-time volunteers at the facility (rather than clinical staff or administrators), we had absolutely no authority to grant, deny, or withdraw resident privileges; however, some of the participants may not have realized this and may have consented to complete the surveys (or rated their levels of NA in a particular manner) so as to be seen as cooperative and thereby receive certain benefits. The fact that identity could not be linked to response may or may not have diminished this effect. Future research could guard against this possible deceit by employing someone who is blinded to the purpose of the study to collect the surveys or

by providing for aggregate, anonymous survey return (e.g., a drop box).

Two final caveats related to the measurement of emotion are apparent in the cautionary words of Pelliterri (2009):

> While self-reports of subjective feelings (emotional experience) and observations of affective indicators (behavioral expressions) can be measured, their correspondence with underlying emotional states is inconsistent. That is, self-report and observation of expressive behaviors is not always reliable. States can only be inferred from such methods (p. 33).

And:

> …the expectation of others in the forms of implicit rules of emotional display and cultural norms dictates how an individual may feel and how he or she can express the feelings. Emotional words therefore are more susceptible to masking the actual emotional state and denying one's true experience of emotions (p. 93).

Conclusion

In this study, we aimed to illuminate the impact of music therapy on NA, a pervasive feature of the emotional lives of individuals with co-occurring substance use disorders and mental illnesses. We found that nearly a third of the participants who were involved in the treatment groups reported a decrease in anxiety, sadness, and anger combined, with more than half of the responses in each of these three emotional states indicating a decrease.

These findings—that music therapy may contribute to a palpable decrease in negative emotions for individuals with potentially disabling psychiatric disorders—

suggest a need for further systematic inquiry. Clinicians would benefit from a more thorough understanding of the demographic, environmental, structural, and procedural factors that contribute to desirable emotional shifts through systematic and controlled trials. Equipped with such information, music therapists will be better able to help people with co-occurring psychiatric disorders heighten their engagement in and efforts toward recovery and ultimately lead more manageable, fulfilling, and hopeful lives.

References

Abram, K.M. & Teplin, L. A. (1991). Co-occurring disorders among mentally ill jail detainees: Implications for public policy. *American Psychologist, 46*,1036–1045.

Adington, J. & Duchak, V. (1997). Reasons for substance use in schizophrenia. *Acta Psychiatrica Scandinavica,* 96, 329–333.

al'Absi, M., Carr, S., Bongard, S. (2007). Anger and psychobiological changes during smoking abstinence and in response to acute stress: Prediction of smoking relapse. *International Journal of Psychophysiology, 66*(2), 109-115. doi:10.1016/j.ijpsycho.2007.03.016

American Music Therapy Association (2010). *Member Sourcebook.* Silver Spring, MD: AMTA.

American Psychiatric Association (APA) (1994). *Diagnostic and statistical manual of mental disorders* (4th ed., DSM-IV). Washington, DC: American Psychiatric Press.

Baker, F., Gleadhill, L., & Dingle, G. (2007). Music therapy and emotional exploration: Exposing substance abuse clients to experiences of non-drug-inducing emotions. *The Arts in Psychotherapy, 34*, 321-330.

Baker, F. & Wigram, T. (2004). The immediate and long-term effects of singing on the mood states of people with traumatic brain injury. *British Journal of Music Therapy, 18*(2), 55-64.

Baker, F., Wigram, T., Stott, D., & McFerran, K. (2008). Therapeutic songwriting in music therapy, Part II: Comparing the literature with practice across diverse

clinical populations. *Nordic Journal of Music Therapy*, *18*(1), 32-56.

Baker, T., Piper, M., McCarthy, D., Majeskie, M., & Fiore, M. (2004). Addiction motivation reformulated: An affective processing model of negative reinforcement. *Psychological Review, 111*(1), 33–51.

Bednarz, L., & Nikkel, R. (1992). The role of music therapy in the treatment of young adults diagnosed with mental illness and substance abuse. *Music Therapy Perspectives 10*(1), 21-26.

Boso, M., Politi, P., Barale, F., & Emanuele, E. (2006). Neurophysiology and neurobiology of the musical experience. *Functional Neurology*, *21*(4), 187-191.

Bradizza, P. & Stasiewicz, P. (2003). Qualitative analysis of high-risk drug and alcohol use situations among severely mentally ill substance abusers. *Addictive Behaviors*, 28, 157–169.

Bruscia, K. E. (1987). *Improvisational models of music therapy*. Springfield, IL: Charles C. Thomas.

Bruscia, K. E. (1998). *Defining music therapy*. Gilsum, NH: Barcelona.

Burns, D. (2001). The effect of the Bonny Method of Guided Imagery and Music on the mood and life quality of cancer patients. *Journal of Music Therapy, 38*(1), 51-65.

Burt, J. (1995). Information Sharing: Distant thunder: Drumming with Viet Nam veterans. *Music Therapy Perspectives, 13*(2), 110-112.

Carlson, C., Collins, F., Stewart, J., Porzelius, J., Nitz, J., & Lind, C. (1989). The assessment of emotional reactivity: A scale development and validation study.

Journal of Psychopathology and Behavioral Assessment, 11(4), 313-325, DOI: 10.1007/BF00961530

Caton, C., Shrout, P., Eagle, P., et al. (1994). Risk factors for homelessness among schizophrenic men: A case-control study. *American Journal of Public Health, 84*, 265–270.

Chapman, A., Dixon-Gordon, K., & Walters, K. (2011). Experiential avoidance and emotion regulation in Borderline Personality Disorder. *Journal of Rational-Emotive Cognitive-Behavioral Therapy, 29*, 35–52.

Cheetham, A., Allen, N., Yücel, M., & Lubman, D. (2010). The role of affective dysregulation in drug addiction. *Clinical Psychology Review 30*, 621–634.

Clark, M., Isaacks-Downton, G., Wells, N., Redlin-Frazier, S., Eck, C., Hepworth, J., & Chakravarthy, B. (2006). Use of preferred music to reduce emotional distress and symptom activity during radiation therapy. *Journal of Music Therapy, 43*(3), 247-265.

Colwell, C. (1997). Music as distraction and relaxation to reduce chronic pain and narcotic ingestion: A case study. *Music Therapy Perspectives, 15*(1), 24-31.

de L'Etoile, S. (2002). The effectiveness of music therapy in group psychotherapy for adults with mental illness. *The Arts in Psychotherapy 29*, 69–78.

Derogatis, L., Lipman, R., & Covi, L. (1973). SCL-90: An outpatient psychiatric rating scale – preliminary report. *Psychopharmacology Bulletin, 9*, 113-117.

Dingle, G. A., Gleadhill, L., & Baker, F. A. (2008). Can music therapy engage patients in group cognitive behaviour therapy for substance abuse treatment? *Drug and Alcohol Review 27*(2), 190-196.

Drake, R.E. & Brunette, M.F. (1998). Complications of severe mental illness related to alcohol and other drug use disorders. In M. Galanter (Ed.). *Recent Developments in Alcoholism. Volume XIV, Consequences of Alcoholism* (pp. 285–299). New York: Plenum Publishing Company.

Ficken, T. (1976). The use of songwriting in a psychiatric setting. *Journal of Music Therapy, 13*, 163-171.

Folstein, M. & Luria, R. (1973). Reliability, validity, and clinical application of the visual analogue mood scale. *Psychological Medicine, 3*, 479-486.

Freed, B. (1987). Songwriting with the chemically dependent. *Music Therapy Perspectives, 4*, 13-18.

Gallagher, L. M., & Steele, A. L. (2002). Music therapy with offenders in a substance abuse/mental illness treatment program. *Music Therapy Perspectives 20*(2). 117-122.

Gardstrom, S. & Hiller, J. (2010). Song discussion as music psychotherapy. *Music Therapy Perspectives, 28*(2), 147-156.

Gross, J. & Munoz, R. (1994). Emotion regulation and mental health. *Clinical Psychology: Science and Practice, 2*(2), 151-164.

Gussak, D. (2007). Effectiveness of art therapy in reducing depression in prison populations. *International Journal of Offender Therapy and Comparative Criminology 11*, (4), 444-460.

Eyre, L. (2008). Medical music therapy and kidney disease: The development of a clinical method for persons receiving haemodialysis. *Canadian Journal of Music Therapy, 14*(1), 55-87.

Hakvoort, L. (2002). A music therapy anger management program for forensic offenders. *Music Therapy Perspectives, 20*(2), 123-132.

Hayes, S. C. (1994). Content, context, and the types of psychological acceptance. In S. C. Hayes, N. S. Jacobson, V. M. Follette, & M. J. Dougher (Eds.), *Acceptance and change: Content and context in psychotherapy* (pp. 13–32). Reno NV: Context Press.

Hiller, J. (2011). *Theoretical foundations for understanding the meaning potentials of rhythm in improvisation.* Retrieved from ProQuest Digital Dissertations. (AAT 3457829)

Jacobi, E. (1995). The efficacy of the Bonny Method of Guided Imagery and Music as experiential therapy in the primary care of persons with rheumatoid arthritis. *Dissertation Abstracts International: Section B: The Sciences and Engineering*. Vol. 56(2-B), Aug 1995, 1110.

Jones, J. (2005). A comparison of songwriting and lyric analysis techniques to evoke an emotional change in a single session with people who are chemically dependent. *Journal of Music Therapy, 42*(2), 94-111.

Lesiuk, T. (2010). The effect of preferred music on mood and performance in a high-cognitive demand occupation. *Journal of Music Therapy, 47*(2), 137-154.

Magee, W.L., & Davidson, J.W. (2002). The effect of music therapy on mood states in neurological patients – A pilot study. *Journal of Music Therapy, 39*(1), 20-29.

Magill-Levrault, L. (1993). Music therapy in pain and symptom management. *Journal of Palliative Care, 9*(4), 42-48.

McKinney, C., Antoni, M., Kumar, M., Tims, F., & McCabe, P. (1997). Effects of Guided Imagery and Music (GIM) therapy on mood and cortisol in healthy adults. *Health Psychology*, 16(4), 390-400.

Merikangas, K. R., Dierker, L. C., & Szamari, P. (1998). Psychopathology among offspring of parents with substance abuse and/or anxiety disorders: A high risk study. *Journal of Child Psychology and Psychiatry, 39*(5), 711−720.

Monk, T. (1989). A visual analogue technique to measure global vigor and affect. *Psychiatry Research, 27*(1), 89-99.

National Co-Morbidity Survey – Revised (NCS-R) (2005). Harvard School of Medicine. Retrieved from http://www.hcp.med.harvard.edu/ncs/

National Institute on Drug Abuse (2009). *Topics in Brief*. Retrieved from http://www.nida.nih.gov/pdf/tib/prescription.pdf

Panksepp, J. & Bernatsky, G. (2002). Emotional sounds and the brain: The neuro-affective foundations of musical appreciation. *Behavioural Processes, 60*(2), 133-155.

Passion-Gonzalez, P., Templer, D., & Walker, S. (2001). Mood correlates of substance use among chronic mentally ill outpatients. *Journal of Orthomolecular Medicine, 16*(4), 241-247.

Pelliterri, J. (2009). *Emotional processes in music therapy*. Gilsum, NH: Barcelona.

Rider, M. S., Floyd, J. W., & Kirkpatrick, J. (1985). The effect of music, imagery, and relaxation on adrenal corticosteroids and the re-entrainment of circadian rhythms. *Journal of Music Therapy, 22*(1), 46-58.

SAMHSA (Substance Abuse and Mental Health Services Administration)(2010). *Results*

from the 2009 National Survey on Drug Use and Health: Volume I. Summary of National Findings. Retrieved from http://www.oas.samhsa.gov/NSDUH/2k9NSDUH/2k9ResultsP.pdf

Silverman, M. (2007). Evaluating current trends in psychiatric music therapy: A descriptive analysis. *Journal of Music Therapy, 44*(4), 388-414.

Singh, J., Mattoo, S., Sharan, P., & Basu, D. (2005). Quality of life and its correlates in patients with dual diagnosis of bipolar affective disorder and substance dependence. *Bipolar Disorder, 7*(2), 187-91.

Spingte, R. & Droh, R. (1987). Effects of anxiolytic music on plasma levels of stress hormones in different medical specialties. In Pratt, R. R. (Ed.), *The Fourth International Symposium on Music: Rehabilitation and Human Well-Being* (pp. 88-101), University Press of America, Lanham, MD.

Standley, J. (1992). Clinical applications of music and chemotherapy: The effects on nausea and emesis. *Music Therapy Perspectives, 10*(1), 27-35.

Swofford, C., Kasckow, J., Scheller-Gilkey, G., & Inderbitzin, L. (1996). Substance use: A powerful predictor of relapse in schizophrenia. *Schizophrenia Research 20*(1), 145–151.

Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma & J. D. Maser (Eds.), *Anxiety and the anxiety disorders* (pp. 681-706), Hilssdale, NJ: Erlbaum.

Thaut, M. H. (1989). The influence of music therapy interventions on self-rated changes in relaxation, affect, and thought in psychiatric prisoner-patients. *Journal of Music Therapy, 26*(3), 155-166.

Treder-Wolff, J. (1990). Music therapy as a facilitator of creative process in addictions treatment. *The Arts in Psychotherapy, 17*(4), 319-324.

Unkefer, R. (Ed.)(2005). *Music therapy in the treatment of adults with mental disorders: Theoretical bases and clinical interventions.* Gilsum, NH: Barcelona.

Warner, R., Taylor, D., Wright, J., Sloat, A., Springett, G., Arnold, S., & Weinberg, H. (1994). Substance use among the mentally ill: Prevalence, reasons for use, and effects on illness. *American Journal of Orthopsychiatry*, 64, 30–39.

Watson, D., & Clark, L.A. (1994). Manual for the Positive and Negative Affect Schedule – Expanded Form. The University of Iowa. Retrieved from http://www.psychology.uiowa.edu/faculty/clark/panas-x.pdf

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of Positive and Negative Affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063-1070.

Yalom, I. (2005). *The theory and practice of group psychotherapy* (5th ed.). New York: Basic Books.

Table 1

Music Experiences Per Session

Date	*Warm-Up*	*Core*	*Closing*
#1 *2-15*	Sound vocabulary on frame drums	Instrumental Improvisation (Non-referential, Group): Rondo form, Therapist -Conducted	Therapeutic Singing: "I Can See Clearly Now"
#2 *2-17*		Community Drumming (residents conducted)	Therapeutic Singing: "I Can See Clearly Now"
#3 *2-22*	Sound vocabulary on frame drums	Instrumental Improvisation (Non-referential, Group): Rondo form, Resident -Conducted	Therapeutic Singing: "Lean On Me"
#4 *3-1*	Instrumental Improvisation (Referential, Individual): current emotional state on frame drums	Receptive (Song Discussion): "Landslide"	"I Am a Bright Light"
#5 *3-8*	Instrumental Improvisation (Non-referential, Group): various hand-held percussion	Vocal and Instrumental Re-creation: "Stand By Me"	Verbal summary
#6 *3-15*	Instrumental Improvisation (Referential, Individual): current emotional state on various hand-held percussion	Composition (Group): "Imagine"	Therapeutic Singing: "Imagine" (group composition)
#7 *3-22*	Explanation of "Song Memories and Associations Worksheet"	Receptive: Completed "Song Memories and Associations Worksheet." Therapists instrumentally and vocally re-created songs noted on some residents' sheets	Vocal Re-creation: "All You Need is Love" (saxophone solo by resident)
#8 *3-24*	Receptive and verbal introduction to the blues	Composition (Group): 2 verses over 12-bar blues progression	Vocal Re-creation: "Group Blues" (group composition w/ saxophone solo by resident)
#9 *3-29*	Vocal improvisation (Non-referential, Individual): 12-bar blues. Residents encouraged to sing about current emotional state	Composition (Group): 2 verses over 12-bar blues progression	Vocal Re-creation: "Group Blues" (group composition w/ saxophone solo by resident)
#10 *4-5*		Instrumental Improvisation (Referential, Group): Based on the stages of recovery	Verbal summary
#11 *4-7*	Receptive: Music-assisted creative movement to live drum accompaniment	Composition (Individual): "You Gotta Be"	Vocal Re-creation: "You Gotta Be" (individuals' compositions)
#12 *4-12*	Community Drumming	Composition (Group): "Hey Jude" (w/ verses about individual group members)	Verbal summary

Table 2

Distribution of Scores

Pre-session (score – N)

Anxiety	Anger	Sadness
1 - 16	1 - 26	1 - 12
2 - 2	2 - 6	2 - 3
3 - 5	3 - 5	3 - 10
4 - 12	4 - 7	4 - 12
5 - 7	5 - 3	5 - 7
6 - 3	6 - 2	6 - 3
7 - 4	7 - 0	7 - 4

Post-session (score – N)

Anxiety	Anger	Sadness
1 - 24	1 - 39	1 - 28
2 - 5	2 - 5	2 - 8
3 - 9	3 - 4	3 - 6
4 - 5	4 - 1	4 - 2
5 - 4	5 - 0	5 - 3
6 - 0	6 - 0	6 - 0
7 - 2	7 - 0	7 - 2

Table 3

Anxiety: Direction and Magnitude of Change

	N	%
Increase	5	10.2
Decrease	25	51.0
No Change	19	38.8

Magnitude of Change	N	%
-6	2	04.1
-5	1	02.0
-4	1	02.0
-3	5	10.2
-2	7	14.3
-1	9	18.4
0	19	38.8*
1	1	02.0
2	3	06.1
3	1	02.0
4	0	00.0
5	0	00.0
6	0	00.0

**Note.* 15 individuals (30.6%) started at 1 and recorded no change.

Table 4

Anger: Direction and Magnitude of Change

	N	%
Increase	1	02.0
Decrease	21	42.9
No Change	27	55.1

Magnitude of Change	N	%
-6	0	00.0
-5	0	00.0
-4	2	04.1
-3	4	08.2
-2	5	10.2
-1	10	20.4
0	27	55.1*
1	0	00.0
2	1	02.0
3	0	00.0
4	0	00.0
5	0	00.0
6	0	00.0

**Note.* 26 individuals (53.1%) started at 1 and reported no change.

Table 5

Sadness: Direction and Magnitude of Change

	N	%
Increase	3	06.1
Decrease	32	65.3
No Change	14	28.6

Magnitude of Change	N	%
-6	0	00.0
-5	1	02.0
-4	1	02.0
-3	9	18.4
-2	12	24.5
-1	9	18.4
0	14	28.6*
1	0	00.0
2	3	06.1
3	0	00.0
4	0	00.0
5	0	00.0
6	0	00.0

**Note.* 11 individuals (22.4%) started at 1 and recorded no change.

Table 6

*Anxiety*Anger*Sadness Crosstabulation*

Anxiety * Anger * Sadness Crosstabulation

Count

Sadness			Anger			Total
			Decrease	No Change	Increase	
Decrease	Anxiety	Decrease	16	6		22
		No Change	2	6		8
		Increase	1	1		2
	Total		19	13		32
No Change	Anxiety	Decrease	1	2		3
		No Change	0	10		10
		Increase	0	1		1
	Total		1	13		14
Increase	Anxiety	No Change	0	1	0	1
		Increase	1	0	1	2
	Total		1	1	1	3