

THESIS

THERAPEUTIC MUSIC EXPERIENCES FOR COLLEGE-AGED
WOMEN WITH NEGATIVE BODY PERCEPTION

Submitted by

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ABSTRACT

THERAPEUTIC MUSIC EXPERIENCES FOR COLLEGE-AGED WOMEN WITH NEGATIVE BODY PERCEPTION

Body image disturbances and maladjusted compensatory eating behaviors are a problem which affects a significant portion of the population, especially young women. These issues can lead to an eating disorder, a life-threatening psychological disease that manifests physically. Research indicates that recovery from an eating disorder is extremely difficult but possible through a variety of medical, nutritional, psychological, and creative therapies. One creative therapy that has been successfully utilized by clinicians is music therapy. However, there is a limited amount of information published regarding therapeutic music's efficacy in treating body image and eating troubles.

The purpose of this pilot study was to gather initial efficacy data on a variety of therapeutic music interventions in improving self-image through a descriptive case-study. Participants consisted of six female students between the ages of 18 and 25 years recruited from the Colorado State University campus. Subjects took part in at least three out of five one hour sessions that occurred for a period of five consecutive days. Music interventions included music directed progressive relaxation, movement and breathing to music, improvisation, music leading, lyric analysis, and therapeutic song writing. Data was collected blindly through a questionnaire prepared by the researcher as well as a pre-test post-test comparison of the Tennessee Self-Concept Scale. Data was analyzed with a paired t-test with the independent variable of participation in the music intervention and the dependent variable being the score received on the

Tennessee Self-Concept Scale. Because of the low number of participants and the absence of a control group, alpha was set at $p < 0.10$.

The calculated t-score of the total score on the Tennessee Self-Concept Scale was $p = 0.133$ and the null hypothesis was therefore not rejected and significance not reached. However, three of the four participants on which data was collected showed improvement in total score with the fourth participant showing no change. Further, all participants improved in the specific area of physical self-concept, reaching significance with a calculated t-score of $p = 0.089$. Finally, responses on the post-test questionnaire indicated that participants enjoyed taking part in the therapeutic music interventions and felt as though they had received some benefit from taking part in sessions.

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CHAPTER 1

INTRODUCTION

Disturbances in eating caused by body image distortion or dissatisfaction affect a significant portion of the population (Society for Adolescent Medicine, 2003) and can be extremely dangerous, even deadly (Mellace, 2010). An eating disorder is categorized as any ongoing disruption in eating patterns or behaviors meant for the purpose of weight control which damage a person's physical or psychological health. While any person can be afflicted with an eating disorder, the most commonly affected population is young Caucasian women (First & Tasman, 2004). The disease has a prevalence of five percent among young women, making it the third most prevalent chronic illness within that population (Society for Adolescent Medicine, 2003). Further, with a long term mortality rate of 20%, eating disorders are regarded as the mental illness with the highest mortality rate.

Eating disorders can manifest in several ways. Anorexia nervosa is classified as the purposeful refusal to reach or maintain a body weight that is at least 85% of what is expected for a particular weight and height. Sub-types of this group include the restricting type in which the individual restricts food and does not regularly binge or purge and the binge-eating/purging type in which the individual may eat and then purge among periods of restriction (First et al., 2004). A diagnosis of bulimia nervosa is not accompanied by weight criteria and is described as recurring episodes of substantial overeating, or bingeing, followed by an action meant to prevent weight gain such as vomiting, taking laxatives, fasting, or over-exercising (First et al., 2004). Health complications of these disorders include vitamin and mineral deficiencies, electrolyte imbalances, dehydration, decreased thyroid function, reduced heart rate, body temperature and

blood pressure, anemia, estrogen deficiency, muscle atrophy, bone density loss, heart failure, infection susceptibility, dental or esophageal damage, pancreatitis, and death (Ballas & Zieve, 2010; Eating Disorder Venture, 2006).

Another eating disorder is binge eating disorder. Persons with this disorder experience regular and uncontrollable binge eating episodes which are not accompanied by a compensatory behavior (First et al., 2004). Health risks include high blood pressure, high cholesterol, elevated triglycerides, heart disease, type II diabetes, and gallbladder disease (National Eating Disorder Association, 2005). Finally, the majority of those diagnosed with an eating disorder do not meet full diagnostic criteria for the above disorders and are therefore given the diagnosis of eating disorder not otherwise specified (First et al., 2004). Despite not meeting full diagnostic criteria, these people face the same health risks as those diagnosed with other eating disorders (Mellace, 2010).

In addition to the health risks associated with a diagnosis of an eating disorder, those who suffer from one are likely to suffer from a comorbid psychiatric disorder (Hudson, Hiripi, Pope, & Kessler, 2012). The most common disorders which afflict those with an eating disorder are major depressive disorder and other forms of depression (Jain, Gitlin, & Lavretsky, 2012), anxiety disorders (Swinbourne, Hunt, Abbott, Russell, St. Clare, & Touyz, 2012), obsessive-compulsive-disorder (Boisseau, Thompson-Brenner, Caldwell-Harris, Pratt, Farchione, & Harrison, 2012), addiction (Gearhardt, White, Masheb, Morgan, Crosby, & Grilo, 2012), and body dysmorphic disorder (Dingemans, van Rood, de Groot, & van Furth). Typically, these comorbid disorders must be addressed within the treatment of someone with an eating disorder in order to promote psychological healing and well-being.

There are several types of treatment that are traditionally used with those diagnosed with an eating disorder. Pharmacological treatments, including antipsychotics, selective serotonin reuptake inhibitors, and mood stabilizers, are sometimes prescribed. However, it is typically recommended that pharmaceutical treatments are paired with some form of psychological therapy (Flament, Bissada, & Spettigui, 2011). One of the psychological therapies is dialectical behavior therapy. This therapy focuses on reducing impulses and self-destructive behaviors by addressing self-mindfulness and developing appropriate coping mechanisms. Sessions focus on teaching skills to participants and assigning “homework” to implement these skills (Federici, Wisniewski, & Ben-Porath, 2012). Cognitive behavioral therapy is one of the most popular and most widely researched therapies for persons with an eating disorder. This therapy centers on psycho-education, appropriate coping mechanisms, and improving one’s self-perception (Tatham, 2011). Psychodynamic, which focuses on the client-therapist relationship and the perception of relationships, may also be paired with one of the other psychological therapies (Murphy, Russell, & Waller, 2005).

Unfortunately, these traditional psychiatric therapies for persons with an eating disorder are met with high rates of attrition or eventual relapse (Fassino, Piero, Tomba, & Abbate-Daga, 2009). Many people diagnosed with an eating disorder do not wish to or see a need to change and are therefore not internally motivated. Therefore, it is important that therapies which are inherently motivating are available (Vitousek, Watson, & Wilson, 1998). Many clinicians report the benefits of creative therapies. These mediums are believed to be non-threatening as they provide a non-verbal means of communication as well as externally motivating (Brooke, 2008). Creative therapies include drama therapy, dance therapy, poetry therapy, and art therapy.

Unfortunately, these mediums of therapy have not been highly researched and are primarily supported through case-studies and clinician reports.

Because of its non-threatening medium and motivating factors, music therapy has been shown to be effective in psychiatric populations (Gold, Voracek, & Wigram, 2004). Music therapy works on three levels: 1. To increase comfort and rapport through activity level exercises (Crowe, 2007b), 2. To increase self-awareness and expression through re-educative exercises (Crowe, 2007a), and 3. To address deep emotional issues and change behavior patterns at the reconstructive level (Leite, 2007). Populations which have been found to benefit from music therapy include those suffering from anxiety (Gadberry, 2011), depression (Maratos, Crawford, & Procter, 2011), and addiction (Soshensky, 2001). As these disorders are frequently found as a comorbid diagnosis in those diagnosed with an eating disorder, it is expected that music therapy may also be beneficial for persons with an eating disorder. Little research has been published in this area though several case studies and clinician reports support this theory.

The researcher aimed to provide a pilot study addressing music's efficacy for those suffering from disordered eating through a descriptive case study. The music interventions occurred through one hour group sessions for five consecutive days and consisted of activity level and re-educative exercises. Exercises consisted of relaxation, improvisation, group leading, lyric analysis, and therapeutic songwriting (Appendix H). Six female students between the ages of 18 and 25 years were recruited from the Colorado State University campus with the exclusion criteria meant to establish similarity and rapport between participants.

Data was collected blindly through a pre-test post-test administration of the Tennessee Self-Concept Scale (Fitts & Warren, 1997) as well as through a descriptive questionnaire (Appendix B, Appendix C). Data was analyzed with a paired t-test with the independent variable

of participation in the music intervention and the dependent variable of the score on the Tennessee Self-Concept Scale. Alpha was set at $p < 0.10$. With the calculated total score of $p = 0.133$, significance was not achieved and the null hypothesis was therefore not rejected. However, results did indicate some improvements and significance was reached at $p = 0.089$ for the domain of physical self-concept. Due to the low number of participants and absence of a control group, it was not expected that results of this descriptive pilot study would suggest causation. However, the researcher aimed to find a connection which will provide a basis for future research in this area.

Statement of Problem

The purpose of this study was to discover a connection between therapeutic music interventions and the improvement of a negative body image.

Hypothesis

One week of participation in group therapeutic music interventions will have no effect on body perception at $p < 0.10$.

Delimitations, Limitations, and Assumptions

For the purpose of fostering rapport among subjects and in order to ensure access to professional counseling services, the researcher limited the participants to female Colorado State University students between the ages of 18 and 25 years. Participants were not randomized and were all recruited from Colorado State University. Participants demonstrated varying degrees of body dissatisfaction, differences in previous diagnosis, and disparities in previous participation

in counseling or therapy. For these reasons, external validity was not strong. Also, participants had access to and were not discouraged from utilizing mental health services on campus which may have affected outcomes and internal validity via history. It was assumed that all participants have actual body image dissatisfaction as reported and are truthful in answering both qualitative and quantitative questionnaires.

CHAPTER II

LITERATURE REVIEW

An eating disorder is a dangerous disease which affects a significant portion of the population (First et al., 2004). The majority of those diagnosed also suffer from a diagnosable comorbid disorder such as depression, anxiety, body dysmorphic disorder, or addiction (Hudson, Hiripi, Pope, & Kessler, 2012). A variety of therapies are used in the treatment of eating disorders and their comorbid correlates including pharmacological treatments, cognitive behavioral therapy, dialectical behavior therapy, and psychodynamic therapy. Rising in popularity are the use of creative therapies in treatment, including art therapy, dance therapy, poetry therapy, drama therapy, and music therapy (Dokter, 1994). Music therapy has been shown to be beneficial in the treatment of the diagnosis associated with eating disorders and has been implicated in some direct treatment (Hilliard, 2001). Therefore, a short term music therapy intervention may be beneficial in the use of treating body image distortion and dissatisfaction.

Summary of Major Eating Disorders

The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision [DSM-IV-TR] (2004), categorizes an eating disorder as, “A persistent disturbance of eating behavior or behavior intended to control weight, which significantly impairs physical health or psychosocial functioning” (First et al., 2004, p. 1098). It is regarded as the mental illness with the highest mortality rate with 10 percent mortality within 10 years, 20 percent mortality rate within 20 years, and only a 30 to 40 percent recovery rate (Mellace, 2010). The disease has a fairly high incidence rate, cited as the third most common chronic illness among

young women with a prevalence of 5% (Society for Adolescent Medicine, 2003). Eating disorders appear to present most commonly among Caucasian women. A 2007 nationwide pediatric sample showed about 92 percent of persons treated for an eating disorder in an inpatient setting were female and about 78 percent were Caucasian (Calderon, Vander, Collett, Garrison, & Toth, 2007). A wide variety of disturbed eating patterns fall into the category of disordered eating (also known as an eating disorder not otherwise specified [EDNOS]), however the three most common and most recognized eating disorders include anorexia nervosa (AN), bulimia nervosa (BN), and binge-eating disorder (BED) (First et al., 2004).

Anorexia Nervosa

Anorexia Nervosa is classified by the DSM-IV-TR (2004) as the refusal to reach or maintain body weight that is at least 85% of what is expected based on age and height, an extreme fear of becoming overweight despite being underweight, disturbances in self-view of body size, denial of current body size or shape, and amenorrhea (in post-menarcheal females). Sub-types of AN include the restricting type (the individual does not regularly binge and purge), and the binge-eating/purging type (the individual binge-eats and purges during episodes of AN). Statistically, AN affects 0.5 percent of the population with between 90 and 95 percent of afflicted persons being female, and the majority of persons coming from a higher socioeconomic status (SES) in affluent and industrialized nations (First et al., 2004). This may be the result of stereotypes in western cultures basing self-worth on weight and appearance. This perceived body ideal helps serve as a catalyst for food and weight control in those suffering from the disorder (Fairburn, Shafran, & Cooper, 1998).

Health issues caused by AN are highly related to malnutrition and starvation. These include deficiencies in vitamins and minerals, imbalances in electrolytes, dehydration, decreased thyroid and insulin function, scaly or discolored skin, brittle hair or hair loss, reduced heart rate, decreased body temperature, low blood pressure, chronic constipation, estrogen deficiency, anemia, muscle atrophy, and bone density loss. In untreated cases, death is likely to occur as the result of a weakening of the heart muscle or heart failure caused by mineral and electrolyte deficiencies. Death is also more likely to occur through infection as person with AN's body is less capable of producing bone marrow and white blood cells (Eating Disorder Venture, 2006).

Bulimia Nervosa

Bulimia nervosa is described in the DSM-IV-TR (2004) as recurring instances of binge eating (eating an amount which is substantially larger than that which a normal person would eat in a given amount of time and a lack of personal control throughout the eating period) followed by compensatory actions done in order to prevent weight gain (including but not limited to self-induced vomiting, the inappropriate use of laxatives or diuretics, fasting, or extreme over-exercising). To be categorized as bulimia nervosa, the individual must present binge and purge behaviors at least two times per week on average for three months or more. As with AN, persons suffering from bulimia nervosa often base self-image on physical size. Specific types of BN include the purging type (regular self-induced vomiting or the improper use of laxatives, diuretics, or enemas) and the non-purging type (use of other behaviors to compensate for caloric intake such as fasting or over-exercise). Bulimia nervosa has been found to affect approximately two percent of the population with 10 percent of those affected being male (First et al., 2004).

Bulimia nervosa carries the risk of many health complications including esophagus damage, constipation, dehydration, dental cavities, electrolyte imbalances, hemorrhoids, inflammation, pancreatitis, esophageal tears, gingivitis, broken blood vessels in the eyes, and swollen salivary glands (Ballas & Zieve, 2010). Physical signs of BN, however, may not be as obvious as in AN as persons with BN may present a normal or even above average body weight. The appearance of a normal weight for persons with BN has created a misconception that it is a safer disease than AN. However, in 2010, the National Eating Disorder Association reported that the mortality rate of persons with BN is only .1% lower than for persons with AN. This may be aggravated by higher rates of suicide found in the population of persons with BN (Kaye, 2010).

Binge Eating Disorder

The DSM-IV-TR (2004) describes BED as participating in recurring periods of binge eating (as described above) associated with at least three of five criteria including: (1.) eating much quicker than that which is typical, (2.) eating far past the point of being comfortably full, (3.) consumption of large amounts of food with the absence of hunger, (4.) eating alone due to embarrassment related to the amount of food being consumed, (5.) Feeling a sense of personal disgust, guilt, or depression related to overeating. Binge eating behaviors occur at least twice a week for a period of six months, are not accompanied by purging behaviors, and cause significant distress. The exact population suffering from BED is unknown, however it is assumed to be under five percent with 40 percent of this group being male (First et al., 2004). According the National Eating Disorder Association (2005), health risks of BED are closely

related to those of obesity and include high blood pressure, high cholesterol, elevated triglycerides, heart disease, type II diabetes, and gallbladder disease.

Eating Disorder Not Otherwise Specified

Eating Disorder Not Otherwise Specified presents disturbances in image and eating behavior that do not meet full diagnostic criteria for AN, BN, or BED. The majority of persons suffering from an eating disorder are diagnosed as EDNOS (Mellace, 2010). Common reasons for a diagnosis of EDNOS over AN or BN include the continuation of menses, weight remains within a normal range (despite weight loss), binge and purge behaviors which occur less than two times a week or have occurred for less than six months, the patient spits out his or her food before swallowing instead of purging after consumption, or the binge cycle occurs without the typical presence of purging behaviors (First et al., 2004). Persons with EDNOS face many of the same health risks as persons with AN or BN. These can include an imbalance of electrolytes, muscle atrophy, vitamin and mineral deficiency, esophageal tears, throat and larynx cancer, acid reflux, respiratory infections, blindness, and heart failure (Mellace, 2010).

Neurobiology of Eating Disorders

The cause of eating disorders is not clear. It is typically believed that eating disorder development is associated with trauma, family dynamics, cultural expectations, societal stereotypes, or any combination of these factors (Ballas et al., 2010). Those with eating disorders are also more likely to have experienced teasing at some point (Edlund, Halvarsson, Gebre-Medhin, & Per-Olow, 1999). Recent research indicates that eating disorders may also have a root in neurobiology. In a comparison study, patients and control groups appeared to show

similar neural activation when looking objectively at non-self images. However, when looking at self-images, controls demonstrated increased activation in the middle frontal gyri, insula, precuneus, and occipital region while eating disorder patients did not have increased activity in any area (Sachdev, Mondraty, Wen, & Gulliford, 2008). Activated cortical areas, namely the frontal gyri, are associated with reasoning and rational thought and their lack of activation may be what leads to the irrational view of self.

Further brain imaging research indicates that persons with eating disorders have altered brain serotonin levels that likely leads to an overall dysregulation of emotions and of the neurological reward system. The serotonin disturbance appears to increase with hormonal changes associated with puberty which may explain the high rate of adolescent onset of eating disorders. Disturbances appear to continue even after treatment and recovery from an eating disorder which may explain the high rate of relapse (Kaye, 2007). While an eating disorder is typically the result of a combination of many factors, neurological differences are likely a factor.

Comorbid Disorders

All types of eating disorders are highly comorbid with other disorders found in the DSM-IV-TR (Hudson, Hiripi, Pope, & Kessler, 2012). Even without an official diagnosis, those with eating disorders test as having higher levels of inner tension, greater suspiciousness, and decreased inner stability (Dunn & Ondercin, 1981). Within AN specifically, patients are about twice as likely to be diagnosed with a mood disorder as in the general population. Similarly, those with a mood disorder are 3.6 percent more likely to suffer from an eating disorder than the general population (Godart et al., 2006). Unfortunately, many patients with eating disorders also

present with alexithymia, the inability to verbally express emotions, which makes treatment for the disorder and any comorbid disorders exceptionally difficult (Fenwick & Sullivan, 2011).

Major depressive disorder and other forms of depression are most commonly associated with eating disorders. Severity is highly linked to the severity of eating disorder symptoms (Godart et al., 2006) and likelihood of relapse (Mischoulon et al., 2011). Case studies and clinical trials indicate that the treatment of depression, both pharmaceutically and through therapy, may lead to recovery of the comorbid eating disorder (Jain, Gitlin, & Lavretsky, 2012).

In addition to depressive disorders, anxiety disorders are highly correlated with eating disorders. A study of 100 women in treatment for an eating disorder found that 65 percent of patients met the DSM-IV-TR criteria for one or more anxiety disorder with 69 percent of these cases reporting onset of anxiety prior to onset of the eating disorder (Swinbourne, Hunt, Abbott, Russell, St. Clare, & Touyz, 2012). The most common anxiety disorders found were social phobia, post-traumatic stress disorder, generalized anxiety disorder, obsessive-compulsive disorder, panic/agoraphobia, and specific phobia. Catastrophic worry, a symptom of anxiety, is often present in persons with an eating disorder as most patients create a higher number of catastrophic worry steps in Catastrophizing Interviews than controls (Sternheim et al., 2012). Further research suggests that certain anxiety symptoms are very similar to those reported in eating disorders such as fear, specific triggers, and the use of avoidance (Hildebrandt, Bacow, Markella, & Loeb, 2012).

One specific anxiety disorder often linked to an eating disorder is obsessive-compulsive-disorder (OCD). Using the Barratt Impulsiveness Scale, those with eating disorders were related to persons with OCD in showing high levels of impulsivity. However, the eating disorder group had higher inhibitory control (Boisseau, Thompson-Brenner, Caldwell-Harris, Pratt, Farchione, &

Harrison, 2012). These discrepancies in impulsivity versus inhibitory control may be due to clinical differences in behaviors between persons presenting with AN, BN, and BED. Purging specifically, over bingeing or restrictive eating, has been associated with higher levels of obsessions, compulsions, and impulsivity (Hoffman et al., 2012).

Correlates have further been drawn between eating disorders and addiction. This link is especially clear in persons suffering from BED or BN. Using the Yale Food Addiction Scale, 57 percent of patients diagnosed with BED met the criteria for food addiction. This 57 percent also presented the most severe cases (Gearhardt, White, Masheb, Morgan, Crosby, & Grilo, 2012). Using Goodman's addictive disorder criteria, patients with BN presented almost identically to those with a drug addiction. Further similarities were also discovered using the Addiction Potential Scale of the Minnesota Multiphasic Personality Inventory and the Zuckerman's Sensation Seeking Scale. These findings suggest that the binge-purge cycle of a patient with BN is like an addiction (Speranza et al., 2012). Not surprisingly, a high rate of substance abuse is found in persons with BN. It is likely that these correlations are due to a disordered reward system, specifically the dopaminergic system, in the brain (Umberg, Shader, Hsu, & Greenblatt, 2012).

Finally, persons with an eating disorder have a high comorbid presentation of body dysmorphic disorder (BDD). BDD typically manifests in feelings of shame or disgust in one's image, a disordered body image, and disturbing thoughts regarding a particular feature or body part (Kollei, Brunhoeber, Rauh, de Zwaan, & Martin, 2012). These traits are often shared by persons with an eating disorder. In fact, approximately half of patients who present with an eating disorder also meet the criteria for BDD (Dingemans, van Rood, de Groot, & van Furth, 2012). The body image distortions and prevalence of BDD as associated with eating disorders

suggest that the disorder is related to “top down” processing. This type of processing occurs when a person’s experiences and expectations most influence his or her perceptions as opposed to “bottom-up” processing which is influenced by pure sensory input (Epstein, Wiseman, Sunday, Klapper, Alkalay, & Halmi, 2001). Such processing would lead to a disturbance in self-image that is disparate to what is actually seen in a mirror image.

Treatments

Treatment for persons with an eating disorder is often a very difficult process. Consequently, a multimodal approach to treatment is typically suggested, including a team of physicians and nurses, nutrition specialists, and psychological professionals. Each discipline offers different insights into the treatment plan (American Dietetic Association, 2006).

The importance of a diverse treatment team is further beneficial as patients demonstrate individualized preferences. Many patients report the desire to have support from someone close to them while others desire individualized treatment from a specific professional discipline. Still others wish for a more supportive group setting (Prouty, Howard, Protinsky, & Canady, 2002). The group setting tends to render a slightly lower dropout rate, though statistically rates are close enough that it is likely a matter of personal preference (Lothstein, 2012). Also, some patients prefer and can succeed in an outpatient setting while patients at a greater health risk or without adequate social support require an inpatient setting. Neither setting appears to have a universal advantage over the other (Gowers et al., 2007).

Pharmacology

Due to its high mortality rate and the common instance of comorbid disorders, eating disorders are sometimes addressed with pharmacological treatments. Common pharmaceutical treatments for patients with AN include antipsychotics, selective serotonin reuptake inhibitors (SSRIs), and zinc supplements. Patients with BN appear to benefit from SSRIs, antidepressants, and mood stabilizers. SSRIs, mood stabilizers, anti-obesity medications and serotonin norepinephrine reuptake inhibitors (SNRIs) appear to improve symptoms for patients with BED. In these pharmaceutical treatments, improvement appears to occur, however relapse levels are high unless treatment is paired with some type of psychological therapy (Flament, Bissada, & Spettigue, 2011).

Dialectical Behavior Therapy

Dialectical behavior therapy (DBT) was originally created as a multidisciplinary approach to treat clients with borderline personality disorder. The main goals in DBTs are in reducing impulses and curbing self-destructive behaviors (Federici, Wisniewski, & Ben-Porath, 2012). It is believed to reduce suicidal and other self-injurious behaviors, decrease displays of anger, and increase treatment retention. Standard DBT focuses towards four objectives: 1. the decrease of life-threatening behaviors, 2. the reduction of any behavior which interferes with the process of therapy, 3. lessening any behavior which may interfere with the patient's overall quality of life, and 4. promoting the use of positive behavioral skills. The central aspect of DBT is a skills group. In this group, clients meet for two to three hours a week and focus on learning positive ways to deal with difficult emotions and life events. Sessions include activities to

address mindfulness, homework assignments meant to transfer skills to real world situations, and a presentation of new skills (Federici et al., 2012).

Dialectical behavior therapy appears most affective in patients with comorbid disorders as it works to address not only the eating disorder itself but also with any psychiatric disorders that contribute to onset and manifestation (Robinson & Safer, 2012). A 2012 systematic review of thirteen studies on the use of DBT for eating disorders found that overall, DBT treatments were effective in treating both the disordered eating behaviors and the comorbid psychopathology symptoms within the populations (Bankoff, Karpel, Forbes, & Pantalone, 2012). Specific secondary improvements are linked to reduced perfectionism and interpersonal distrust (Klein, Skinner, & Hawley, 2012).

Case studies following both patients with AN and patients with BN indicate that DBT leads to significant progress in both physical and psychological symptoms associated with eating disorders (Salbach-Andrae, Bohnkamp, Pfeiffer, Lehmkuhl, & Miller, 2008). Results of a study addressing BN specifically found that DBT led to decreased eating disorder symptoms as compared to controls. Nearly 27 percent of participants were completely abstinent from binge and purge behaviors at the end of treatment and 61.5 percent no longer met the full criteria for BN (Hill, Craighead, & Safer, 2011). However, this study showed low attrition rates while others have shown high levels of attrition (Klein et al., 2012). Therefore, the generalization of DBT's effectiveness to a widespread population is unclear.

Cognitive Behavioral Therapy

The most commonly used and widely researched treatment model for eating disorders is cognitive behavioral therapy (CBT). Some research regarding the long-term outcomes of

persons receiving treatment for an eating disorder suggests that those who receive CBT have a higher rate of maintained recovery than those who receive other methods of behavior therapy (Fairburn, Norman, Welch, O'Connor, Doll, & Peveler, 1995). Further, patients receiving CBT have been shown to have better long-term outcomes than those receiving medical treatment or nutritional therapy alone (Pike, Walsh, Vitousek, Wilson, & Bauer, 2003).

Cognitive behavioral therapy emphasizes the importance of motivation, acceptance, reassurance, and goal setting for the client. This approach is a collaborative model that works alongside medical, nutritional, and pharmaceutical approaches (Bowers & Anderson, 2007). Cognitive behavioral therapy is traditionally conducted in a therapeutic outpatient setting but can be adapted for inpatient setting for clients whose health does not allow for release as an outpatient (Grave, 2010). The program focuses on psycho-education, realistic weight gain, and an improved cognitive view of the body image. The therapist leads the client through behavioral experiments that increase the patient's ability to deal with anxiety and with the disorder (Bamford & Mountford, 2012). Imagery techniques may also be used in combination with CBT in order to address and change core beliefs regarding the implications of body size (Tatham, 2011). Over time, the client will learn to deal with his or her eating issues and to address symptoms in a healthy way.

More recent theories suggest that many persons suffering from an eating disorder will experience more than one manifestation of the disease over time. Therefore, enhanced cognitive behavioral therapy (CBT-E) was developed as a means of delivering a transdiagnostic approach (Draxler & Hiltunen, 2012). This treatment may be especially useful in the treatment of persons with EDNOS who frequently display a mix of symptoms between AN, BN, and BED (Fursland, Byrne, Watson, La Puma, Allan, & Byrne, 2012). Similar to traditional CBT, CBT-E addresses

the dysfunctional relationship between weight and self worth as well as behaviors, such as restriction, bingeing, and purging associated with the disorder. However, enhanced cognitive behavioral therapy reaches beyond the eating disorder diagnosis to also address comorbid or contributing diagnosis.

Psychodynamic Therapy

While not the most widely used, one method of treatment is psychodynamic therapy (PDT). This treatment is typically combined with one of the behavior therapies, usually CBT, for greatest effectiveness. The therapeutic relationship is central to PDT and focuses on the patient's perception of the therapist and the therapist's actions and reactions towards the patient. Because of a high rate of transference, PDT is a much longer process than many of the other therapies, though it can result in internal cognitive change and consequent healing (Murphy, Russell, & Waller, 2005). Though PDT appears to be a bit more complicated and time intensive than traditional behavior therapies, research shows similar overall outcomes. The timelines of the two therapies are slightly different as CBT typically renders quicker initial patient improvement which then levels off while PDT is more of a slow but steady process (Quiroga, Cryan, & Fontao, 2002). Research indicates that the integration of PDT and behavior therapies is effective in both client retention and treatment and produces effects much quicker than PDT alone (Murphy et al., 2005).

Pharmacology, CBT, DBT, and PDT are all established methods of treatment for persons with an eating disorder. However, eating disorder therapies still present with high rates of treatment dropout or relapse. Resistance to treatment and denial of a problem are common obstacles to treatment, resulting in avoidance of recovery. The primary reason cited for

treatment failure is a lack of internal motivation. Eating disorders are often egosyntonic and the client is therefore not internally motivated to change (Vitousek, Watson, & Wison, 1998). Even patients who complete treatment are at a high risk of relapse. Between 30 (Strober, Freeman, & Morrell, 1997) and 50 percent (Norrington & Sohlberg, 1993) of persons treated for an eating disorder will have at least one relapse and approximately 30 percent will develop a new eating disorder (Strober et al., 1997). While traditional therapies may be beneficial, a significant portion of people with an eating disorder are not healed through treatment. Therefore, a need for new or updated methods of treatment still exists.

Creative Therapies

Patients struggling with an eating disorder often have trouble verbalizing thoughts and emotions associated with the disease. Consequently, creative therapies are often helpful as a means of communication through non-verbal mediums (Brooke, 2008). Some believe that creative therapies, namely drama and art therapy, are ideal because they are, “uniquely able to work within the world of concrete objects and, by doing so, meet the patients in a way which feels genuine and authentic in order to facilitate their emotional growth” (Levens, 1994, p.161). Creative therapies include drama therapy, dance therapy, art therapy, poetry therapy, and music therapy.

Drama Therapy

Psychodrama and drama therapy use action and role playing to subjectively experience situations, educate, and to create new perceptions. Clients can role play a variety of past, future, feared, and hoped for situations in order to create a heightened sense of reality. It can be done in

either an individual or group setting. Interventions include monologues, partner role play, role reversal, and mirroring techniques (Callahan, 1989). Drama therapy is touted as an active and experiential therapy which can encourage emotional expression, directly focus on issues and discomforts associated with the body, and encourage healthy social roles (Young, 1994).

Many clinicians find that through drama therapy or psychodrama, the client is more likely to express the underlying issues which may have triggered onset of the eating disorder. This is very helpful in establishing the direction of therapy. For example, a person with untreated major depressive disorder is treated much differently than someone who has developed an eating disorder as the result of trauma or a major life change (Jennings, 1994). Those with an eating disorder may show fear when first participating in psychodrama because the patient must reveal aspects of his or her private life, cannot hide from attention, and must relinquish control (Callahan, 1989). Therefore, in order to encourage participation in drama therapy, it is crucial that the environment created by the therapist is safe and emotionally secure (Jacobse, 1994). Addressing the fears and situations created through drama therapy can be a major step in the healing process.

Dance Therapy

Dance therapy utilizes the idea that the mind and body are connected. This medium works directly with body movement to create a more positive body image and to change cognition, recognizing a better image of self. It allows for the symbolic expression of feelings, a positive way to relate to others, and for a creative alternative to restriction, bingeing, or purging. Further, clients are encouraged to experience tension and other sensations in the body positively and as a sense of actually feeling (Stark, Aronow, & McGeehan, 1989). Therapists work with

clients through movement and touch to create a better connection between the mind and body (Totenbier, 1994).

Upon entering treatment, many persons with an eating disorder demonstrate very rigid and controlled body posture and movement. It is hypothesized that this reflects the rigidity and control maintained in the life of the patient. Clients also tend to have very shallow breathing, likely in an effort to decrease body sensations. Further, the patients tend to maintain a very small area in which they move in an effort to take up as little space as possible. Through dance therapy, the clients learn to experience and embrace body sensations, to relax movements, and to expand the space in which they are willing to explore, demonstrating a more positive sense of self (Rice, Hardenbergh, & Hornyak, 1989).

Poetry Therapy

Poetry therapy, while not as widely used as the other creative therapies, had been shown to be beneficial by many clinicians. In this process, the clinician will either choose a piece of poetry for the patient to analyze or will assist the client in creating his or her own work. Patients often find a clearer way of describing emotions through the words of others. The more withdrawn client may also choose to write his or her own poetry without clinician assistance. The therapist is then able to use this writing to discover underlying themes which may have contributed to the onset and continuation of the eating disorder. Poetry therapy can be used either in an individual setting or within a group (Woodall & Anderson, 1989).

Art Therapy

One of the most documented and commonly used creative therapies is art therapy. This medium can stand alone or be administered in conjunction with another therapy, such as CBT (Matto, 1997). Art therapy is said to, “Challenge the clients’ defenses without assaulting them” (Morenoff & Sobol, 1989, p.145). It is thought that the images created by clients are a view into their inner perceptions of self and of the world around them. The artwork of a person with an eating disorder will often show conflicting patterns or themes which represent inner turmoil. Both the therapist and the client recognizing and understanding where this turmoil stems from is integral to healing (Rehavia-Hanauer, 2003).

Creating and showing art can be a very scary experience for patients with an eating disorder, however it can serve as a first step in self expression and in creating positive connections with others. The therapeutic process guides clients in creating pictures of their past and present situations as well which helps the therapist gain insight into specifics of the patient’s disorder. Clients may also create images of what they would like their world to look like as a means of creating a goal (Morenoff et al., 1989). In addition to expression, the art created can give the client a sense of pride and accomplishment, leading to increased self-worth (Fleming, 1989). A positive sense of self is established as, through art creation, the client begins to display aspects of themselves which were previously unbearable and to permit their inner and outer selves to be seen (Johnson & Parkinson, 1999).

The use of creative therapies for persons with an eating disorder appears promising. Art, dance, poetry, and drama are nonthreatening mediums with motivational properties. However, these areas are not widely researched. Published documentation consists of case reports or collections of clinician findings. Therefore, success rates, attrition rates, and instance of relapse

are not available. Much more research is needed in order to better understand and support the efficacy of creative therapies for the treatment of persons with an eating disorder.

Music Therapy

Music Therapy and Psychiatric Disorders

The American Music Therapy Association defines music therapy as the, “clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program” (American Music Therapy Association, 2008). It can be used for a wide range of therapeutic purposes including physical rehabilitation, communication, pain management and reduction, stress management, memory improvement, emotional expression, and overall wellness. Music therapy has been widely used to address general mental health as well as many psychological disorders associated with eating disorders including addiction, depression, and anxiety disorders. As many people affected by an eating disorder also present with a comorbid psychological disorder, success in the domain of psychopathology may have implications for persons with an eating disorder.

Music therapy has been shown to be highly effective in the treatment of persons with psychopathology. A 2004 meta-analysis of eleven studies that addressed the use of music therapy for adolescents with psychopathology found that music therapy had significant ($p < .001$) medium to large positive effects on clinical outcomes (Gold, Voracek, & Wigram, 2004). Common music therapy interventions include song singing, song writing, lyric analysis, music performance, and improvisation which can be done either individually or in a group setting (Grocke, Bloch, & Castle, 2009). Some specific areas of psychopathology addressed through

music therapy are anxiety, depression, and addiction (Gadberry, 2011; Maratos, Crawford, & Procter, 2011; Soshensky, 2001). As previously stated, many people who are diagnosed with an eating disorder also suffer from a comorbid psychiatric disorder, including anxiety, depression, and addiction (Hudson et al., 2012). Therefore, music therapy may be therapeutically effective for a person diagnosed with an eating disorder.

Music has effects people neurologically which may be why it has been seen as therapeutically effective in psychiatric populations. On a physiological level, arousal can be either decreased or increased by changes in the tempo, timbre, and rhythmic articulation. Musical rhythm specifically appears most impactful on the brain and body. Gomez and Danuser (2007) found rhythmic articulation, tempo, and rhythmic accents to change the rate of breathing, skin conductance, and heart rate at higher levels than other musical elements.

Arousal also contributes to emotional regulation through music through expectancy and schemas. When listening to music within one's culture, the listener will naturally anticipate the piece to follow certain patterns. Suspense and resolution or a deviation from what is expected will result in a response from the listener (Meyer, 1956). Further, interruption from what is anticipated leads to arousal in the autonomic nervous system (Mandler, (1984). While some stimuli may create a disturbing arousal (such as a sudden, loud noise), a steady progression of increase and decrease in arousal may stimulate the limbic, or reward, system in the brain and therefore be pleasurable to the listener (Berlyne, 1971). Music's ability to invoke a state of arousal can reduce anxiety, increase energy, elevate mood, alleviate tension, and enhance overall feelings of well being for the listener. These positive effects can be healing for persons suffering from mental illness and encourage therapeutic progression (Thaut, 2005).

Music therapy can be therapeutic for persons with a psychiatric disorder on three levels: activity, re-educative, and re-constructive with activity level and re-educative exercises most commonly used (Appendix H). Activity level interventions are primarily surface-level and include exercises such as instrument learning or playing, group singing, movement to music, and relaxation (Crowe, 2007b). They serve to create rapport between the client and therapist or others involved in therapy as well as to increase the client's comfort with music and the therapeutic process. Re-educative exercises encourage a deeper level of interaction or verbal sharing between the client and therapist or other group members. The goal of this level is to increase self-exploration, self-expression, and to better understand the client's habits in interpersonal relationships (Crowe, 2007a). Exercises on this level include lyric analysis, improvisation, and songwriting. Re-constructive exercises are not utilized until the later stages of therapy and are meant to discover and resolve subconscious psychological turmoil (Leite, 2007). These exercises can include improvisation and singing with a focus on discovering suppressed experiences and emotions.

Music can serve as a window into the inner thoughts and emotions of persons suffering from psychiatric disorders. Written lyrics as well as music elements (such as structure, mode, rhythm, dynamics, tempo, melody, and harmony) express larger themes and create emotional templates (re-educative level). Musical templates, however, are not stuck and can be altered by both the client and the music therapist to create hope and plans for change (re-constructive level) (Thompson, 2009). The development and processing of themes through group music therapy can help a person to face his or her internal issues and to develop healthy coping mechanisms. Learning to manage triggers, behaviors, and symptoms can improve the overall quality of life for persons with severe and enduring mental illness (Grocke et al., 2009).

Improvements in motivation and treatment group retention have also been shown in music therapy groups. Dropout rates in traditional therapies are high for mental health populations, especially when there is a comorbid psychiatric disorder present (Olfson et al., 2009). A negative attitude towards treatment and a one dimensional approach to therapy are both cited as common reasons for attrition (Edlund, Wang, Berglund, Katz, Lin, & Kessler, 2002). Music therapy, however, has been shown to decrease dropout rates. In a comparison of a psychoeducation music therapy group versus a non-music psychoeducation group, attendance rates were higher in the music therapy group (Silverman, 2011). The music may serve as motivation to attend and continue the difficult process of therapy for psychiatric groups.

Rhythm appears to have implications in treating persons suffering from anxiety. A 2011 study of 36 healthy individuals experiencing symptoms of state anxiety compared listening to a steady beat at 66 beats per minute to a control of silence (Gadberry, 2011). The subjects who listened to the beat reported significantly lower anxiety following the test than the silence group. This emotional relaxation is likely the effect of the physiological relaxation that music can induce. Thaut (2005) asserts that changes in heart rate, blood pressure, and respiration can be elicited through musical stimuli and that this physiological relaxation naturally results in reduction of anxiety.

In addition to anxiety, research shows that music therapy can be highly effective in treating persons suffering from depression as it reaches physical, emotional, relational, and expressive aspects of treatment (Maratos et al., 2011). In fact, comparison of music therapy, pharmaceutical treatments, psychotherapy, and electroconvulsive therapy found that music therapy was the most effective intervention in improving symptoms of depression after eight weeks of treatment (Castillo-Perez, Gomez-Perez, Velasco, Perez-Camps, & Mayoral, 2010).

Long term effects are also encouraging as a 2011 study comparing bi-weekly music therapy and standard care treatment for 40 weeks found that the music therapy group maintained greater improvement on depression six months after treatment (Erkkila et al., 2011).

Finally, music therapy has been shown to be an effective treatment for persons struggling with an addiction. Music can serve to create an alternative coping mechanism and way of expression which allows the addict to step outside of habitual destructive patterns (Soshensky, 2001). Music therapy further serves to engage clients into therapy in a unique way even before addressing specific therapeutic goals (Treder-Wolff, 1990b). Through music therapy, specific goals can be addressed as psychological and emotional issues are processed. Also, group music therapy specifically can help clients to establish healthy interactions and relationships with others (Treder-Wolff, 1990a). In a clinical trial, even a single music therapy session was shown to facilitate the expression of emotions. Participants even reported that in the session they were able to have emotional experiences without the use of substances (Baker, Gleadhill, & Dingle, 2007).

Drumming appears especially valuable in addiction treatment. Research suggests that drumming promotes theta-wave production and brain-wave synchronization which leads to relaxation. The drumming further creates positive experiences and allows for levels of emotional expression. In a drumming group, clients will create connections through the music with one another, reducing self-centeredness and isolation (Winkelman, 2003).

Music Therapy for Eating Disorders

While no quantitative research has been published regarding the use of music therapy for the treatment of persons with an eating disorder, many clinicians have found it highly effective.

Several case studies and qualitative reports support music therapy's efficacy in treating both symptoms of the disorder and the psychological correlates associated with it. Hilliard (2001) asserts that music therapy works in treating eating disorders on three levels: 1. addressing and changing behavior patterns, 2. transforming cognitive distortions, and 3. discovering the root causes of the disorder. As in music therapy for other psychiatric disorders, therapy will typically begin by increasing rapport and comfort level through activity level exercises (Crowe, 2007b), start to address therapeutic issues at the re-educative level (Crowe, 2007a), and change thought and behavior patterns through re-constructive exercises (Leite, 2007).

In addition to the therapeutic benefits of music therapy, music serves as a motivational tool, especially in the early stages of therapy through activity level exercises. This is particularly important, as it is believed that in traditional therapies, low motivation is directly linked to high attrition rates and poor treatment outcomes but researchers have found that the addition of motivational aspects into treatment improves efficacy (Allen, Fursland, Raykos, Steele, Watson, & Byrne, 2012). It should be noted that while some clients are proficient in music, it is by no means necessary that clients have a background in music in order to participate in and receive benefit from music therapy as most techniques do not require any musical skill (Sloboda, 1994). Therefore, any person who enjoys music can take part in one of the many varieties of music therapy.

Music therapy can take place in individual sessions or in a group setting (Hilliard, 2001). Therapy may first include activity level exercises such as music directed relaxation, movement to music and imagery early in the therapeutic process or at the beginning of sessions. These exercises serve as a means of easing into more difficult areas of the therapeutic process and to strengthen the therapeutic relationship (Justice, 1994). Re-educative or reconstructive exercises

including therapeutic songwriting, singing, drumming, improvisation, and lyric analysis are used to specifically address therapeutic goals. These exercises serve to evoke and work through difficult emotions which are typically then processed verbally, a step which is often the most difficult to reach in traditional therapies (Trondale & Skarderud, 2007).

This progression of therapy from activity level to re-educative and reconstructive exercises is described in a 2011 case study involving “Client S,” a young man with anorexia nervosa who participated in nineteen individual music therapy sessions over the course of one year (Trondalen, 2011). The first ten weeks of therapy focused on increasing Client S’s comfort level with the instruments, the therapist, and the therapeutic setting. He demonstrated pleasure in the melodic percussion instruments, such as xylophone and piano and would play without pause until physically exhausted. However, he typically only played one note at a time and the therapist noted that Client S did not seem to be expressing anything in particular. The next seven sessions involved the re-educative phase of treatment. In this phase, Client S explored new instruments and a wider range of melody and rhythm. As Client S began to note that he could sustain a higher level of concentration while playing, the theme of self-regulation emerged in therapy. Additionally, three therapeutic themes emerged: 1. Creating a healthy body, 2. Realizing the ambiguity of the instruments, and 3. The potential for change. In the final sessions, the reconstructive phase, Client S improvised on the instruments and discussed his feelings freely. He expressed a confidence in himself and established appropriate coping mechanisms for the future. While each client, and therefore each therapeutic process, is different, Client S’s progression demonstrates the fundamental growth from activity level exercises to re-educative and reconstructive exercises that leads to healing (Trondalen, 2011).

The process of verbally addressing emotional issues is often the most difficult aspect of traditional therapies for people with an eating disorder. As seen in other creative therapies, music therapy's greatest power may be that music is nonthreatening to the client and "is an expressive medium and has a quality of expressiveness that words lack ... Feelings, attitudes, and perceptions can be recognized, acknowledged, clarified, and tested through music before exploring them in verbal therapy" (Parente, 1989, p. 326). The non-verbal qualities of music used to address therapeutic issues are most commonly utilized through improvisation. In improvisation, clients are given the option to simply make music or to make music playing personal and meaningful at whatever level feels safe. The therapist uses techniques such as grounding, matching, and mirroring to support and push the clients towards addressing therapeutic goals (Nolan, 1989).

The use of improvisation through drumming is outlined in a Sloboda's 1993 case study report regarding a man (Client B) with an eating disorder. In the early sessions, Client B's drumming was described as agitated and frantic with no rests, structure, or awareness of others. The drumming was representative of the "external bully," a pressure towards perfection from family, culture, and society. Later in therapy, the music therapist utilized re-educative exercises to help Client B to address the "internal bully," negative feelings and pressures from within himself. Client B utilized two drums simultaneously to represent feelings of tension and played without pause until exhaustion ended his playing. The music therapist labeled the final portion of treatment as "challenging the bully," a process using reconstructive techniques which helped Client B move past his turmoil and towards healing. In this final phase, Client B allowed himself to integrate melody and structure into improvisation and became much more self-aware and self-assured. Following treatment, Client B asserted that improvisation helped him to

recognize and validate a wide range of emotions, something he was not able to do before therapy. While in this case, improvisation took place primarily through drumming, it can also be applied with other percussive instruments, melodic percussion instruments (such as piano, xylophone, or marimba), and occasionally stringed instruments (such as guitar) (Robarts, 1994).

Music therapy is individualized, and other techniques, such as songwriting, are often used. Lejonclou and Trondalen (2009) report on the benefits of music writing and movement to music in working with Client S, a young woman hospitalized for serious physical symptoms associated with her eating disorder. In the initial stages of therapy, Client S was very quiet and hesitant to participate beyond listening to music with her therapist. However, she eventually began to write lyrics and keyboard melodies which reflected her sense of internal desperation. As therapy progressed, Client S gained enough self-confidence to perform her pieces for the music group. She also became willing to explore and accept her body through movement to music. After extensive therapeutic work, Client S began writing songs about hope, change, and personal growth. At this point, Client S was able to leave the hospital setting, live on her own, and attend college as a well adjusted woman.

Conclusion

Eating disorders are a prevalent and life threatening set of psychological disorders which are very difficult to effectively treat. They are often accompanied by one or more comorbid disorders diagnosable by the DSM-IV-TR such as depression, anxiety, addiction, and body dysmorphic disorder. Someone with an eating disorder is typically treated by a multidisciplinary team of physicians, nutritionists, and psychologists. Traditional therapies include PDT, DBT,

and CBT, though creative therapies such as art therapy, drama therapy, poetry therapy, and dance therapy have gained popularity.

Music therapy has been successfully shown to produce positive therapeutic outcomes in many psychological disorders including several associated with eating disorders such as depression, anxiety, and addiction. Because of its motivational aspects, non-verbal approach, and non-threatening medium, music therapy is regarded as beneficial for persons with eating disorders by many clinicians. This notion is supported by several case studies and reported qualitative evidence. However, the published research regarding music therapy's effectiveness for treating eating and body image issues is very minimal. Further data is needed to better understand and support music therapy's role in treatment in order to support its clinical use.

CHAPTER III

METHODS AND PROCEDURES

Data collected was primarily descriptive and qualitative in nature. While participants completed both qualitative and quantitative surveys, the sample size was small and there was no control group to serve as comparison. As described in chapter two, very little data outside of clinician case reports exists in regards to therapeutic music's effect on body perception and associated disorders. Therefore, the researcher was most interested in observing any changes in self perception following a music intervention as a means to support or guide future quantitative studies in related areas.

Participants and Setting

Flyers (Appendix H) approved by the Colorado State University Human Subject Committee were distributed at Colorado State University in an effort to recruit between three and seven female students between the ages of 18 and 25 years as participants. Adult and sensitive information was divulged by the participants throughout the therapeutic process, therefore persons under the age of 18 years were not accepted. Women over the age of 25 years were not accepted for two reasons. The first is that disordered eating most commonly manifests in young women and adolescents. As the frontal lobe of the brain (implicated in decision making and emotional regulation) completes development at age 25 years, it is possible that women over the age of 25 years experience both body perception and related therapies differently from younger women. Additionally, women over 25 years were not accepted in order to promote commonalities between participants in the group setting. Women in their late 20s are likely

experiencing different life milestones than women in their early 20s, making a comfortable therapeutic relationship more difficult. Participants were also required to be current enrolled students at Colorado State University. This requirement further served to foster group cohesiveness. The participants' student status also ensured that each individual had access to free and available mental health care through the Colorado State University health network.

Six participants began the study including two women age 19 years, two age 20 years, one age 21 years, and two age 22 years. Five of the six participants reported a being Caucasian and the sixth reported an ethnicity of Middle Eastern. One participant dropped out of the study after one session due to scheduling conflicts. Of the five remaining participants, two attended four sessions, one participant attended three sessions, and two participants attended two sessions. One of the participants who had attended two sessions did not complete the post-test and her data will therefore not be included.

Recruitment information specifically sought young women reporting body image distortion and/or dissatisfaction. None of the participants reported having diagnosed with a psychiatric disorder. One participant reported having attended sessions with a mental health professional in the past though none were currently receiving treatment. Having not previously sought help, participants could not have an official diagnosis but could potentially still experience the symptoms of a psychiatric disorder. As reduction in symptoms, not specific diagnostic criteria, was examined by the investigator, having a diagnosis of an eating disorder or another psychiatric disorder was not required. All participants were fluent in English in order to communicate with the investigator. Prior to recruitment initiation, approval was received from the Colorado State University Human Subjects Committee. Before beginning the intervention, all participants signed an informed consent including the purpose, procedures, benefits, and

potential risks of the research (Appendix A). Additionally, the subjects were notified of their right to withdraw from the study at any time.

Sessions occurred for one hour on five consecutive days. An additional 30 minutes were allotted on the first and last days of treatment in order to allow time for the pre-test and post-test assessment. All interventions took place in the Center for Biomedical Research in Music (CBRM) or in other classrooms located in the University Center for the Arts at Colorado State University. In addition to the researcher, one MT-BC (music therapist board certified) was present at all sessions. Equipment comprised of instruments and materials borrowed from the Colorado State University music therapy department's resource room including one piano, eight medium sized drums (djembes, congas, bongos, hand drums, and frame drums), auxiliary percussion instruments (castanets, shakers, paddle drums, guiro, cabasa, triangle, ocean drum, rain stick, bells, maracas, xylophone, egg shakers, and finger cymbals), and eight chairs. Some interventions include the use of lyric sheets and writing utensils.

Research Methods

Each participant was asked to choose a four digit number to use as a code for anonymous completion of surveys and questionnaires. Comparisons were made between pre-test and post-test data through the Tennessee Self-Concept Scale and separate researcher written questions for both the pre-intervention (Appendix B) and the post-intervention (Appendix C). A paired t-test was employed for the Tennessee Self-Concept Scale in order to evaluate subject differences before and after the intervention. Differences in qualitative data were examined descriptively.

The Tennessee Self-Concept Scale was originally developed in 1964 as a means of measuring identity, self-satisfaction and behavior by physical self, moral and ethical self,

personal self, family self, social self, and self criticism (Vacchiano & Strauss, 1968). This scale can be used with a wide variety of populations and ages and has been used with persons suffering from disordered eating. The Tennessee Self-Concept Scale appears to be used both as means of measuring progress (Mueller, 2011) and as a tool in better understanding the complex psychological disturbances within those with the disease (Johnsson, Smith, & Amner, 2001; Faldt & Johnsson, 2002). This scale is widely recognized and has been used as a means of comparison in developing reliability for the Dieter's Inventory of Eating Temptations (Bunn, Poston, Haddock, Dill, Goodrick, & Foreyt, 2000), the Work Self Concept Scale (Hines, Durham, & Geoghegan, 1991), the Duke Health Profile (Parkerson, Broadhead, & Tse), the Body Cathexis Scale (Balogun, 1986), and the Goldfarb Fear of Fat Scale (Goldfarb, Dykens, & Gerrard, 1985).

Procedures

Before beginning the initial session, all participants were given a handout with contact information on Colorado State University's free mental health clinic and encouraged to seek counseling for any psychological distress. The participants were reminded of the availability of this resource after each session and encouraged to seek help for any further psychological or eating issues. However, no participants reported utilizing any outside resource throughout the intervention. Additionally, each subject was be given a list of local and national resources for further help regarding eating or image issues (Appendix I). The assisting music therapist was available at each session as well.

Each session included both activity level and re-educative music interventions. Activity level interventions were meant to enhance the participants' comfort level with the experience and

to create rapport with the investigator and within the group. These exercises included relaxation, breathing exercises, and instrument playing. Re-educative interventions encouraged personal discovery and becoming attuned with inner emotions, thoughts, and interpersonal responses. Re-educative experiences included group directing, directed improvisation, lyric analysis, and therapeutic songwriting (Appendix H). While an even deeper level of intervention exists in music therapy, given the scope of time and the focus of the group, only activity level and re-educative interventions were utilized in this study.

Each session began with each participant choosing a drum and sitting in a circle. For the first session, the participants were simply asked to explore the sounds of their drum in order to increase her comfort level with making music within the group setting. For the remainder of the week, sessions began with each participant being asked to individually improvise on her drum, expressing how her day was and how she was feeling in that moment. Participants were then given the opportunity to describe what she had played.

The first session of the intervention focused on creating a positive group dynamic through activity level interventions. In the first music exercise, the participants each chose from a variety of auxiliary percussive instruments. The group then created a musical waterfall in which one participant started playing, then another began, and then another until all of the participants were playing simultaneously. The exercise ended how it began with one group member dropping out at a time. In the next exercise, each participant was given the opportunity to choose instruments for the other members and to lead the group in a musical description of her “happy place.” The leader then described her improvisation to the group. In the final exercise, the participants were guided through a deep breathing exercise set to the sounds of the piano.

The second through fifth sessions still included activity level experiences but had a larger focus on re-educative interventions. The integration of re-educative experiences was dependent upon the dynamic and readiness of the group. As the participants naturally opened up with one another on the second day, the researcher felt the group was prepared to move past activity level exercises and center more on re-educative exercises.

One activity level exercise was relaxation to music. In this, the lights were dimmed and the subjects were told to find a comfortable position with their eyes either open or closed. All of the participants chose to lie on the ground with their eyes closed. The researcher played improvised music on the piano while verbally guiding the subjects through tension and release of each body part. Following the exercise, the subjects were given a few moments to relax or meditate in silence before slowly getting up. Relaxation was accompanied by a brief breathing exercise consisting of deep breathing and sustained inhalation and exhalation as the researcher continued to play improvised music on the piano which mimicked a relaxed breathing pattern.

One re-educative intervention utilized was lyric analysis. The researcher provided the group with the song "Paper Bag" by Fiona Apple (Appendix D) to analyze. Lyric analysis began with the researcher giving copies of the lyrics to each subject and then playing and singing the song as participants either sang or followed along with the lyrics. The researcher then encouraged the group to consider which portions of the pieces resonated with them.

In addition to lyric analysis, the researcher utilized improvisation and improvisational group leading to address several themes. First, the participants addressed how they were currently feeling through a group leading exercise. In this intervention, each participant had the opportunity to choose instruments for the rest of the group and to direct everyone in when and how to play. The participant directed for as long or short of duration as she desired. This

improvisation evolved into a discussion led by the researcher of why certain feelings of stress, pressure, fear, or insecurity were present. Next, the participants led an improvisation in which they created a musical picture of themselves using percussion instruments. In a subsequent discussion, the participants were encouraged to describe what was being expressed by the music and to address some of the feelings and issues behind the individuals' self perception. On the following day, each participant utilized instruments to create a musical description of whom and what she wanted to be. A discussion led by the researcher addressed if that ideal picture was rational or possible and if so how to reach it. The idea of being accepting of one's self in the moment was also addressed.

In the final sessions, the researcher guided participants to focus towards healing and on a positive self image through the implementation of therapeutic songwriting, an additional re-educative intervention. With the given goal of embracing a positive sense of self, the subjects rewrote and personalized the lyrics of "Born this Way" by Lady Gaga (Appendix E). The participants were given the opportunity to present their song for the group if desired.

CHAPTER IV

RESULTS

As indicated in chapter three, quantitative data was collected through the administration of the Tennessee Self-Concept Scale (TSCS) (Appendix I) as well as qualitative data through a pre-test (Appendix J) and post-test questionnaire (Appendix K). Data was analyzed through a paired t-test. With data points for four participants, the total calculated t-score was found to be $p = 0.133$. With alpha set at 0.10, the null hypothesis can therefore not be rejected and significance was not reached. While significance was not reached utilizing total score, three out of four participants had improvement in scores between the pre-test and post-test and the fourth participant had no change in score as demonstrated by Figure One.

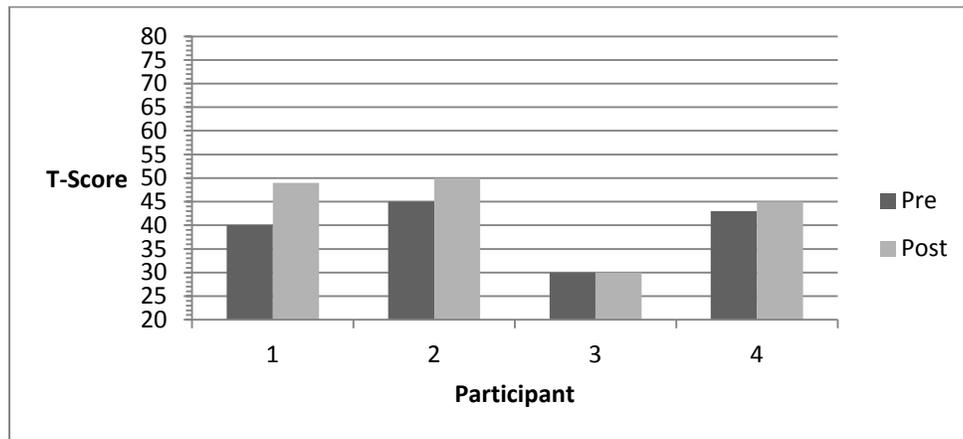


Figure 1: Individual Pre-Test, Post-Test Total Score Differences

While significance was not reached when considering total score, significance was reached at $p = 0.089$ with alpha set at 0.10 in regards to the specific area of physical self-concept. All participants improved in the area of physical self-concept, the category most closely linked to

body image and perception. Changes in physical self-concept score between the pre-test and post-test are demonstrated in Figure Two.

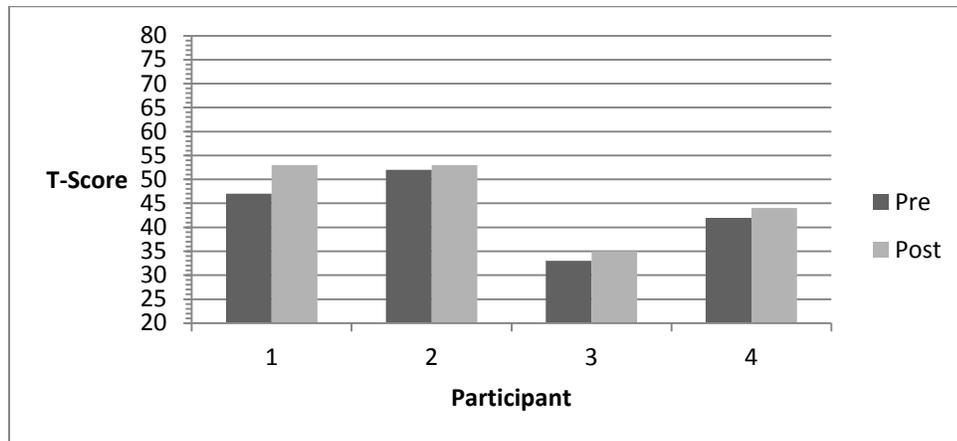


Figure 2: Individual Pre-Test, Post-Test Physical Self-Concept Score Differences

Participant One’s total score improved by nine points with an increase in physical score by six points. Participant Two’s total score increased by five and her physical score by one point. Participant Four’s total and physical scores both rose by two points. Participant Three’s total remained the same while her physical score increased by two. Figures three through six represent the pre-test and post-test data each individual participant. It should be noted that participants One and Two attended four sessions while participant Three attended three sessions and participant Four attended two.

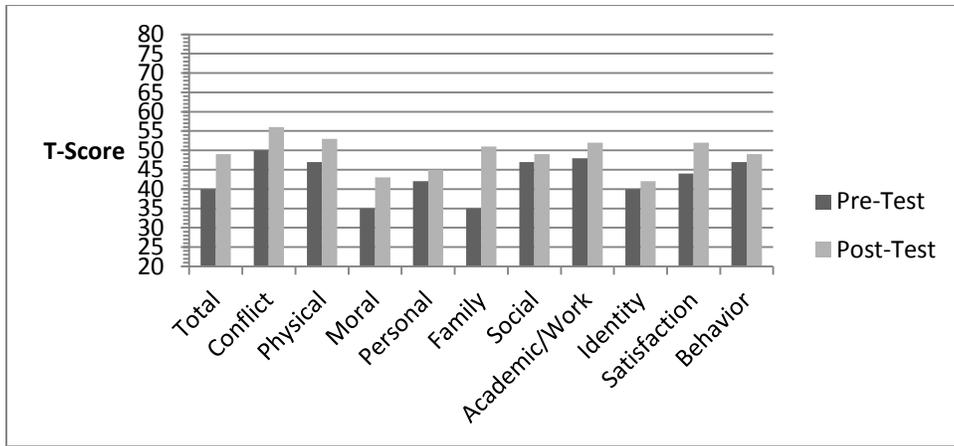


Figure 3: Pre-Test and Post-Test Comparison for Participant One

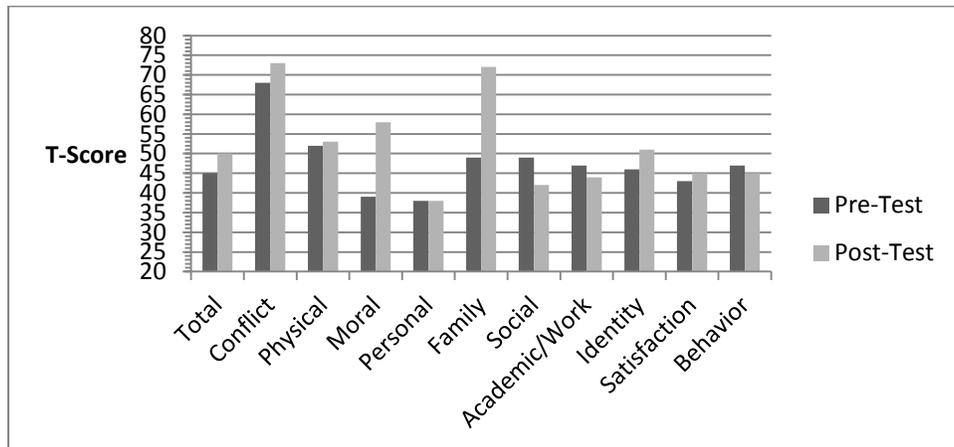


Figure 4: Pre-Test and Post-Test Comparison for Participant Two

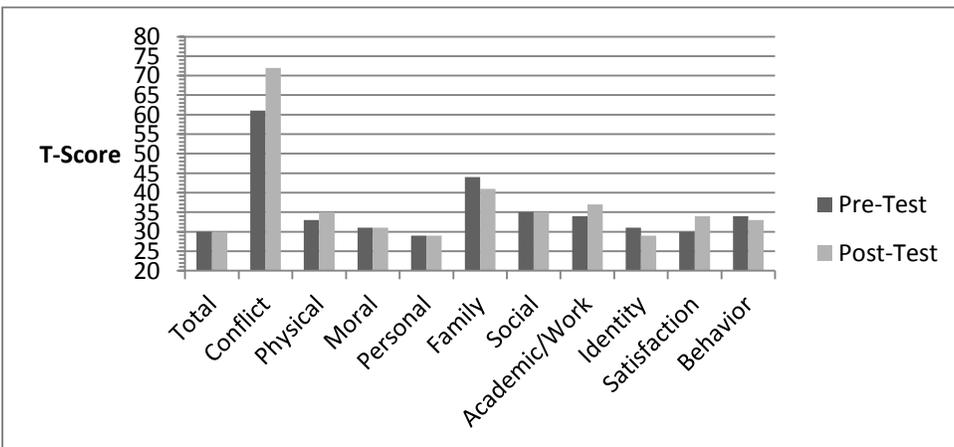


Figure 5: Pre-Test and Post-Test Comparison for Participant Three

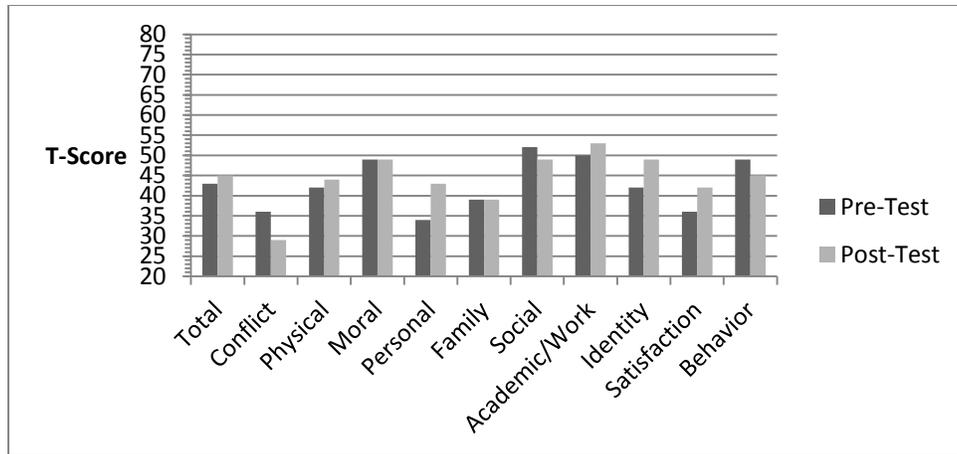


Figure 6: Pre-Test and Post-Test Comparison for Participant Four

Participant Five did not complete the post-intervention data sheet and Participant Six did not complete the study. Therefore, data for Participants Five and Six was not analyzed. However, pre-intervention data regarding Participants Five and Six is included in Figures seven and eight for comparison purposes.

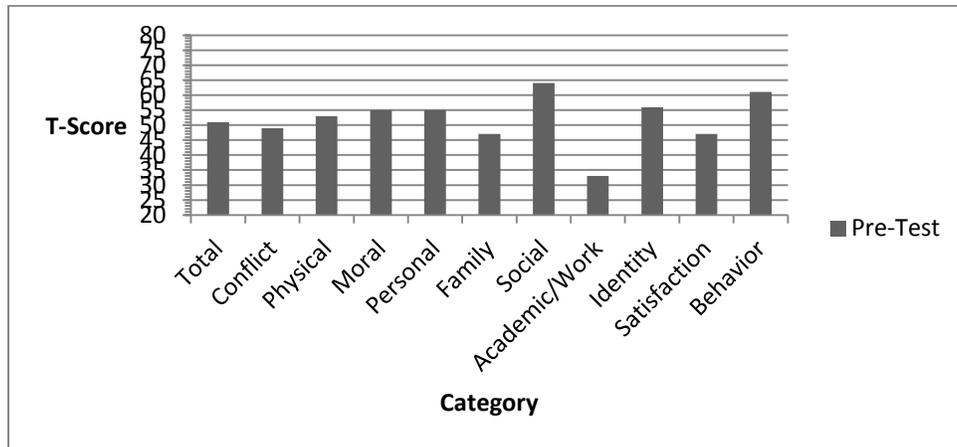


Figure 7: Pre-Test Scores for Participant Five

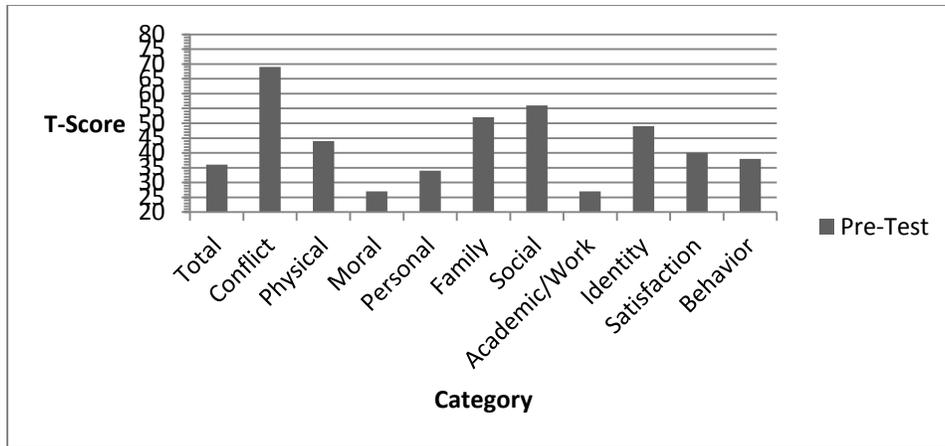


Figure 8: Pre-Test Scores for Participant Six

The participants who took part in four sessions showed a greater overall improvement than those who only attended two or three. Tables nine through eleven show the average scores of the group overall, of the participants who attended four sessions, and of the participants who attended two to three sessions. Table twelve represents the score difference between the pre-test and post-test for the group, the four session sub-group, and the two and three session sub-group.

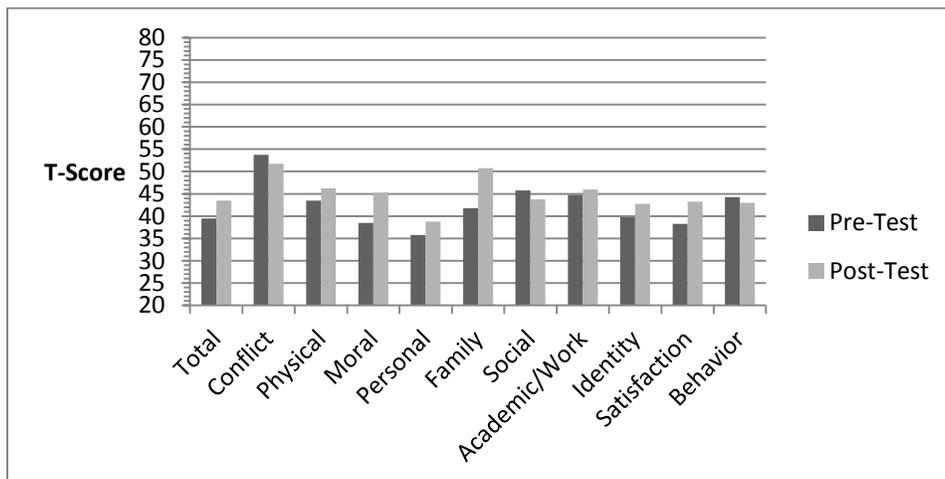


Figure 9: Mean Group Scores

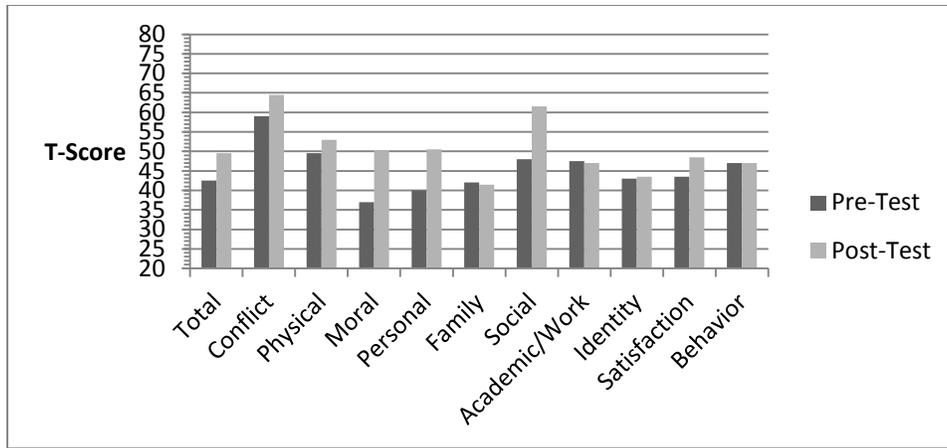


Figure 10: Mean 4-Session Group Scores

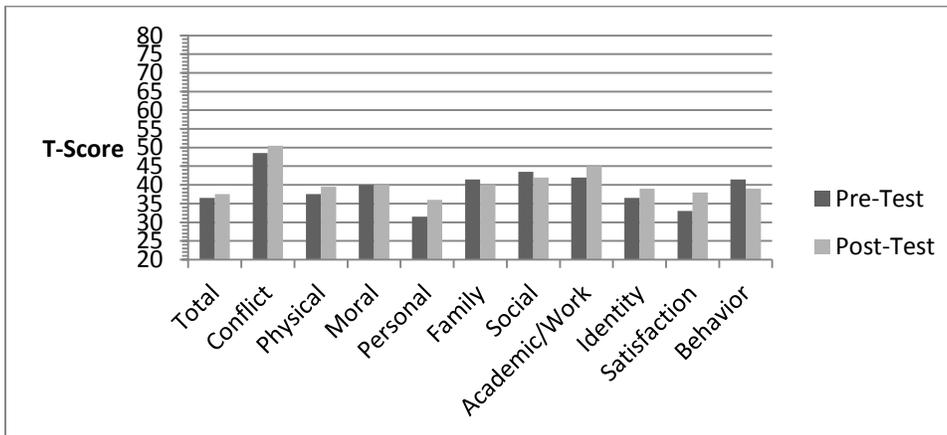


Figure 11: Mean 2 and 3-Session Group Scores

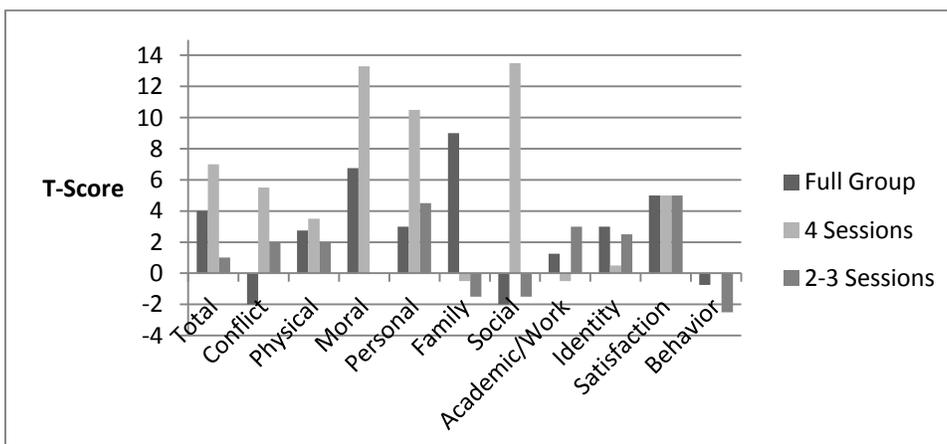


Figure 12: Pre-test/Post-Test Score Differences

Qualitative data collected through pre and post-intervention questionnaires further indicated a positive experience for the participants. When asked if any changes were made to her self-concept throughout the week, Participant Two responded, “to not be so hard on myself ... I feel more calm and happy with less self hatred/anger.” She also noted that the interventions were helpful in, “learning how to be nice to myself.” Participant One described similar changes, indicating the interventions helped her to, “focus more on my positive features as well as my wants and needs ... I think I can definitely carry my new, more conscious effort to focus on my needs and dreams.”

Each participant indicated that she enjoyed playing instruments and creating music. In her description of group improvisation, Participant One wrote that, “It felt like we helped each other discover ourselves like a community.” Another benefits of the music exercises described by participant Four included, “an outlet for negative energy.” She further stated that the intervention helped her to establish, “strategies and techniques for channeling and releasing negative thoughts and perceptions.”

Finally, when asked if the participant had any additional comments, both participants Two and One stated that they were happy to have made the time to participate, Participant Four noted that she would participate in music therapy again, and Participant Three simply stated, “Music therapy is awesome!”

CHAPTER V

DISCUSSION

Participation in a one week therapeutic music group may have contributed to improving the self-concept of participants, at least temporarily. Overall improvements in the participants' total score between pre-test and post-tests suggests that a therapeutic music experience may be beneficial in improving self-concept. However, a two tailed paired t-test with alpha set at $p < 0.10$ did not reach significance. The calculated value of alpha for the total score on the Tennessee Self-Concept Scale was $p = 0.133$ and the null hypothesis was therefore not rejected.

Despite total score not reaching significance, the specific breakdown of score changes creates insight. In the specific domain of physical self-concept, the calculated alpha was $p = 0.089$ which reaches significance. As the focus of this study was to address therapeutic music for body image, it is noteworthy that this area reached significance and that each participant presented improved scores in the category of physical self-concept.

In addition to improvements in physical self-concept, three out of four participants reduced the number of categories in which their scores fell below a normal level; Participant Two reduced her amount from two categories to one, Participant Four started with four categories below normal and ended with only one, and Participant One ended with every category within normal range after starting with four below normal. These results show that therapeutic may be beneficial in normalizing self-concept. Further research is needed to discover if similar results can be found within a mental health population including those with a diagnosis of an eating disorder or a comorbid mental health disorder.

The group dynamic and interaction between participants appeared to be a meaningful aspect of the intervention. In the early activity level exercises, such as the group waterfall improvisation, the participants reflected that playing alone had been initially awkward but became increasingly more comfortable. One participant noted that at first she felt the music was very disorganized but then found that the group was interacting with one another to create music. Later re-educative exercises resulted in meaningful group discussions. For example, in the lyric analysis exercise, discussion began with the participants primarily addressing the issue of interpersonal relationships with others. This included romantic, platonic, and familial relationships. Eventually, as the participants listened and responded to the input of others, the discussion grew to address the positive and negative relationship each participant had with herself. Participants found further connections with one another in finding shared themes through improvisation. While participants initially indicated a sense of feeling alone in her problems, common themes were established within the group of stress, the pressures of life, and of exhaustion. The participants appeared to gain comfort in the therapeutic process after establishing these commonalities. This is supported by Participant One's assertion in the post-intervention questionnaire that, "It felt like we helped each other discover ourselves, like a community."

While positive results were seen in all participants, the number of sessions in which each subject participated may have had an effect on results. In both the total score and specifically in the physical category, a greater improvement is found in the group that attended four sessions than in the overall group average. Similarly, a smaller difference can be seen in the group that attended only two or three sessions than in the group overall. The participants who attended fewer sessions did so due to scheduling conflicts but indicated a desire to attend more sessions.

It is unknown if these participants would have shown greater benefit from attending more sessions. However, despite differences, improvements were found in both the four session group and the two and three session group, indicating that even a very brief therapeutic music intervention may be beneficial in improving self-concept. In the future, research should be conducted in which therapy occurs for various lengths of time in order to better establish an estimation of dosage for therapy and the length of time for which an intervention remains effective.

In addition to the results of the Tennessee Self-Concept Scale, the qualitative information collected through the pre-test and post-test questionnaires provides insight into the effectiveness of the interventions. As discussed in chapter two, one problem with traditional therapies for eating disorders is a high drop-out rate. Although participants did not present with an eating disorder or other mental health diagnosis, all participants in this study noted that they enjoyed taking part in the interventions, indicated being glad to have taken part, and expressed interest in further participation. While this study involved women without a diagnosis, a patient's willingness to participate in treatment within a mental health setting is crucial to her recovery (Fassino et al., 2009); therefore, the enthusiasm demonstrated towards taking part in music therapy by this study's participants indicate that it may be successful in reducing rates of therapeutic attrition for vulnerable populations.

Further, the questionnaire responses provided by the participants indicate that group members felt comfortable and were willing to express thoughts and emotions that are typically hidden. As comfort level, rapport, and self expression are vital in the therapeutic setting, these findings further support the potential effectiveness of music therapy for persons with an eating disorder or comorbid mental health diagnosis.

One challenge of the current study was recruitment of eligible participants. While many potential subjects presented an interest in the study, most were unable to participate due to scheduling conflicts. Of those who did participate, none were able to attend all five sessions as originally intended by the researcher. In the future, it may be beneficial to conduct the interventions for one to two days a week for several consecutive weeks instead of scheduling for five consecutive days. Further, it may be beneficial to recruit from a population outside of a university campus as most students maintain a schedule that varies from day to day and week to week.

While significance was not reached in the total score, improvements seen within the results of this study appear to demonstrate initial efficacy of a therapeutic music group in improving self-image; however several limitations in the study make results inconclusive. While each participant presented improvements in self-concept, the longevity of these improvements is unknown. Because the post-test was conducted immediately after the participants' final session, changes may have been temporary. In the future, research should include follow-up testing in order to better understand the long term implications of participation in a therapeutic music group.

Further, research involving a larger sample size is necessary in creating the connection between therapeutic music and improved self-image. Results of the current study found improvements in the total score of three out of four participants with the fourth participant's score remaining constant. While substantially larger groups are not recommended by the researcher does not recommend substantially larger groups, as the small size appeared to increase the comfort level and sense of cohesiveness among participants, it is suggested that data be

collected from several small groups. This larger sample size will help to reduce the risk that the overall improvement in scores is by chance.

In addition to uncertainties created by a small sample size, the link to music's role in improved self-concept is also unclear. In the post-intervention questionnaire, participants indicated that they enjoyed the musical aspect of the experience, especially playing instruments. However, in future research, the specific efficacy of the music interventions may be better understood through the implementation of a control group that involves participation in non-musical interventions.

Additionally, in order to create a specific link to music therapy's efficacy in improving body image and in decreasing eating disorder symptoms, the researcher suggests recruiting participants the more specific population of persons diagnosed with an eating disorder. Conducting sessions within a mental health facility or eating disorder clinic and requiring a mental health diagnosis of participants may help in establishing a clearer therapeutic protocol in music therapy for persons with an eating disorder.

Finally, music therapy is a broad practice which consists of many different techniques. In the current study, the researcher utilized several types of therapeutic music within sessions including improvisation, group leading, lyric analysis, and therapeutic song writing. Because such a variety of interventions were used, it is unclear which interventions were or were not effective. In order to better understand the efficacy of specific therapeutic music interventions, it is recommended that in the future research be performed in which multiple groups of subjects receiving only one type of intervention each are conducted concurrently and comparisons are made between groups.

Conclusion

While the sample size was very small and significance was not reached in total score on the Tennessee Self-Concept Scale, the results of this brief therapeutic music intervention suggest a positive link between music therapy and the improvement of self-concept in young women with a negative body image. Improvements in total scores and specifically in physical self-concept scores as well as positive experiences and changes expressed through questionnaire responses support the effectiveness of therapeutic music interventions in improving self-concept and body perception.

Participants in this study demonstrated improvements in physical self-concept and gained greater normalization in overall scores. The developments reported in the healthy participants of this study provide a basis for further research within a mental health population. In the future, it is important that researchers consider diagnostic criteria, a larger sample size, a control group, and examination of different intervention lengths. Finally, this study along with more specified research may provide insight as to how music therapy can be used in therapy for persons diagnosed with an eating disorder.

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APPENDIX A
CONSENT TO PARTICIPATE

APPENDIX A

Consent to Participate in a Research Study **Colorado State University**

TITLE OF STUDY: *Therapeutic Music Experiences for College-Aged Women with Negative Body Perception*

PRINCIPAL INVESTIGATOR: Dr. A. Blythe Lagasse, MT-BC

Department of Music, Theatre, and Dance

blythe.lagasse@colostate.edu, 970-491-4042

CO-INVESTIGATOR: Bailey Hinz

Department of Music, Theatre, and Dance,

bihinz@gmail.com, 630-392-1404

CO-INVESTIGATOR: Lauren Sletta, MT-BC

Department of Music, Theatre, and Dance

Lauren.sletta@colostate.edu, 970-491-7465

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? This study is looking for a group of young women between the ages of 18 and 25 years who regularly experience a negative self-image. You may or may not have attempted to change your appearance through control of food.

WHO IS DOING THE STUDY? This study will be conducted by a Master's student in the Music, Theatre, and Dance Department studying music therapy under the supervision of her advisors Dr. William B. Davis, PhD, MT-BC, and Dr. A. Blythe LaGasse, PhD, MT-BC. Bailey Hinz and Lauren Sletta, MT-BC will conduct sessions. Bailey is a music therapy student at CSU and Lauren is a certified music therapist who has experience working at local agencies for mental health and wellness. Pre and post-test data will be collected through anonymous testing proctored by Bailey Hinz.

WHAT IS THE PURPOSE OF THIS STUDY? The purpose of this study is to find if a brief music therapy intervention has an effect on improving body image.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? This study will take place in the CBRM within the University Center of the Arts. Each meeting will last approximately one hour with an additional half hour on the first and last days for the purpose of testing. The group will meet once daily for five consecutive days. The total time commitment will be about six hours.

WHAT WILL I BE ASKED TO DO? You will take part in a variety of therapeutic music experiences. You have the option to not take part in any number of the exercises. Interventions will include:

- Relaxation to music: The investigator will guide you through a progressive relaxation exercise involving tension and release or imagery.
- Movement to music: You will explore the space around you based on your comfort level. The investigator will ask you to reach, stretch, and move in several directions.
- Breathing exercises: The investigator will lead you through relaxed inhalation and exhalation with a focus on deep breathing.
- Music improvisation: You will play a drum or other percussive instrument in any way you choose. A theme will be given by the investigator for each improvisation. You may choose to discuss the theme with the group or not.
- Group leading/following: You will take turns leading the group in playing. You will choose which instrument each person plays, the elements of the music (speed, volume, and style), and how long to play. The investigator will provide a theme for each group leading and following exercise. You may choose to discuss the theme or not with the group.
- Lyric analysis: You may choose to bring in songs that are meaningful to you. The investigator will also provide songs. The lyrics of the songs will be read and you may discuss any lyrics or themes that are meaningful.
- Therapeutic songwriting: The investigator will provide the music to a popular song. Some of the words of the song will be cut out. You will work as a group with the other participants to fill in the blank words with your own in order to write a new song.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? We welcome women with poor body image to the study; however, this is not an intensive treatment setting that would be appropriate for persons with serious eating disorders or mental health needs. If your weight is dangerously low or you have suicidal thoughts you should immediately seek professional help and not volunteer for this study. In addition, if you do not enjoy music you should not volunteer for this study.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

- This study may bring hidden or avoided emotional or psychological disturbances or discomforts to the surface.
- It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

WILL I BENEFIT FROM TAKING PART IN THIS STUDY?

- There is no known benefit for participating in this study.

DO I HAVE TO TAKE PART IN THE STUDY? Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

WHAT WILL IT COST ME TO PARTICIPATE? There is no cost to participate in this study.

WHO WILL SEE THE INFORMATION THAT I GIVE?

We will keep private all research records that identify you, to the extent allowed by law.

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. For example, your name will be kept separate from your research records and these two things will be stored in different places under lock and key.

You should know, however, that there are some circumstances in which we may have to show your information to other people. The law requires us to tell a professional and to report it through Colorado State University's Tell Someone network if you pose a danger to yourself or to someone else.

CAN MY TAKING PART IN THE STUDY END EARLY? If you are found to be a danger to yourself or others you may be removed from the study. Additionally, if you are unable to attend more than one session your data may be excluded from the study.

WILL I RECEIVE ANY COMPENSATION FOR TAKING PART IN THIS STUDY? You will not receive compensation for taking part in this study.

WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH? The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

WHAT IF I HAVE QUESTIONS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the primary investigator, Dr. Blythe Lagasse at blythe.lagasse@colostate.edu or 970-491-4042 or the co-principal investigator Bailey Hinz at 630-392-1404 or bihinz@gmail.com. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator at 970-491-1655. We will give you a copy of this consent form to take with you.

This consent form was approved by the CSU Institutional Review Board for the protection of human subjects in research on 1 – 23 – 2013.

WHAT ELSE DO I NEED TO KNOW?

Data collection will occur at the beginning and end of the week. You will be identified only by a number and the researcher will be blind to your identity for the pre-test and post-test. You will be asked to answer a brief series of both qualitative and quantitative questions.

Your signature acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document containing 3 pages.

Signature of person agreeing to take part in the study _____ Date _____

Printed name of person agreeing to take part in the study _____

Name of person providing information to participant

Date

Signature of Research Staff

APPENDIX B

PRE-INTERVENTION QUESTIONNAIRE

APPENDIX B
PRE-INTERVENTION QUESTIONNAIRE

ID Number:

1. Have you ever been diagnosed with an eating disorder? If so, please describe your diagnosis.

2. Have you ever been diagnosed with any other psychiatric disorder? If so, please describe your diagnosis.

3. What is the first age at which you remember being dissatisfied with your body?

4. Do you ever change your eating habits based on how you feel about the appearance of your body? If so, please describe.

5. Have you ever been diagnosed with any psychiatric disorder and/or received mental health services? If so, please describe.

APPENDIX C
POST-INTERVENTION QUESTIONNAIRE

APPENDIX C

POST-INTEVENTION QUESTIONNAIRE

ID Number:

1. Do you feel as though the music interventions had an effect on your self-image?
2. What was your favorite aspect of the music interventions?
3. Were there any aspects that you did not enjoy? If so, please describe.
4. Do you feel as though changes, if any, made in your self-concept over the past week will carry over into your life? If so, please describe.
5. Did you utilize the Colorado State University mental health services or any other mental health resources throughout the last week? If so, please describe.
6. If you have any additional comments, please leave them here.

APPENDIX D
LYRICS “PAPER BAG”

APPENDIX D
LYRICS "PAPER BAG"

"Paper Bag" by Fiona Apple

I was staring at the sky, just looking for a star
To pray on, or wish on, or something like that
I was having a sweet fix of a daydream of a boy
Whose reality I knew, was a hopeless to be had
But then the dove of hope began its downward slope
And I believed for a moment that my chances
Were approaching to be grabbed
But as it came down near, so did a weary tear
I thought it was a bird, but it was just a paper bag

Hunger hurts, and I want him so bad, oh it kills
'Cause I know I'm a mess he don't wanna clean up
I got to fold 'cause these hands are too shaky to hold
Hunger hurts, but starving works, when it costs too much to love

And I went crazy again today, looking for a strand to climb
Looking for a little hope
Baby said he couldn't stay, wouldn't put his lips to mine,
And a fail to kiss is a fail to cope

I said, 'Honey, I don't feel so good, don't feel justified

Come on put a little love here in my void,' he said

'It's all in your head,' and I said, 'So's everything'

But he didn't get it I thought he was a man

But he was just a little boy

Hunger hurts, and I want him so bad, oh it kills

'Cause I know I'm a mess he don't wanna clean up

I got to fold 'cause these hands are too shaky to hold

Hunger hurts, but starving works, when it costs too much to love

Hunger hurts, and I want him so bad, oh it kills

'Cause I know I'm a mess he don't wanna clean up

I got to fold 'cause these hands are too shaky to hold

Hunger hurts, but starving works, when it costs too much to love

APPENDIX E

SONG STRUCTURE “BORN THIS WAY”

APPENDIX E

SONG STRUCTURE "BORN THIS WAY"

Adapted From: "Born This Way" by Lady Gaga

_____ told me when I was young,

We are all born superstars.

She _____ and _____

In the _____.

"There's nothin' wrong with lovin' who you are"

She said, "'cause He made you perfect, babe"

"So hold your head up girl and you'll go far,

Listen to me when I say"

Chorus:

I'm beautiful in my way

'Cause God makes no mistakes

I'm on the right track baby

I was born this way

Don't hide yourself in regret

Just love yourself and you're set

I'm on the right track baby

I was born this way

Give yourself _____

And love your _____

_____, rejoice your _____

In the _____ of the insecure

I must be myself, respect my _____

A different _____ is not a sin

Believe _____ (hey hey hey)

I love my life I love _____ and

Repeat chorus + post-chorus

APPENDIX F
DESCRIPTION OF THERAPEUTIC LEVELS

APPENDIX F

DESCRIPTION OF THERAPEUTIC LEVELS

Intervention	Description	Purpose
Relaxation	Subjects lie on the floor with eyes open or closed. The researcher plays improvised music while verbally guiding the subjects through tension and release of each body part.	Enhance comfort and body awareness.
Movement to Music	Subjects explore increasing levels of free movement and dance within an increasing amount of space with or without manipulatives (i.e., scarves).	Improve comfort and body awareness.
Breathing	Deep breathing and sustained inhalation and exhalation as the researcher plays improvised music on the piano which mimics relaxed inhalation and exhalation.	Increase comfort and body awareness.

Activity Level Interventions: Intended to enhance the participants' comfort level with the experience and to create rapport with the investigator and within the group. Utilized at the start of each session and the primary focus of sessions one through three.

Intervention	Description	Purpose
Improvisation	Free instrument playing based on a given theme done either individually or as a group.	Explore therapeutic themes and improve group dynamic.
Group Leading	Subject choose instruments for the rest of the group and direct everyone in when and how to play.	Explore therapeutic themes, increase self esteem, and realize interpersonal responses.
Lyric Analysis	Participants consider self and researcher selected pieces and the portions which resonate personally. The group discusses these areas.	Increase group discussion, explore therapeutic themes, and express personal interpretation of the world and self.
Therapeutic Songwriting	Subjects rewrite lyrics to a known song to portray a meaningful and/or positive message.	Promote a healthy view of self and increase self expression.

Re-educative Interventions: Encourage personal discovery and becoming attuned with inner emotions, thoughts, and interpersonal responses. Integrated into each session and the primary focus of session four and five.

APPENDIX G
RESOURCES FOR FURTHER HELP

APPENDIX G

RESOURCES FOR FURTHER HELP

- Colorado State University Mental Health Services
 - <http://www.health.colostate.edu>
 - <http://www.health.colostate.edu>
- Online Support Group
 - Supportgroups.com
- Over-Eaters Anonymous
 - <http://www.oa.org/>
 - <http://www.oa.org/membersgroups/find-a-meeting/>
- Eating Disorders Anonymous
 - <http://www.eatingdisordersanonymous.org/>
 - <http://www.eatingdisordersanonymous.org/meetings.html#CO>
- Synapse Counseling
 - <http://synapsecounseling.com/>
 - 970-692-4253
 - admin@synapsecounseling.com
- Larimer County Mental Health
 - <http://touchstonehealthpartners.org/2012/04/larimer-center-for-mental-health-becomes-touchstone-health-partners/>
 - 970-494-4300
- La Luna Center of Fort Collins
 - <http://www.lalunacenter.com/>
 - 970-282-8282

APPENDIX H
RECRUITMENT FLYER

Volunteers Needed for Study: Therapeutic Music for Negative Body Perception

Who: Female Colorado State University students between the ages of 18 and 25 years experiencing negative body perception.

What: Participate in one week of group music interventions for a total time of six hours. No music experience is necessary.

Music exercises will include:

- relaxation
- movement
- drumming
- instrument playing
- song analysis and songwriting.

Where: Colorado State University, University Center for the Arts

Interested? For more information, please contact student researcher Bailey Hinz at bihinz@gmail.com or supervising researcher Blythe LaGasse at blagasse@colostate.edu

APPENDIX I
RAW DATA: TENNESSEE SELF-CONCEPT SCALE

APPENDIX I

RAW DATA: TENNESSEE SELF-CONCEPT SCALE

Participant One

Category	Pre-Test	Post-Test
Total	40	49
Conflict	50	56
Physical	47	53
Moral	35	43
Personal	42	45
Family	35	51
Social	47	49
Academic/Work	48	52
Identity	40	42
Satisfaction	44	52
Behavior	47	49

Participant Two

Category	Pre-Test	Post-Test
Total	45	50
Conflict	68	73
Physical	52	53
Moral	39	58
Personal	38	38
Family	49	72
Social	49	42
Academic/Work	47	44
Identity	46	51
Satisfaction	43	45
Behavior	47	45

Participant Three

Category	Pre-Test	Post-Test
Total	30	30
Conflict	61	72
Physical	33	35
Moral	31	31

Personal	29	29
Family	44	41
Social	35	35
Academic/Work	34	37
Identity	31	29
Satisfaction	30	34
Behavior	34	33

Participant Four

Category	Pre-Test	Post-Test
Total	43	45
Conflict	36	29
Physical	42	44
Moral	49	49
Personal	34	43
Family	39	39
Social	52	49
Academic/Work	50	53
Identity	42	49
Satisfaction	36	42
Behavior	49	45

Participant Five

Category	Pre-Test
Total	51
Conflict	49
Physical	53
Moral	55
Personal	55
Family	47
Social	64
Academic/Work	33
Identity	56
Satisfaction	47
Behavior	61

Participant Six

Category	Pre-Test
Total	36

Conflict	69
Physical	44
Moral	27
Personal	34
Family	52
Social	56
Academic/Work	27
Identity	49
Satisfaction	40
Behavior	38

APPENDIX J

PRE-INTERVENTION QUESTIONNAIRE RESULTS

APPENDIX J

PRE-INTERVENTION QUESTIONNAIRE RESULTS

Participant One

1. Have you ever been diagnosed with an eating disorder? If so, please describe your diagnosis.
 - No, I have not.
2. Have you ever been diagnosed with any other psychiatric disorder? If so, please describe your diagnosis.
 - No, I have not.
3. What is the first age at which you remember being dissatisfied with your body?
 - I noticed weight-gain and became dissatisfied with my body when I was eight years old.
4. Do you ever change your eating habits based on how you feel about the appearance of your body? If so, please describe.
 - Yes, I have tried to cut out carbs and sugar but have deviated a lot. I have also attempted the Paleo diet.
5. Have you ever been diagnosed with any psychiatric disorder and/or received mental health services? If so, please describe.
 - No, I have not.

Participant Two

1. Have you ever been diagnosed with an eating disorder? If so, please describe your diagnosis.
 - No
2. Have you ever been diagnosed with any other psychiatric disorder? If so, please describe your diagnosis.
 - No
3. What is the first age at which you remember being dissatisfied with your body?
 - 17
4. Do you ever change your eating habits based on how you feel about the appearance of your body? If so, please describe.
 - No
5. Have you ever been diagnosed with any psychiatric disorder and/or received mental health services? If so, please describe.
 - No

Participant Three

1. Have you ever been diagnosed with an eating disorder? If so, please describe your diagnosis.
 - No
2. Have you ever been diagnosed with any other psychiatric disorder? If so, please describe your diagnosis.
 - No
3. What is the first age at which you remember being dissatisfied with your body?
 - 10
4. Do you ever change your eating habits based on how you feel about the appearance of your body? If so, please describe.
 - Yes, sometimes I guilt myself for eating certain foods (dessert, etc)
5. Have you ever been diagnosed with any psychiatric disorder and/or received mental health services? If so, please describe.
 - Yes, I went to a few counseling sessions last year because I was having difficulty adjusting to college.

Participant Four

1. Have you ever been diagnosed with an eating disorder? If so, please describe your diagnosis.
 - No
2. Have you ever been diagnosed with any other psychiatric disorder? If so, please describe your diagnosis.
 - No
3. What is the first age at which you remember being dissatisfied with your body?
 - I first remember being dissatisfied with my body when I was about eight years old. However, when my body image issues started to affect me, I was around 12.
4. Do you ever change your eating habits based on how you feel about the appearance of your body? If so, please describe.
 - Yes, when I feel particularly dissatisfied with my body, I will sometimes do vegetable cleanses or replace one meal/day with a liquid meal.
5. Have you ever been diagnosed with any psychiatric disorder and/or received mental health services? If so, please describe.
 - No

Participant Five

1. Have you ever been diagnosed with an eating disorder? If so, please describe your diagnosis.
 - No
2. Have you ever been diagnosed with any other psychiatric disorder? If so, please describe your diagnosis.
 - No
3. What is the first age at which you remember being dissatisfied with your body?
 - 17
4. Do you ever change your eating habits based on how you feel about the appearance of your body? If so, please describe.
 - Yes: I eat less or I eat nothing at all or zero caloric foods.
5. Have you ever been diagnosed with any psychiatric disorder and/or received mental health services? If so, please describe.
 - No

Participant Six

1. Have you ever been diagnosed with an eating disorder? If so, please describe your diagnosis.
 - No
2. Have you ever been diagnosed with any other psychiatric disorder? If so, please describe your diagnosis.
 - No
3. What is the first age at which you remember being dissatisfied with your body?
 - 12
4. Do you ever change your eating habits based on how you feel about the appearance of your body? If so, please describe.
 - Yes, eating less, or smaller portions.
5. Have you ever been diagnosed with any psychiatric disorder and/or received mental health services? If so, please describe.
 - Yes - depression

APPENDIX K
POST-INTERVENTION QUESTIONNAIRE RESULTS

APPENDIX K

POST-INTERVENTION QUESTIONNAIRE RESULTS

Participant One

1. Do you feel as though the music interventions had an effect on your self-image?
 - Yes, they helped me stop and think about myself and focus more on my positive features as well as my wants and needs (I try to please others and got to think about myself more).
2. What was your favorite aspect of the music interventions?
 - I really enjoyed the group improvisations. It was fun to lead people to play something that represents you. It felt like we helped each other discover ourselves like a community.
3. Were there any aspects that you did not enjoy? If so, please describe.
 - I was sad when each session ended. This was a great experience!
4. Do you feel as though changes, if any, made in your self-concept over the past week will carry over into your life? If so, please describe.
 - I think I can definitely carry my new, more conscious effort to focus on my needs and dreams to find what I love to do, and once I discover that, I can help others and make the world a better place.
5. Did you utilize the Colorado State University mental health services or any other mental health resources throughout the last week? If so, please describe.
 - No, I did not.
6. If you have any additional comments, please leave them here.

- I loved these sessions and am so glad to now understand what music therapy is. I really believe music can help people a lot, and I love the group sessions. Thank you!

Participant Two

1. Do you feel as though the music interventions had an effect on your self-image?
 - The discussions of others and myself had a positive effect on my self-image.
2. What was your favorite aspect of the music interventions?
 - Playing instruments that are different. I like music and sounds!
3. Were there any aspects that you did not enjoy? If so, please describe.
 - Songwriting was hard for me to fit words and thoughts with the beat. Also hard to remember the beat. If all lyrics were presented at the same time, would be able to keep the beat in my head.
4. Do you feel as though changes, if any, made in your self-concept over the past week will carry over into your life? If so, please describe.
 - To not be so hard on myself. That has started this week and I feel more calm and happy with less self hatred/anger.
5. Did you utilize the Colorado State University mental health services or any other mental health resources throughout the last week? If so, please describe.
 - No
6. If you have any additional comments, please leave them here.
 - These sessions were very therapeutic and calming. I'm glad I made time for this. This was helpful for me and learning how to be nice to myself.

Participant Three

1. Do you feel as though the music interventions had an effect on your self-image?
 - Yes and no – I think the music interventions definitely helped but I also feel like I have a lot more work to do.
2. What was your favorite aspect of the music interventions?
 - Drums
3. Were there any aspects that you did not enjoy? If so, please describe.
 - NA
4. Do you feel as though changes, if any, made in your self-concept over the past week will carry over into your life? If so, please describe.
 - I can carry some of the concepts. For example, accepting who I am in the moment.
5. Did you utilize the Colorado State University mental health services or any other mental health resources throughout the last week? If so, please describe.
 - Music therapy is awesome!
6. If you have any additional comments, please leave them here.

Participant Four

1. Do you feel as though the music interventions had an effect on your self-image?
 - I felt that it was an outlet for negative energy; a place to channel negative thought.
By getting those negative thoughts and perceptions out, it helped me to not dwell on my insecurities.
2. What was your favorite aspect of the music interventions?
 - I liked describing ourselves with the instruments.
3. Were there any aspects that you did not enjoy? If so, please describe.
 - The individual aspects were difficult but that's not to say that I didn't enjoy them.
4. Do you feel as though changes, if any, made in your self-concept over the past week will carry over into your life? If so, please describe.
 - I feel that I learned some strategies and techniques for channeling and releasing negative thoughts and perceptions.
5. Did you utilize the Colorado State University mental health services or any other mental health resources throughout the last week? If so, please describe.
 - No
6. If you have any additional comments, please leave them here.
 - Thanks for doing this; would be willing to participate again. I felt very comfortable answering [the researcher's] questions regardless of the difficult nature of the conversation.

Participant Five

1. Do you feel as though the music interventions had an effect on your self-image?
 - It definitely brought up some issues and reinforced the fact that music makes me feel better.
2. What was your favorite aspect of the music interventions?
 - Expressing myself like I rarely have an opportunity to.
3. Were there any aspects that you did not enjoy? If so, please describe.
 - Talking about the really emotional issues because I feel like a burden and that I'm asking people to feel bad for me, which I don't want to do.
4. Do you feel as though changes, if any, made in your self-concept over the past week will carry over into your life? If so, please describe.
 - I will try to reinforce positive thoughts about myself on a regular basis.
5. Did you utilize the Colorado State University mental health services or any other mental health resources throughout the last week? If so, please describe.
 - No
6. If you have any additional comments, please leave them here.
 - Thank you for this opportunity! I believe it will be a foundational experience in improving my self-image.