The Effect of Mindfulness-Based Music Listening on the Anxiety Symptoms and Awareness of Older Adults in a Senior Living Facility

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THE EFFECT OF MINDFULNESS-BASED MUSIC LISTENING
ON THE ANXIETY SYMPTOMS AND AWARENESS
OF OLDER ADULTS IN A SENIOR LIVING FACILITY

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To Sam:

Stick with me
You’re my best friend
All of my life
You’ve always been
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ABSTRACT

Mindfulness techniques have been used in the field of psychology to decrease anxiety and depressive symptoms in clients since the late 1970s, and previous research has reported the effectiveness of these interventions (Khoury et al., 2013). However, the addition of music to mindfulness techniques is only beginning to be experimentally tested in the field of music therapy. This study attempted to determine if a live music-accompanied mindful body scan would decrease the anxiety symptoms and increase the mindful awareness of older adults residing in three different assisted living facilities in Tallahassee, Florida. Twenty older adults participated in this study, of which ten received the live music-accompanied body scan intervention twice over a period of one week and ten were in the wait-list control group. Of the twenty older adults, eighteen were female and two were male. The Beck Anxiety Inventory (BAI) and the Mindful Attention Awareness Scale (MAAS) were given as pre- and post-tests to both groups. Both the experimental and control groups’ scores significantly decreased on the BAI, $W = 100, z = 2.36, p = .018$, but there was no significant difference between the groups, $U = 40.5, z = 0.68, p > 0.49$. A comparison of the experimental condition participants’ scores on the BAI found a significant difference from pre-test to post-test, $r_s = 0.72, t = 2.95, p < 0.02$. Scores on the MAAS for both groups showed no significant difference from pre- to post-test, $U = 58, z = -0.57, p > 0.57$. The significant decrease in scores on the BAI for both groups does not implicitly suggest the use of mindfulness-based music listening. It does indicate that participation was a factor in decreasing anxiety for the experimental group, and that taking the test itself was a factor for the control group. Further research should be conducted with larger groups to determine the efficacy of these techniques over a longer treatment period, and perhaps mindfulness techniques could be taught for long-term self-management of anxiety, as well.
CHAPTER 1

INTRODUCTION

Mindfulness-based therapies have been shown through previous research to be effective in reducing anxiety, depression, and stress (Khoury et al., 2013). Music therapy interventions have also been shown to have effect sizes up to 2.34 for patients experiencing anxiety (Standley, 1986). This current study aims to determine if the combination of music and mindfulness in a mindfulness-based music therapy intervention could be effective in reducing the reported anxiety and increasing mindful awareness of older adults residing in a senior or assisted living facility. Older adults who reside in assisted living facilities tend to have a higher risk of experiencing psychological stressors, such as anxiety, than those who are non-institutionalized (Polenick & Flora, 2011). While a variety of mindfulness techniques are utilized in the Mindfulness-Based Stress Reduction program created by Jon Kabat-Zinn, the body scan is a more accessible intervention, especially for persons who are not acquainted with this type of therapy. A fifteen-minute live, music-accompanied mindful body scan was presented to the mindfulness condition group while the wait-list control group received no intervention. Pre- and post-tests were administered to measure perceived anxiety and mindful awareness for all participants.

Review of Literature

Mindfulness techniques are based in the Buddhist tradition, have been used for thousands of years, and are most influentially outlined in the early text Satipatthana Sutta (“The Foundations of Mindfulness”) (Sujato, 2012). Mindfulness is a “way of learning to pay wise attention to whatever is happening in your life,” and the practice of mindfulness aims to “[cultivate] clarity, insight, and understanding.” (Center for Mindfulness in Medicine, Health Care, and Society, 2013). The first introduction of mindfulness and meditation into mainstream
medicine was with the development of the Mindfulness-Based Stress Reduction (MBSR) program by Jon Kabat-Zinn in 1979, which has been utilized and taught at the University of Massachusetts for over three decades (Center for Mindfulness in Medicine, Health Care, and Society, 2013). The MBSR program, which includes activities ranging from seated meditation to yoga, is typically an eight-week program in which participants are asked to “draw on their inner resources and natural capacity to actively engage in caring for themselves and [find] greater balance, ease, and peace of mind,” (Center for Mindfulness in Medicine, Health Care, and Society, 2013). The use of mindfulness in cognitive therapy is one of many techniques included in the third-wave of behavioral psychology (Kahl, Winter, & Schweiger, 2012), and Mindfulness-Based Cognitive Therapy was first developed by Philip Barnard and John Teasdale (1991) as a combination of cognitive therapy and the Mindfulness-Based Stress Reduction program.

Mindfulness

According to Keng, Smoski, & Robbins (2011), “mindfulness is the miracle by which we master and restore ourselves.” Mindfulness has long been regarded as an antidote for psychological stressors, such as anxiety and worry. Although the integration of mindfulness into Western medicine may be traced back to the growth of Buddhism in America, the current conceptualization of mindfulness in the West is generally independent of any spiritual practices (Keng et al., 2011). A review of current mindfulness interventions found an overall positive impact on psychological health, ranging from increases in general well-being and mindful awareness to reductions in maladaptive psychological symptoms (Keng et al., 2011). One of the central tenants of mindfulness, the ability to pay purposeful attention to one’s own emotions, has been linked with aspects of psychological well-being such as life satisfaction and mental health
Higher levels of involuntary attention to emotion were found to yield higher levels of depression and worry, while purposeful attention to emotion was shown to have a significant negative correlation with depression (Huang et al., 2013). This study then surmises that persons who pay voluntary attention to their own emotions may have more positive emotional outcomes than those who do not. Kramer, Weger, and Sharma (2013) hypothesized that persons participating in mindfulness meditation would have an altered perception of time due to the fact that previous research has determined that mindfulness improves attention with its emphasis on attention to the present moment. Their study found that participants engaging in a mindfulness exercise overestimated the length of time that images were visually presented to them. The authors attribute this to temporary changes in attention and perception, where the participants were more aware and focused in the moment to the task at hand.

**Mindfulness and Well-Being**

With a non-clinical population, a two-week online-based mindfulness intervention was found to evoke significant decreases in stress, anxiety, and depressive symptoms, while no changes from baseline were found in controls (Cavanagh et al., 2013). With another non-anxious population, a study found that induced worry reduced breathing stability while induced mindfulness suggested higher breathing stability and flexibility (Vlemincx, Vigo, Vansteenwegen, Van den Bergh, & Van Diest, 2013). A survey of a large number of college students found that a mindful approach to everyday activities and general daily life is positively correlated with overall well-being and negatively correlated with psychological distress (Bowlin & Bear, 2012). This study suggests that a “mindful approach to ongoing experience,” or mindful awareness, might contribute to a person’s well-being, especially in persons who already display
the ability to be self-disciplined and hardworking (Bowlin & Baer, 2012). Mindfulness techniques and music have also been identified as separate self-care strategies for persons working in a mental health setting, showing that these interventions are still useful even in a non-clinical population (Williams, Richardson, Moore, Gambrel, & Keeling, 2010).

**The Effect of Mindfulness on Anxiety**

With regard to the effect of mindfulness on physical and psychological stressors, in an early study, Jon Kabat-Zinn et al. (1998) used mindfulness-based stress reduction techniques via audio recordings with patients in the hospital setting during anxiety-provoking photochemotherapy treatments for psoriasis, and found a significant reduction in recovery time over controls. An eight-week mindfulness-based cognitive therapy (MBCT) group treatment intervention, modeled after Kabat-Zinn’s mindfulness-based stress reduction (MBSR), found significant reductions in anxiety, worry, and depressive symptoms in persons with generalized anxiety disorder (Evans et al., 2008). When compared to long-term pharmacological treatments, a randomized controlled trial of MBCT was found to generate greater change in severity of depression and an increase in self-compassion and mindfulness (Kuyken et al., 2010). These increases affected emotional reactivity, and allowed individuals to choose an emotional response rather than habitually react to negative thoughts and difficult situations. A study of college-aged adults was conducted to determine the effect of negatively based cognition on the relationship between mindfulness and emotional distress. Emotional distress was considered either high levels of depression and/or anxiety since both conditions are “often correlated and…co-morbid,” (Kiken & Shook, 2012). This study used the Mindful Attention Awareness Scale and the Beck Anxiety Inventory, among other assessments, to measure emotional distress. The results indicate that mindfulness does indeed decrease emotional distress partially because it reduces the
frequency of negatively biased cognitions. In 2013, researchers compared the effects of an adapted version of mindfulness-based stress reduction with cognitive behavior therapy for veterans experiencing varying anxiety disorders (Arch et al., 2013). Both treatment groups showed large improvements in overall symptoms, but mindfulness-based stress reduction promoted decreased worry and fewer comorbid emotional disorders than the cognitive behavioral therapy intervention (Arch et al., 2013). This study helps validate the efficacy of mindfulness interventions in the realm of clinical psychology. A controlled study on the effect of an eight-week mindfulness-based stress reduction intervention with medical students found a broad range of benefits, ranging from reduced anxiety and depression to increased empathy (Shapiro, Schwartz, & Bonner, 1998). Although these participants were students, this population in particular tends to experience higher levels of stress due to the “enormous demands” of their desired professions, and this study shows that a mindfulness intervention can assist this population by providing a way to cope with stress (Shapiro et al., 1998). Another eight-week mindfulness-based stress reduction intervention was used in a randomized controlled study with participants experiencing anxiety (Vøllestad, Sivertsen, & Nielsen, 2011). Again the mindfulness group presented significant improvements for all measures of anxiety compared with the control group. This study also tracked participants beyond the initial treatment phase, and discovered that the gains made by the mindfulness group were sustained at a six-month follow-up. This finding suggests that the effects of short-term mindfulness training might indeed create long-term changes in the participants’ “way of being” to which Kabat-Zinn (2003) has referred. While mindfulness has been associated with reductions in anxiety and depression, the relation of the specific facets of mindfulness to these psychological stressors still needs further clarification. A study of 187 participants seeking treatment for their distress, sought to determine if only certain
facets of mindfulness were associated with reductions in anxiety and depression (Desrosiers, Klemanski, & Nolen-Hoeksema, 2013). Almost all of the listed facets of mindfulness were found to have significant inverse relation to the dimensions of anxiety and depression (Desrosiers et al., 2013). Finding that the individual components of mindfulness affect the symptoms of anxiety and depression may only further implicate the use of mindfulness as an overall treatment for these conditions.

**Mindfulness, Anxiety, and Brain Functioning.** A study using brain imaging found that a part of the brain related to showing empathy was active in many participants even before mindfulness training began (Mascaro, Rilling, Negi, & Raison, 2013). After the study was completed, post-tests found no difference in brain responses between experimental and control groups compared to pre-tests, leading the authors to believe that some individuals might be predisposed to engage or participate in mindfulness techniques. Conversely, differences in brain imaging between healthy control participants and participants with active generalized anxiety disorder in either a mindfulness-based stress reduction group or a stress management education experimental group were compared in a study in 2013 (Hölzel et al., 2013). The functional magnetic resonance imaging scans found that activation in the amygdala, a part of the brain typically controlling emotions, decreased in both experimental groups. However, the connectivity between the amygdala and the prefrontal cortex, a part of the brain associated with complex cognitive and emotional functioning, significantly increased in the mindfulness group only (Hölzel et al., 2013). This change was also correlated with a positive change in score on the Beck Anxiety Inventory as well, indicating clinical relevance of these changes in brain connectivity due to mindfulness training (Hölzel et al., 2013). A study of electroencephalographic brain images and physiological measures of persons participating in Zen
meditation found increased activity in the regions of the brain associated with relaxation along with decreased blood pressure and stress (Chiesa, 2009). A review of previous research also found that meditation could potentially protect individual’s brains from cognitive decline associated with age, further implicating the use of mindfulness interventions with an older adult population (Chiesa, 2009).

**Meta-analyses on Mindfulness Interventions.** A meta-analysis of empirical studies using MBSR found an overall effect size of 0.5 (p < .0001), suggesting that mindfulness techniques may help a wide range of individuals handle clinical and non-clinical problems (Grossman, Niemann, Schmidt, & Walach, 2004). In 2013, another meta-analysis was conducted to determine the efficacy of mindfulness-based therapy (MBT), and this analysis showed an effect size of Hedge’s $g = 0.55$ for MBT compared with an effect size of 0.22 for other psychological treatments (Khoury et al., 2013). The authors suggest that MBT is an effective treatment and may be “especially effective for reducing anxiety, depression, and stress,” finding that studies targeting anxiety had the largest effect sizes (Hedge’s $g = 0.89$) (Khoury et al., 2013). Fuchs, Lee, & Roemer (2013) conducted a study to determine the efficacy of mindfulness-based treatments with marginalized populations, one of which includes the older adult population. In their meta-analysis, the authors found multiple studies using these mindfulness-based techniques with an older adult population, and calculated varying effect sizes between Hedge’s $g = 0.29$ and 0.88 (Fuchs et al., 2013). While the majority (n = 5) of these studies had an effect size greater then Hedge’s $g = 0.50$, the remainder (n = 2) show that further research should be conducted with this older adult population to more accurately determine its efficacy. However, challenges to the successful utilization of mindfulness interventions are listed in a review by Kabat-Zinn (2003), some of which include the idea of mindfulness as a “way of
being” to be continuously developed over time and the difficulty of implementing the technique in a short-term format. These potential challenges should be taken into consideration when creating and implementing mindfulness interventions for varying populations.

**The Effect of Music Therapy on Anxiety**

Music therapy, like mindfulness, has also been shown through research literature to be an effective strategy for targeting anxiety. A meta-analysis of music therapy interventions found an overall effect size of 2.34 for individuals experiencing anxiety (Standley, 1986). To further determine the effectiveness of music listening on reducing anxiety, participants in a 2001 study were exposed to a stressor either with or without the accompaniment of recorded music (Knight & Rickard, 2001). While the music used in this study was a recorded classical piece shown to induce relaxation in previous studies, the results do indicate that music listening was indeed effective at not only reducing subjective anxiety, but also physiological measures that typify stress, such as heart rate (Knight & Rickard, 2001). While receiving chemotherapy treatments, participants listening to familiar live music had significant improvement in procedural anxiety and increased relaxation over a silence control condition (Ferrer, 2007). With a clinical population, researchers compared a music-assisted intervention to a non-music intervention to determine the effect of music on the cognitive aspects of treating anxiety (Kerr, Walsh, & Marshall, 2001). The participants in the music condition group experienced a greater reduction in anxiety than controls, and also showed a positive impact on mood (Kerr et al., 2001). This study shows that the addition of music to an already established intervention only enhanced the effect on treating anxiety. This may imply that the addition of music to other interventions targeting anxiety may potentially have the same effect as well. Elliot, Polman, and McGregor (2011) attempted to determine the characteristics and components of relaxing music for the purpose of
anxiety control. The authors asked participants to imagine themselves in a state of mild anxiety prior to listening to 30 musical samples in order to rate the compositions’ relaxing qualities, list emotions evoked by the music, and label important components of the music. This study found that the genres “classical,” “new age,” and “chilled pop,” were found to be the most relaxing, and the most important components were tempo, melody, and beat (Elliot et al., 2011). While the majority of the music interventions in these studies were recorded, previous research in music therapy has determined that live music is more effective in reaching desired outcomes and reducing stress than recorded music (Bailey, 1983).

**Anxiety and Other Psychological Distress in Older Adults**

The United States Administration on Aging estimates that approximately 14% of the entire population is considered to be older adults aged 65 and up, totaling about 43 million Americans (Administration on Aging, 2014). Of this group, only 1-3% of persons ages 65-84 reside in an “institutional setting;” however, this percentage increases to 10% of older adults in the 85 years and older range (Administration on Aging, 2014). Many older adults residing in assisted living facilities have a higher risk of depression, cognitive decline, and inadequate self-care skills, especially if they are not involved in social activities (Polenick & Flora, 2011). The rate of depression among older adults who are homebound is also significantly higher than those who are not (Choi, Marti, Bruce, & Hegel, 2013). Almost half of all older adults residing in assisted living facilities present symptoms of depression, even if they are not clinically diagnosed, and many report feelings of loneliness and helplessness, as well (Theurer, Wister, Sixsmith, Chaudhury, & Lovegreen, 2012). The increase in awareness and reduction in stress that mindfulness brings to participants might not only impact psychological factors but also may
have implications for greater health outcomes. A study in 2013 found that a greater purpose in life is associated with a lower risk of stroke in older adults (Kim, Sun, Park, & Peterson, 2013).

**Music Therapy and Older Adults**

According to a survey of music therapy students, roughly 11% of all respondents would prefer to work with an elderly population (Lee, 2009). In 2011, the American Music Therapy Association Member Survey found that 9% of current music therapists work primarily with older adults (American Music Therapy Association, 2011). Knowledge of different effective music therapy interventions for reducing anxiety and stress with this population will be helpful for students entering the professional realm and for board-certified music therapists already working in the field. Although some music therapy research has already been conducted with this population, the need for alternative and complementary services becomes more apparent as this percentage of the American population increases. One study in 2004 with female older adult participants found that a music listening condition increased energy levels and reduced calmness levels, but relaxation alone significantly increased calmness levels (Hirokawa, 2004). A silence condition was used as the control. This study had three independent groups, and did not combine the music and relaxation interventions in one experimental condition to determine if there might be a combined effect on calmness levels. A music therapy pilot study, which employed music listening and relaxation techniques, was conducted with older adults to determine the intervention’s efficacy in decreasing depressive symptoms (Hanser, 1990). All participants improved on standardized measures from pre- to post-test, although each participant reacted to the music, imagery, and relaxation techniques differently (Hanser, 1990). Music therapy in small groups was also found to reduce symptoms of depression in older adults diagnosed with dementia (Ashida, 2000). In a 1999 study, older adults receiving a specific type of music and
relaxation called Guided Imagery and Relaxation, stated benefits such as increased relaxation, ability to be in touch with emotions, and gaining insight into problems (Carola & Nolan, 1999). Many of these benefits mirror those of mindfulness interventions.

**Mindfulness-Based Music Therapy**

Although no experimental or randomized controlled trial studies have yet been published that discuss the use of music and mindfulness to reach therapeutic goals, a proposal by Eckhardt and Dinsmore (2012) suggests that music listening could be used as an intervention for clients with depressive symptoms. The outlined Mindful Music Listening intervention blends music listening and mindfulness techniques with the expectation that the combination would “amplify the effects of both,” and elicit the ability to “notice, label, discuss, and manage emotions,” (Eckhardt & Dinsmore, 2012). The effect of induced mindfulness on college-aged music students’ perceptions during music listening was examined in a dissertation by Diaz (2010). Although both music and mindfulness were clearly discussed, the dependent variables in this study were the students’ perceptions about their experiences while listening to music and the mindfulness condition alone was an independent variable. Mindfulness and music were not joined as an independent variable to determine if there might be a combined effect on each participant’s focus of attention. However, Diaz’s study (2010), did find that induced mindfulness heightened the participants’ focus of attention during music listening, and that students who engaged in the mindfulness activity found it beneficial to their experience. In a 2010 article, a clinical psychologist suggested the use of music therapy in conjunction with mindfulness-based interventions for the purpose of increasing awareness and coping with worry (Graham, 2010). The author specifically mentioned music listening as a “highly convenient, effective, and tolerable means of achieving the goal of more mindful functioning,” (Graham, 2010).
Purpose of Study

This current study aims to discover if mindfulness-based music listening will have an effect on the anxiety symptoms and mindful awareness of older adults who reside in an assisted living facility as measured by two previously validated assessments. Since previous research has shown that live music is more effective than recorded music, a live music-accompanied body scan script was utilized in this study. Older adults residing in assisted living facilities also tend to experience more psychological stressors than persons who are non-institutionalized; therefore, the use of mindfulness techniques for eventual self-management of stress may be an effective coping mechanism for this ever-growing population. The two central questions of this study include: 1) How will mindful music listening affect measures of anxiety as compared to controls?, and 2) How does mindful music listening affect participants’ overall mindful awareness?
CHAPTER 2

METHOD

Participants

Participants for this study were recruited from three different assisted living facilities in Tallahassee, Florida. The participants included a total of twenty-four older adults, of which twenty-one were female and three male. Four of these participants dropped out of the study before completion, either due to losing interest \( (n = 2) \) or illness \( (n = 2) \). The final list of participants \( (N = 20) \) included eighteen females and two males. The age of the participants ranged from 55 to 94 years, with a mean age of 83 years old \( (SD = 9.40) \). Participants were referred to the researcher for the study based on recommendations by each facility’s respective activities or lifestyle personnel. The activities and lifestyle personnel did not include any residents in the potential participants list who had been previously diagnosed with dementia due to the nature of the study and for gaining consent. Participation in the study was voluntary, and written consent was obtained from each individual prior to the start of the intervention.

Participants were randomly divided into two groups: an experimental group \( (n = 10) \) and a wait-list control group \( (n = 10) \). The experimental group participated in the mindfulness-based music therapy condition and included one male participant. The control group, which did participate in the intervention after all data had been collected, also included one male participant. One participant in the experimental condition had total paralysis on the left side of the participant’s body, affecting the ability to follow all directions in the mindful body scan, but not affecting the overall ability to participate in the study.
Setting

Music therapy sessions and all data collection took place in the library of each respective assisted living facility. The libraries were all quiet rooms with multiple chairs and tables, facilitating the ability to fill out consent forms and assessments. Participants were either seated at a table in a chair or in their own wheelchair. Sessions took place individually or in small groups of up to four participants, depending on the participants’ availability to meet. The music therapist sat at the same table across from the participants during all sessions.

Materials

The music accompaniment was provided live on a classical, nylon-stringed guitar played by the researcher during the mindfulness-based music therapy intervention. The music consisted of three chords played continuously in an arpeggiated, fingerpicking pattern in a moderately slow triple meter. Each chord was repeated for four measures, and the chords included G, Cadd9, and Dadd11. Previous research has found that live music is more effective than recorded music at reducing anxiety (Bailey, 1983; Ferrer, 2007), new age style music is one of the most relaxing genres, and two of the most important components of relaxing music are tempo and beat (Elliot et al., 2011). This information was pertinent in determining the style of music to be used in this intervention. The mindfulness body scan script used as the independent variable (Appendix A) was transcribed and compiled by the researcher, based on a longer script that is publicly shared and available (Whalley, 2013). The researcher also used an iPad to display the body scan script from which the researcher could read during the live intervention.

The assessments used to measure changes in the dependent variables of anxiety symptoms and mindful awareness were the Beck Anxiety Inventory (BAI) and the Mindful
Awareness Attention Scale (MAAS), respectively. Each of these assessments has been used in previously published research.

The BAI is psychometrically sound and internally consistent (Grant, 2013). The assessment consists of twenty-one symptoms about which respondents must choose how much each has bothered them over the past month, including the current day. Each item is scored between 0 and 3 points depending on how much the respondent is bothered by that symptom. All of the individual item scores are added up to indicate the level of anxiety the respondent is feeling, from minimal to severe. Scores between 0-9 generally indicate minimal levels of anxiety, scores between 10-16 indicate mild anxiety, scores between 17-29 indicate moderate anxiety, and scores exceeding 30 might indicate persistent or severe levels of anxiety. This assessment has been used in many previous studies as a measure of changes in anxiety (Grant, 2013; Hölzel et al., 2013; Kiken & Shook, 2012).

The MAAS contains fifteen statements that the respondents must rank on a Likert scale from 1 to 6 how frequently or infrequently they have that experience. The ranks are totaled and a mean score is calculated to indicate the respondents’ levels of mindfulness. The higher the score the more mindful the respondent is, and the average score on this assessment is 3.86 (Baer, Smith, & Allen, 2004). The MAAS has been psychometrically validated (MacKillop & Anderson, 2007), and has also been empirically shown to not only measure facets of mindfulness, but also of well-being and self awareness (Brown & Ryan, 2003).

Larger font versions of all paper consent forms and assessments were provided to participants during this study. A verbal version was also always offered to participants, and only one participant required a verbal version and assistance due to vision impairment.
Procedure

After receiving a list of names of potential participants from the activities or lifestyle personnel, the researcher arrived at each facility during a specified time, generally after lunch or before a scheduled bingo game, to meet with the residents in person. During the initial interaction, the researcher was introduced to the potential participants and briefly discussed the procedures and goals of the study. Interested individuals then scheduled a future time to meet with the researcher at the facility for the project. Depending on the day the participants were scheduled, they were randomly assigned to either the experimental or control group. All individuals agreed to meet with the researcher two times during the treatment period.

During the first meeting for the study, all participants were asked to read and sign a consent form. Once consent was obtained, all participants completed two assessments to determine baseline measures of anxiety and mindful awareness. These pre-tests included larger font versions of the Beck Anxiety Inventory (BAI) and the Mindful Awareness Attention Scale (MAAS). Participants were instructed to read all directions carefully and to ask the researcher for any assistance. All participants were offered verbal versions of these assessments, which would be read aloud by the researcher. Writing utensils were also provided by the researcher.

When the initial assessments were complete, the wait-list control group participants were asked to schedule another meeting with the researcher for the following week on the same day to complete the music listening portion of the project. Contact information was generally voluntarily provided in order for the researcher to give the participants a reminder the day prior to the follow-up meeting.

After completing the preliminary assessments, the treatment phase began for the experimental condition. The participants were informed that the intervention section would
consist of an approximately fifteen-minute long music-accompanied body scan script that the researcher would recite aloud. The experimental condition group was then instructed to either sit in a more comfortable chair, or to find a comfortable sitting position where they were. The researcher suggested that the participants relax in their chairs and close their eyes. They were asked to follow all cues and instructions within the body scan script and to listen to the music.

The body scan script section then began, and consisted of instructions to focus on different parts of the body, beginning with the feet and moving systematically upward to the head. Throughout the script the participants were reminded to focus on the body and notice when the mind began wandering to different thoughts. When the mind wandered, they were urged to return their focus to sensations in the body. The body scan section aims to increase participants’ overall mindful awareness of their bodies and the sensations they are feeling in the present moment.

After the body scan was complete, the researcher hosted a brief discussion concerning the participants’ experiences during the body scan intervention. The researcher guided the participants to discuss their emotions and promoted expression and regulation of emotions. The researcher then instructed participants on how to use this technique of non-judgmental awareness as self-management of negative emotions in the future, and encouraged the participants to try this technique during the following week. Anecdotal information regarding the participants’ experiences was also collected by the researcher.

At this point, the researcher informed the participants that the session had ended for the day, and scheduled a follow-up meeting for the same day during the next week. During the follow-up meeting, the mindfulness-based music listening intervention was provided first, and
the same two aforementioned assessments were administered again at the end of the treatment phase as a post-test to measure their current levels of anxiety and mindful awareness.

At the second meeting for the wait-list control group, the participants were asked to complete a second set of the BAI and MAAS assessments to measure their current state (post-tests for this study) prior to starting their mindfulness-based music listening intervention. Following the post-tests, these participants then received the same music intervention as the experimental group. No data from the wait-list control group’s intervention was collected for this study, except for anecdotal information concerning their experiences during the body scan.
CHAPTER 3

RESULTS

Data Analyses for Research Question One

How will mindful music listening affect measures of anxiety as compared to controls?

Data was collected from all twenty participants who completed two sessions for this study. The BAI was used to measure anxiety symptoms prior to any music listening intervention, and then again a week later after the second session. A difference score for each participant was calculated to indicate the change in amount of anxiety by taking the difference between each participant’s pre-test and post-test scores. A Mann-Whitney U test was used to determine the significance of the difference between the two groups since the number of participants in this study was relatively small (N = 20). Difference scores for the experimental group showed a mean of 4.50 (SD = 6.33), while the control condition scores showed a mean of 2.40 (SD = 4.77). A Mann-Whitney U test indicated that there was no significant difference between the difference scores of both groups, $U = 40.5, z = 0.68, p > 0.49$.

Table 1
Mean Difference Scores on the Beck Anxiety Inventory

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mindfulness-Based Music Listening</td>
<td>2.40</td>
<td>4.77</td>
</tr>
<tr>
<td>Wait-List Control</td>
<td>4.50</td>
<td>6.33</td>
</tr>
</tbody>
</table>

In order to determine the difference in a single group from pre- to post-test, a Spearman Rank-Order test was conducted. Pre-test scores on the BAI for the experimental condition showed a mean of 11.90 (SD = 7.69), while the same group showed a mean of 7.40 (SD = 9.03)
on the post-test. This test indicated that there was a significant difference in scores of the experimental group from pre-test to post-test, \( r_s = 0.72, t = 2.95, p < 0.02 \). However, there was also a significant difference for the control condition alone, \( r_s = 0.89, t = 5.59, p = 0.0005 \).

Table 2
**Pre-test and Post-test BAI Means for the Experimental Condition**

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>11.90</td>
<td>7.40</td>
</tr>
<tr>
<td>SD</td>
<td>7.69</td>
<td>9.03</td>
</tr>
</tbody>
</table>

Underline indicates significant difference between means.

Scores on the BAI at pre-test indicated that eight of the total participants (40%) were in the minimal range, five participants (25%) were in the mild range, six participants (30%) were in the moderate range, and one (5%) was in the severe range prior to the treatment phase. On the post-test BAI, fourteen participants (70%) scored in the minimal range, with two participants each (10%) in the mild range, moderate range, and severe range. Overall, three of the participants in the experimental condition (30%) had a post-test score of 0 or 1. None of the participants in the control group had a post-test score of 0 or 1.

**Data Analyses for Research Question Two**

*How does mindful music listening affect participants’ overall mindful awareness?*

The MAAS assessment was administered to participants before and after the treatment phase. This assessment is based on a mean score of participants’ responses to fifteen statements. However, the 12th question on this assessment directly asks about one’s experience while driving a vehicle. Since the majority of the participants in this study no longer drive, some participants did not give an answer to this item, and the question had to be discarded for the purposes of this
analysis. Instead, the MAAS was analyzed by calculating a mean score for the remaining fourteen items on this assessment. A difference score was then calculated based on each participant’s pre- and post-test scores on the MAAS without question 12. Difference scores for the experimental group showed a mean of -0.17 (SD = 0.54), while the control condition scores showed a mean of 0.12 (SD = 0.83). A Mann-Whitney U test indicated that there was no significant difference between the difference scores of both groups, U = 58, z = -0.57, p > 0.57. In fact, scores on the MAAS showed that the participants in the control condition actually had higher scores on average on the post-test than the experimental group.

Table 3

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mindfulness-Based Music Listening</td>
<td>-0.17</td>
<td>0.54</td>
</tr>
<tr>
<td>Wait-List Control</td>
<td>0.12</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Another follow-up analysis was conducted to determine the overall change in scores for both groups combined. A Wilcoxon Signed-Rank test indicated that there was not a significant difference from pre-test to post-test for both groups combined, W = 16, z = 0.37, p > 0.71. Both analyses of the MAAS assessment show that there was no change significant change in scores during the two sessions either between or within groups.

Anecdotal evidence for the effectiveness of the mindfulness-based music listening intervention was collected by the researcher during discussion periods following the treatment phase. Although three participants found the intervention to be ineffective, with statements such as, “It didn’t do much for me,” the majority of participants had only positive feedback for the
researcher. Numerous participants made statements such as, “I felt so relaxed,” and, “I had to focus to stay awake.” One participant claimed to be relieved of pain the participant had been feeling in their foot and stated, “I felt like your voice [helped me] so I could focus on each side of my body.” Another participant reported using the mindful body scan technique at home when having difficulty sleeping. This participant claimed that the technique worked so well that the participant fell asleep before completing the full body scan. Although this evidence is only anecdotal, the opportunity to provide help for individuals has always been of importance in the field of music therapy.
CHAPTER 4
DISCUSSION

The purpose of this study was to determine the effectiveness of a mindfulness-based music listening intervention on decreasing anxiety and increasing mindful awareness in older adults residing in an assisted living facility. Results revealed that the mindfulness-based music listening condition did not foster a significantly different decrease in anxiety as compared with the wait-list control condition. Yet, the overall decrease in anxiety symptoms was significant from pre- to post-test in the experimental condition. This finding confirms previous research in music therapy that live music interventions have a high effect size for reducing anxiety (Standley, 1986). Results also revealed, however, that there was no significant difference in scores between the experimental and wait-list control condition on the MAAS that might indicate a change in mindful awareness. No significant change was found from pre- to post-test on the MAAS for either condition.

The results imply that the mindfulness-based music listening condition did not influence a change on the anxiety symptoms or mindful awareness of older adults differently than controls. While the mindfulness-based music listening activity did not create a significant difference between groups, this does not mean that the mindfulness-based body scan was essentially ineffective. As aforementioned, three of the ten participants in the experimental condition had a post-test score of 0 or 1 on the BAI, whereas none of the participants in the control group had a score of 0 or 1. While this may initially seem impressive, the analysis still shows that the distinction between groups was not significant. A larger sample of older adults may have indeed indicated a difference between the two conditions, or perhaps confirmed this study’s findings that mindfulness-based music listening does not necessarily affect anxiety scores.
Yet, previous research on mindfulness and anxiety has shown that this type of intervention is typically successful at targeting anxiety symptoms (Grossman et al., 2004; Khoury et al., 2013). However, these meta-analyses on the effectiveness of mindfulness interventions typically examine studies that have been conducted over a longer period of time, being generally around eight weeks in length. The short-term nature of this study, where only two sessions of the intervention were administered one week apart, may have limited the intervention’s effectiveness. Mindfulness techniques can also be used for self-management of undesirable psychological symptoms, and a longer treatment period could potentially assist in decreasing long-term anxiety in participants. Perhaps older adults in assisted living could be exposed to these mindfulness-based techniques for the typical eight weeks to further determine the mindfulness-based music therapy intervention’s efficacy.

Another result to take into consideration is the fact that all participants, regardless of condition, showed a significant decrease in anxiety scores. A number of confounding variables may have affected anxiety scores, since pre- and post-tests were administered one week apart. Although all participants reside in assisted living facilities and have similar daily schedules, individual participants may have different daily stressors affecting their anxiety levels. In fact, perhaps the initial pre-test made participants more aware of their typical anxiety levels and this basic awareness led to a decrease on the post-test. Further research should be conducted with a larger sample of this population and over a longer period of time to gain a clearer picture of the efficacy of a mindfulness-based music intervention with older adults.

While a larger sample of this population would have helped create a stronger conclusion to the study, this specific population in general may not be the best fit for a mindfulness-based intervention. Many older adults are diagnosed with memory disorders (Administration on Aging,
2014), and although participants diagnosed with dementia were excluded from this study, it does not mean that the participants had no memory issues. Multiple participants made comments during the treatment phase such as, “Is this what we did last week?” that might indicate forgetfulness. While forgetfulness does not singularly affect older adults, it made have caused more difficulty for these participants with the awareness portion of the activity. Perhaps another population that also tends to have higher levels of anxiety could benefit more from this type of mindfulness-based music intervention, and this should be taken into account for future research.

The analysis of the scores from the MAAS assessment also did not show a significant difference between groups. The intent of giving the MAAS was to determine if the mindfulness-based activity would elicit higher scores indicating a higher level of overall mindful awareness. However, the MAAS assessment itself seems to measure mindful awareness on everyday activities, and not changes in short-term awareness. From the non-significant difference found from the analysis, it appears that the brief mindfulness-based music listening activity was ineffective at causing a change in the participants’ perspectives on everyday activities over controls. This assessment may be better suited to a long-term study to determine changes in awareness of activities of daily living over a period of time.

One last question to take into consideration is the concept of some individuals being predisposed to mindfulness-based activities. The study conducted by Mascaro et al. (2013) discusses the idea that some individuals showed higher levels of functioning in the brain related to empathy prior to being exposed to a mindfulness intervention. Anecdotal evidence from this study might further validate this idea. The range of scores on the MAAS pre-test seemed very wide, ranging from a mean score of 1.43 to 5.64. The participants with high scores on the assessment generally kept high scores through the post-test, and the same with those with lower
scores. The analysis even showed no significant difference from pre- to post-test for all participants. Some of these participants with higher pre-test scores made comments to the researcher indicating that they already practice meditation or understood the concept of mindfulness. Perhaps the potential predisposition for some participants to be mindful also prevented a significant change in overall scores, especially seeing that some of the scores were very high. Although some individuals may not necessarily be predisposed to be mindful, this does not mean that a mindfulness-based intervention will certainly be ineffective for them.

In conclusion, this study was not able to determine if a mindfulness-based music listening activity was effective at decreasing anxiety symptoms and increasing mindful awareness more than in controls; however, the results revealed a significant decrease in anxiety scores from pre-to post-test in the experimental mindfulness-based music listening condition. Although this current research does not solely imply the use of mindfulness-based music listening with older adults in assisted living facilities as an intervention to reduce anxiety symptoms, the results for the experimental group on the BAI did confirm previous research findings that mindfulness and music interventions, respectively, are effective at reducing anxiety in general. Further research should still be conducted with a larger sample of this population to investigate the relationship between mindfulness techniques and music therapy and their effect on decreasing anxiety, depression, and stress. Research should also be conducted in this newer field of mindfulness-based music therapy to discover for whom and under what circumstances these interventions could be most effective. This may help conclude if the combination of both mindfulness and music can amplify the effects of both or if one technique is actually more powerful than another.
APPENDIX A

BODY SCAN SCRIPT

Form the intention to just be present with yourself in this moment as it is. You are choosing to take the time to simply be where you are. This body scan can be done in any position in which you feel comfortable. Place your arms down by your sides and close your eyes if that’s comfortable to you.

Become aware of the sensation of the chair pressing up against the body. Some points of your body make contact with the chair. Be aware of the sensation at those points of contact. Now you may become aware of your breathing. The flow of air might be cooler as it enters the nostrils and into the chest. Notice the rise and fall of the belly. As the air moves in and then out, the air might be slightly warmer.

The process continues. We are recognizing that it’s not about breathing in any particular way, it’s just about simply being aware of the process of breathing itself.

Allow the attention to rest on the body as a whole. Recognize that you may feel relaxed during this process, but that may not be the point of being present. You may in fact not feel relaxed at times during this body scan, and if that is the case, simply notice what it is. If you’re anxious, uncomfortable, wanting it to be different, or agitated in some way, just notice it.

Moving the attention, narrowing it like a beam of light, like a spotlight, moving it down the body, down the left leg, all the way down the foot, to the left toes. We are resting in awareness of the left toes – almost to the exclusion of everything else. Just noticing the sensation: it might be warmth, coolness, or no sensation at all. Allow the attention to extend to the rest of the left foot.

We may find along the way that our attention drifts. That we begin to think of other things, other times, having memories, emotions, anything at all. And simply, when we notice this, bring the attention back to the present, ushering it firmly back - at this moment to the left foot.

Now move on to the left ankle. Just simply be aware of this part of the body. Now move to the left lower leg, the calf as it is resting. Maybe you notice the sensation of clothing touching this part of the body. Bring the attention back to the left lower leg each time we notice that the attention wandered - that we find ourselves lost in thought.

Now notice the left knee, seeing if we can become aware of it in isolation in our body.

Recognize there are parts of the body that hold memories and feelings. Along the way it is not unusual for people to find a memory, emotion, or association held with a specific part of the body. If these memories or emotions arise, simply allow them to wash over us like waves on the beach. Just like the ocean, washing over us and then receding. Recognizing that they are just thoughts or emotions or memories.

Now be aware of the left thigh. If we recognize tension, you can choose to let it go or just to be aware of it.
Allow the awareness now to shift across the hips into the right leg and down to the right toes. Simply noticing the toes, perhaps aware of how they may be different from the toes of the left foot, but not needing them to be any particular way. Move to the rest of the right foot now. Aware of perhaps how complex this part of the body is and how it is able to move us around. Now become aware of the right ankle. Not straining to have any experience in particular.

Move your attention to the right lower leg, calf, shin. Notice any sensation here. Maybe even clothing touching the body at the surface. Awareness of the right knee. Notice the right thigh.

We may find our attention wandering to thoughts of other things, other times, other places. Each time we are aware that the mind has wandered, usher it back to the place in the body where we are. Allow the attention to rest here for whatever period of time we are able. Each time the mind wanders, we are ushering it back patiently, but firmly.

The attention now moves to the lower back, an area in which people may harbor some discomfort. It doesn't matter what it is most of the time, we are interested in what it is right now. And if we find ourselves labeling it is pain - see if we can be more specific. What exactly is it we are feeling, and where is it?

Bringing the attention to the torso. Feeling here, perhaps more directly, the movement of the breath. The rise and fall of the belly. Move up the torso into the rib cage, lungs, upper back. Aware perhaps of the work of the breathing, moving oxygen into the entire body. Awareness of the shoulders, the effects of rocking motion of breathing on the shoulders.

Drawing the attention back to that beam of light, now point to the top of the left arm and moving all the way down to the left fingers. The forearm, elbow, upper arm. Experiencing just the left arm as a whole. Can we stay present with it for just this moment?

Allowing attention to shift across the chest to the right arm, all the way down to the fingers of the right hand. The forearm, elbow. Bringing awareness to the right upper arm. Allowing the beam of light now to include the entire right arm.

Attention now moves to the neck, this very complicated part of the body with all of its muscles and nerves. This is an area in which we might hold some discomfort or tightness. Seeing if in this moment we might just be aware of it without the need to do anything, or to change it in any way.

Moving attention up in to the head. Tuning into sensations in the face, cheeks, the forehead. We may encounter tightness or furrowing of the forehead, clinching of teeth. We may choose to let this tension go, or maybe just acknowledging the tension without the need to do anything about it.

Very slowly, but deliberately, widening that spotlight into a flood light, encompassing the entire body at one time. Aware of this amazing vehicle in which we live. This whole body, breathing in this moment. Functioning in this moment. Thinking and feeling, but still present.
In these last few moments, feel some gratitude towards ourselves for having taken this time to simply be present with our experience as it is, without the need to make it any different, without the need to do anything except to be aware and present. For the only moments that we actually have are these present moments.

And so in time as it feels comfortable to you, begin to wiggle your fingers and toes. Gently bring your attention back to this room and the activities of your day. Recognizing the feeling of presence and focus, if that’s what you’re experiencing, is as close as the next moment, is as close as your very next breath.
APPENDIX B

BECK ANXIETY INVENTORY

Instructions: Please carefully read each item in the list. Indicate how much you have been bothered by that item during the past month, including today, by circling the number in the corresponding space in the column next to each item.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not at all</th>
<th>Mildly! &quot;I don't bother me much!&quot;</th>
<th>Moderately! &quot;I it! isn't pleasant at all!&quot;</th>
<th>Severely! &quot;It bothers me a lot!&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbness &amp; tingling &amp;</td>
<td>0!</td>
<td>1!</td>
<td>2!</td>
<td>3!</td>
</tr>
<tr>
<td>Feeling &amp; hot &amp;</td>
<td>0!</td>
<td>1!</td>
<td>2!</td>
<td>3!</td>
</tr>
<tr>
<td>Wobbliness in legs &amp;</td>
<td>0!</td>
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<tr>
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<td>1!</td>
<td>2!</td>
<td>3!</td>
</tr>
<tr>
<td>Fear of worst happening &amp;</td>
<td>0!</td>
<td>1!</td>
<td>2!</td>
<td>3!</td>
</tr>
<tr>
<td>Dizzy or light headed &amp;</td>
<td>0!</td>
<td>1!</td>
<td>2!</td>
<td>3!</td>
</tr>
<tr>
<td>Heart pounding/racing &amp;</td>
<td>0!</td>
<td>1!</td>
<td>2!</td>
<td>3!</td>
</tr>
<tr>
<td>Unsteady &amp;</td>
<td>0!</td>
<td>1!</td>
<td>2!</td>
<td>3!</td>
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<tr>
<td>Terrified &amp; scared &amp;</td>
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<td>1!</td>
<td>2!</td>
<td>3!</td>
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<tr>
<td>Nervous &amp;</td>
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<td>1!</td>
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<td>3!</td>
</tr>
<tr>
<td>Feeling of choking &amp;</td>
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<td>1!</td>
<td>2!</td>
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<td>Hands trembling &amp;</td>
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<td>Fear of losing control &amp;</td>
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<tr>
<td>Difficulty in breathing &amp;</td>
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<tr>
<td>Fear &amp; flying &amp;</td>
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<td>1!</td>
<td>2!</td>
<td>3!</td>
</tr>
<tr>
<td>Scared &amp;</td>
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<td>Faint/lightheaded &amp;</td>
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<td>1!</td>
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<td>3!</td>
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<tr>
<td>Face flushed &amp;</td>
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<td>Hot/cold sweats &amp;</td>
<td>0!</td>
<td>1!</td>
<td>2!</td>
<td>3!</td>
</tr>
</tbody>
</table>
APPENDIX C

MINDFUL ATTENTION AWARENESS SCALE

Instructions: Below is a collection of statements about your everyday experience. Using the scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1. I could be experiencing some emotion and not be conscious of it until some time later.!
   1 & 2 & 3 & 4 & 5 & 6

2. I break or spill things because of carelessness, not paying attention, or thinking of something else.!
   1 & 2 & 3 & 4 & 5 & 6

3. I find it difficult to stay focused on what’s happening in the present.!
   1 & 2 & 3 & 4 & 5 & 6

4. I tend to walk quickly to get where I’m going without paying attention to what I experience along the way.!
   1 & 2 & 3 & 4 & 5 & 6

5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.!
   1 & 2 & 3 & 4 & 5 & 6

6. I forget a person’s name almost as soon as I’ve been told it for the first time.!
   1 & 2 & 3 & 4 & 5 & 6
7. It seems I'm "running on automatic" without much awareness of what I'm doing.
   
8. I rush through activities without being really attentive to them.
   
9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.
   
10. I do jobs or tasks automatically, without being aware of what I'm doing.
   
11. I find myself listening to someone with one ear, doing something else at the same time.
   
12. I drive places on "automatic pilot" and then wonder why I went there.
   
13. I find myself preoccupied with the future or the past.
   
   
15. I snack without being aware that I'm eating.
### Experimental Group

<table>
<thead>
<tr>
<th>Participant</th>
<th>MAAS Pre</th>
<th>MAAS Mean Score</th>
<th>MAAS Post</th>
<th>Mean Score</th>
<th>Diff MAAS</th>
<th>BAI Pre</th>
<th>BAI Post</th>
<th>Diff BAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1--1</td>
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<td>36</td>
<td>2.57</td>
<td>0.14</td>
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<td>9</td>
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<tr>
<td>1--2</td>
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<td>4.64</td>
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<td>5</td>
<td>73</td>
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### Control Group

<table>
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<tr>
<th>Participant</th>
<th>MAAS Pre</th>
<th>MAAS Mean Score</th>
<th>MAAS Post</th>
<th>Mean Score</th>
<th>Diff MAAS</th>
<th>BAI Pre</th>
<th>BAI Post</th>
<th>Diff BAI</th>
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<td>60</td>
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<td>0</td>
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<td>2--11</td>
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<td>37</td>
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APPENDIX E

LETTER OF APPROVAL FROM FACILITY

RE: FSU Music Therapy Project - Tomaselli, Kimberly

RE: FSU Music Therapy Project

Matthew Johnson <MRjohnson@allegroliving.com>

Mon 2/10/2014 4:30 PM

To: Tomaselli, Kimberly
Cc: Cheryl Hebert <CHebert@allegroliving.com>

Hi Kim. Sorry for the delay in getting back to you. This should not be a problem at all. And in order to better assist you, I am going to hand this project off to our activities department.

Cheryl Hebert is our Lifestyle Director (fancy name for activities director) and Dan Palmere is her assistant. I have copied both of them on this email so you all can coordinate. They should be able to help you with the list of residents who would qualify.

Allegro looks forward to working with you and we hope this project can be a successful one!
APPENDIX F
FSU BEHAVIORAL CONSENT FORM

FSU Behavioral Consent Form

Mindfulness and Music

You are invited to be in a research study of the effects of mindfulness-based music listening. You were selected as a possible participant because you live at the Allegro community. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Kim Tomaselli, College of Music, Florida State University.

Background Information:

The purpose of this study is to find out if listening to music and participating in mindfulness activities can decrease anxiety and increase awareness of adults living in the Allegro community.

Procedures:

If you agree to be in this study, we would ask you to do the following things: 1) Participate in three sessions of the Mindfulness and Music project at Allegro, 2) Fill out two surveys about how you are feeling before the first session and after your last session, and 3) Participate in the activities during the project and maybe even practice some of the activities at home.

Risks and benefits of being in the Study:

The study has the potential for minor risks. You may become more aware of how you are feeling, even if these feelings are uncomfortable at first. If you become too uncomfortable, you may leave the project at any time.

The benefits to participation could include decreased anxiety, decreased stress, and increased awareness of your everyday life.

Compensation:

There is no compensation for participating in this study.

Confidentiality:

The records of this study will be kept private and confidential to the extent permitted by law. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records.

FSU Human Subjects Committee approved on 2/19/2014. Void after 2/18/2015.
HSC # 2014.11921
Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University or Allegro Senior Living. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Kim Tomaselli. You may ask any question you have now. If you have a question later, you are encouraged to contact her at Florida State University via Dr. Jayne Standley, College of Music, 850-644-4565, jstandley@fsu.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the FSU IRB at 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742, or 850-644-7900, or by email at humansubjects@magnet.fsu.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:

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

_________________________________  __________________
Signature                                               Date

_________________________________  __________________
Signature of Investigator                         Date
APPENDIX G

IRB APPROVAL

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

APPROVAL MEMORANDUM

Date: 02/19/2014
To: Kimberly Tomaselli
Address:
Dept.: MUSIC SCHOOL
From: Thomas L. Jacobson, Chair
Re: Use of Human Subjects in Research

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Expedited per 45 CFR § 46.110(7) and has been approved by an expedited review process.

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

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

If the project has not been completed by 02/18/2015 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

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

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

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

Cc: Jayne Standley <jstandley@music.fsu.edu>, Advisor
HSC No. 2013.11921
REFERENCES


BIOGRAPHICAL SKETCH

Kimberly Tomaselli was born on January 25, 1984 in Carmel, New York. She became thoroughly interested in music as a career after learning to play the oboe throughout her high school years in South Florida. During her undergraduate degree, Kimberly intended on pursuing oboe performance; however, she became captivated by the study of music theory early in her college career. She received a Bachelor of Music degree in Music Theory from Florida State University in 2010. Her undergraduate thesis was titled, “Musical Abilities: A Comparison of Abilities Observed in Children and Adults.” As Kimberly also wanted the experience of being able to help others through music, she returned to graduate school at Florida State University in January 2010 to pursue a Master of Music degree in Music Therapy. She completed her degree in 2014. Kimberly worked at Tallahassee Memorial HealthCare as a Graduate Teaching Assistant and part-time Music Therapist from August 2013-July 2014. She holds Board Certification as a Music Therapist (MT-BC) and has certification as a Neonatal Intensive Care Unit Music Therapist (NICU-MT). Kimberly is also working on completing her certification as a Registered Yoga Teacher, currently teaches yoga, and shares the concept of mindfulness with her students.