

**Music Therapy in the Medical Setting**

**A Music Therapy Program Proposal for the Mercy Medical Hospital**

by

Andrew Wong

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We, the thesis committee for the above candidate for the  
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### **Music Therapy in the Medical Setting**

This music therapy program proposal has been designed for implementation at the Mercy Medical Hospital in Rockville Centre, NY. Music therapy is a unique healthcare profession that utilizes music to assist individuals from all age groups improve their physical, emotional, social, communication, and cognitive functioning. Music therapists work with people across the lifespan who have demonstrated a wide spectrum of needs including physical and developmental disabilities, medical illness, psychiatric disorders and neurological impairments (American Music Therapy Association [AMTA], 2020).

This proposal will define music therapy, and delineate the research of the effectiveness of music therapy on the physical and emotional needs of medical patients. A proposed weekly schedule and details of music therapy sessions with descriptions of music therapy methods and their variations including materials, goals, and benefits are included. The financial implications of the program are detailed, including salary, equipment and other program expenses. The connections of music therapy and the mission of the facility are presented, as well as context for implementation of this music therapy program.

### **Statement of Need**

Catholic Health Services is an integrated system which includes six acute care hospitals, three nursing homes, hospice, a community based agency for individuals with special needs, and an extensive network of practices. It has more than 4,000 nurses, 4,300 medical staff, with approximately 18,400 total employees. Those on Long Island have access to the highest level of care whether it is for cardiovascular treatment, excellent cancer care, behavioral health, or other

services. Some of these services include, but are not limited to, occupational therapy, physical therapy, speech pathology/therapy, social services, and even pet therapy (CHSLI, 2020). Despite the many services that are offered, music therapy is not currently one of these options. Music therapy is a multifaceted practice that can be implemented to address a wide range of health related goals. As such, it is recommended that Catholic Health Services of Long Island consider the addition of a music therapy program in their hospitals.

### **Mercy Medical Center**

Mercy Medical Center, commonly referred to as “Mercy,” is a member of the Catholic Health Services of Long Island located in Rockville Centre, NY. It is composed of a staff of 1,700, including 700 physicians, the latest technologies, and it is one of Long Island’s newest hospital facilities. It is a 375-bed, not-for-profit hospital servicing the healthcare needs of residents in Nassau County and its surrounding areas. Mercy provides services ranging from physical medicine, oncology, rehabilitation, orthopedics, cardiology, and behavioral health. Additionally, Mercy offers treatment services such as prenatal and pediatric clinics and even a partial hospitalization program for behavioral health. (Mercy Medical Center, 2020)

At the Catholic Health Services which includes Mercy Medical Hospital, their mission statement follows the I-CARE Values. The letters within this system stand for Integrity, Compassion, Accountability, Respect, and Excellence. According to their website,

Catholic Health Services of Long Island, as a ministry of the Catholic Church, continues Christ's healing mission, promotes excellence in care, and commits itself to those in need. CHSLI affirms the sanctity of life, advocates for the poor and underserved, and serves the common good. It conducts its healthcare practice, business, education and innovation

with justice, integrity and respect for the dignity of each person. (CHS Mission, 2020, Mercy Medical Center, para 1.)

The principles of these values are parallel to the AMTA's own Code of Ethics which state:

We, the members of the American Music Therapy Association, hold Kindness, Social Responsibility, Dignity and Respect, Equality, Accountability, Excellence, Integrity, and Courage to be Core Values. These values are reflected in five ethical principles which include (1) respecting the dignity and rights of all, (2) acting with compassion, (3) being accountable, (4) demonstrating integrity and veracity, and (5) striving for excellence.

(AMTA Code of Ethics, 2020, AMTA, para. 1)

### **Music Therapy**

According to the AMTA (2020), "Music therapy is 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" (What is Music Therapy, 2020 AMTA, para. 1). A music therapist is required to hold a bachelor's degree or higher from an AMTA approved academic program. The curriculum is designed to build competencies in three main foundations: clinical, musical, and music therapy. Additionally, students must complete 1,200 hours of clinical training which includes a supervised internship in order to meet the requirements of the bachelor's degree (AMTA, 2020). Following the completion of their degree, music therapists take a national board certification exam to obtain the credential MT-BC (Music Therapist - Board Certified), a necessary requirement for professional practice (AMTA, 2020).

Music therapists assess an individual's physical health, cognitive skills, emotional well-being, social functioning, and communication ability in order to design sessions to meet their specific needs and goals (AMTA, 2020). Music therapy also provides a means of communication for those who may find it difficult to communicate to express themselves with just words and strengthens a client's abilities, which resonate into other areas of their life. (AMTA, 2020).

### **Theoretical Orientation**

Like other health-care related fields, there are various approaches to music therapy treatment. Music therapy approaches have been influenced by such theoretical orientations as psychodynamic, humanistic, neurologic, cognitive behavioral, and biopsychosocial (Dileo, 1977; Knight, 2018). Because medical patients are diverse and unique in their health and their needs, it is also imperative that a music therapist be able to adjust and adapt to meet their individual needs. As such, this requires that music therapists practice from an integrative perspective and maintain competence in an array of music therapy methods. According to Abrams (2010), an integral understanding of evidence-based music therapy offers various conceptions of how music therapy can be provided and assists in honoring the myriad of forms of music therapy can take, honoring the true depth of the field. This understanding allows for clarity of one's own given perspective and stance while also acknowledging the similarities and differences between perspectives.

In developing my own clinical identity, I have embraced the humanistic and biopsychosocial theoretical perspective in my own work and practice. Medical patients have complex needs, and although they may share similar diagnoses with others, the patient's lived

experience is singular. According to Wheeler (2015), in a humanistic approach to music therapy, the patient is regarded as a person first. They are entitled to the basic ethical rights of dignity and respect, regardless of their diagnoses or status. The music therapist seeks to understand the patient within a biopsychosocial model which highlights the multiple developmental aspects of an individual. This allows the therapist to view the different components and influences of the patient's life and how it affects their development (Wheeler, 2015). In the biopsychosocial perspective, music therapy interventions simultaneously affect all aspects of an individual at once (affective, physiological, cognitive, etc.). These domains may not be isolated and treatment in one area will influence the entire person (Dileo, 1997).

### **Music Therapy Methods**

According to Bruscia, (2014), there are four main methods of music therapy: improvisation, re-creative, composition, and receptive. See Table 1 for details on the description of these methods which can be utilized in a therapeutic setting. For more specific variations of these methods, please see Appendices D through G for more detail.

**Table 1**

#### *Methods of Music Therapy*

<b>METHOD</b>	<b>DESCRIPTION</b>	<b>GOALS</b>
<b><i>Improvisation</i></b>	The patient makes up music while playing or singing, spontaneously creating a melody, rhythm, song, or instrumental piece. The patient may improvise alone in a duet, or in a group that includes the therapist, other patients, and sometimes significant others. The patient may use any musical medium within their capabilities	<ul style="list-style-type: none"> <li>-Establish a nonverbal channel of communication and a bridge to verbal communication</li> <li>-Provide a fulfilling means of self-expression and identity formation</li> <li>-Explore various aspects of self in relation to others</li> <li>-Identify, express, and work through difficult emotions</li> <li>-Develop interpersonal or group skills</li> </ul>

METHOD	DESCRIPTION	GOALS
		<ul style="list-style-type: none"> <li>-Develop the capacity for interpersonal respect and intimacy</li> <li>-Develop creativity, expressive freedom, spontaneity, and playfulness within various degrees of structure</li> <li>-Stimulate and develop the senses</li> <li>-Develop perceptual and cognitive skills</li> </ul>
<i>Re-creative</i>	<p>The patient learns, sings, plays, or performs pre-composed music or reproduces any kind of musical form. Also included are structured music activities and games in which the patient performs roles or behaviors that have been specifically defined.</p>	<ul style="list-style-type: none"> <li>-Develop sensorimotor skills</li> <li>-Improve attention and reality orientation</li> <li>-Develop memory skills</li> <li>-Foster adaptive, time-ordered behavior</li> <li>-Promote identification and empathy with others</li> <li>-Experience and release feelings within a safe and appropriate medium</li> <li>-Develop skills in perceiving, interpreting, and communicating ideas and feelings</li> <li>-Learn specific role behaviors in various interpersonal situations</li> <li>-Improve interactional and group skills</li> <li>-Develop a sense of community</li> </ul>
<i>Composition</i>	<p>The therapist helps the patient to write songs, lyrics, or instrumental pieces or to create any form of musical product, such as music videos or audiotapes. Typically, the therapist takes responsibility for the more technical aspects of the process and gauges the patient's participation to their musical capabilities.</p>	<ul style="list-style-type: none"> <li>-Develop skills in creating a structure within which to express one's own thoughts and feelings and/or the thoughts and feelings one shares with others</li> <li>-Develop skills in organizing thoughts and feelings so that they fit within the adopted structure</li> <li>-Develop the ability to explore various ways of expressing thoughts and feelings within the structure</li> <li>-Develop decision-making skills</li> </ul>

METHOD	DESCRIPTION	GOALS
		<ul style="list-style-type: none"> <li>-Promote the exploration of therapeutic themes through lyrics</li> <li>-Develop the ability to integrate and synthesize parts into wholes</li> </ul>
<i>Receptive</i>	<p>The patient listens to music and responds to the experience silently, verbally, or in another modality. The music used may be live or recorded improvisations, performances, or compositions by the patient or therapist or commercial recordings of music literature in various styles (e.g., classical, rock, jazz, country, spiritual, New Age). The listening experience may be focused on physical, emotional, intellectual, aesthetic, or spiritual aspects of the music, and the patient's responses are designed according to the therapeutic purpose of the experience.</p>	<ul style="list-style-type: none"> <li>-Promote receptivity</li> <li>-Evoke specific body responses</li> <li>-Stimulate or relax the person</li> <li>-Develop auditory/motor skills</li> <li>-Evoke affective states and experiences</li> <li>-Explore ideas and thoughts of others</li> <li>-Facilitate memory, reminiscence, and regression</li> <li>-Connect the listener to a community or sociocultural group</li> <li>-Stimulate peak and spiritual experiences</li> </ul>

*Note:* Description and Goals taken from Bruscia (2014)

### Review of Literature

There is much research on the impact of music and music therapy on health and well-being. According to the AMTA (2020), when working with patients with medical needs, music therapy can be used in general hospitals together with anesthesia and medication to alleviate pain. It may also be used to elevate a patient's mood and address symptoms of depression, assist in physical rehabilitation by promoting movement, calm or sedate, induce sleep, and even lower muscle tension for patients to better relax (AMTA, 2020). The following

review explores the extensive research literature and clinical reports published from 2000-2020 regarding the use and effects of music therapy on individuals with varying medical conditions.

The specific topics discussed in this review include the relationship between music therapy and the physical and emotional needs of individuals who have medical conditions including cancer or chronic pain, as well as psychosocial needs such as depression and anxiety. The literature in the review will be organized by need areas that have been addressed by music therapy methods. Please see Table 2 for the benefits of music therapy and their sources.

**Table 2**

*Benefits of Music Therapy (2000-2020)*

<b>Benefit</b>	<b>Sources</b>
Lower perceptions of pain	Fredenburg & Silverman, 2014 Golino et al., 2019 Mandel et al., 2019 Rebecca & Michael, 2020 Whitehead-Pleaux et al., 2007
Decreases symptoms of stress and anxiety	Cassileth et al., 2003 Chuang, Han, Li, & Young, 2010 Crawford, Hogan, & Silverman, 2013 Ettenberger & Ardila, 2018 Giordano et al., 2020 Golino et al., 2019 Hernandez-Ruiz, 2005 Rossetti et al., 2017 Teckenberg-Jansson, 2019 Walworth et al, 2008 Whitehead-Pleaux et al., 2007 Yates & Silverman, 2015 Zhou et al., 2015
Decreases physiological symptoms (heart rate, respiration rate, and blood pressure)	Canga et al., 2015 Chuang, Han, Li, & Young, 2010 Golino et al., 2019 Teckenberg-Jansson, 2019
Improves sleep	Vinayak et al., 2017 Yang et al., 2019

<b>Benefit</b>	<b>Sources</b>
Provides procedural support	Giordano et al., 2020 Gooding et al., 2015 Nelson et al., 2017 Yinger, 2016 Whitehead-Pleaux et al., 2007
Decrease symptoms of depression	Canga et al., 2015 Cassileth et al., 2003 Ettenberger & Ardila, 2018 Yang et al., 2019 Zhou et al., 2015
Improves mood	Burns, 2001 Cassileth et al., 2003 Crawford, Hogan, & Silverman, 2013 Dóro et al., 2016 Haack & Silverman, 2017 Leisuk, 2015 Rebecca & Michael, 2020
Improves quality of life	Burns, 2001 Hilliard, 2003 Rosin & Larsson, 2015 Walworth et al, 2008

### **Music in Medical Settings**

Music interventions, whether provided by a music therapy or another member of the healthcare team, have been demonstrated to be effective in: decreasing pain perception (Golino et al., 2019); decreasing anxiety (Yates & Silverman, 2015); improving mood (Haack & Silverman, 2017) and improving quality of life (Hilliard, 2003). This literature review will focus on the effect of music therapy interventions as opposed to music medicine interventions. Dileo (1999) distinguishes the differences between these two ways of incorporating music interventions in medical settings.

According to Dileo (1999), music medicine is typically used as an adjunct to various situations or treatments by medical personnel (non-music therapists). The interventions of music

medicine are primarily reliant on receptive music experiences using pre-recorded music.

Conversely, music therapy places a greater value in the therapeutic relationship as well as music and utilizes both as healing factors. Not only are the interventions broader in music therapy (receptive, improvisation, composition, re-creation), but there is a focus on the entire treatment process and a wide range of clinical goals (Dileo, 1999).

## **Music Therapy and Physical Needs**

### ***Pain Perception***

Pain is a universal phenomenon which serves as a warning that something is not quite right and may interfere with an individual's well-being, which in turn, affects every aspect of their life (Allen, 2012). Pain perception varies depending on the patient and the situation. Music provides a positive stimulus which may shift a patient's attention away from negative stimuli, transforming their perception into one that is more positive. Music can be a powerful method in distracting patients who are confused, anxious, or may be undergoing procedures (Gooding, 2014).

According to Finnerty (2018), Gate Control Theory is a major working theory of pain that hypothesizes that a large amount of small fibre activity results in an "opening of the gate" which then allows the brain to receive and interpret the impulses as pain. The theory acknowledges that psychological factors such as anxiety, depression, and anxiety can directly affect "opening of the gate." However, music can have a positive effect upon these mechanisms, affecting the transmission of pain through suppressing signals descending from the brain to the spinal cord. Music therapy can be a beneficial intervention which affects the processing speed of pain, modifying gate messages by affecting the individual's mental and emotional state

(Finnerty, 2018). Finnerty (2018) developed three theories of this process: (a) music therapy can influence biological events like memories and emotions, affecting pain perception; (b) music therapy blocks pain messages, providing a healthy distraction to pain and the side effects of pain medication; and (c) music therapy can alleviate symptoms of depression, motivate, decrease anxiety, provide enjoyment, and improve quality of life which results in a decrease in pain perception (pp. 71-72).

Surgery and various medical procedures can be frightening and invasive experiences that may also contribute to a patient's perceptions of pain. Several studies have found that music therapy can decrease patients' symptoms of pain during and after these procedures. Fredenburg and Silverman (2014) examined the impact of music therapy on hospitalized patients recovering from a blood and marrow transplant (BMT). Participants were offered music therapy sessions during which a music therapist provided live music using their voice accompanied by a guitar. They engaged the participant through the patients' preferred music in order to promote active involvement and autonomy support. The authors found that a single 30-minute receptive music therapy session can be an effective intervention for both positive and negative affect, as well as for pain perception for patients hospitalized after BMT (Fredenburg & Silverman, 2014).

Rebecca and Michael (2020) offered music therapy services to adults in a hospital neuroscience unit. They found that participants generally tended to choose receptive music therapy techniques. Patients were offered a choice between three predetermined single session techniques which consisted of (a) listening to preferred music delivered live by the music therapist (receptive music therapy), (b) choosing a song from the a list provided and playing along on an instrument while the therapist accompanied them (active music therapy), and (c)

engaging in a guided relaxation script while listening to a pre-recorded instrumental music piece (guided relaxation). Although there were no significant overall differences between- and within-groups, many of the techniques resulted in positive mood and pain shifts from pre- to post-tests despite the challenges and short duration of single-session treatment. In single session music therapy in the intensive care unit (ICU), Golino et al. (2019) found that participants reported reductions in pain, anxiety, heart rate, and respiratory rate, as measured by the patient's bedside monitor pre- and post-sessions and from patient's self-reports on a Likert scale. The music therapy experiences consisted of a relaxation or "song choice" intervention.

### ***Stress and Anxiety***

Anxiety may stem from anticipation over future events such as upcoming procedures, tests, or diagnosis (Gooding, 2014). Stress and anxiety that manifests in the body can contribute to pain perception. The general hospital can be a stressful environment, filled with foreign sounds, sighs, smells, unusual equipment, and bustling hallways. Additionally, there can be fears associated with procedures, expenses, changes in appearance, separation from loved ones and routine, and the possibility of death. Music therapy offers an alternative stimulus that provides conflicting sensory output leading to improved comfort (Hanson-Abromeit, 2010, pp.188-190).

Crawford (2013) investigated the effects of single music therapy sessions on stress, relaxation, perception, and mood of side effects in hospitalized solid organ transplant recipients and donors. Experimental group patients were offered two intervention choices of either patient's preferred live music or a brief harmonica lesson based on 12-bar blues progressions while others were randomized into a wait-list control group. Patients who chose the harmonica lesson engaged in a performance session with guitar accompaniment by the music therapist. They found

favorable scores of relaxation, stress, and mood in the experimental group, suggesting that music therapy can be an effective psychosocial intervention in reducing stress and anxiety. Rossetti et al. (2017) focused on the impact of music therapy on anxiety in cancer patients who were undergoing simulation for radiation therapy. The music therapy intervention included live guitar music with verbal processing. Their results of the pre-State-Trait Anxiety Inventory questionnaire and Symptom Distress Thermometer showed that music therapy significantly lowered anxiety and distress during simulation procedures.

Zhou et al. (2015) examined the effects of music therapy and progressive muscle relaxation training on anxiety, depression, and length of stay in Chinese female breast cancer patients after radical mastectomy. The intervention group had significant improvements in depression, anxiety, and even a shorter length of hospital stay than the control group. In a randomized effectiveness study, Yates and Silverman (2015) observed the immediate effects of a single music therapy session on patients in a post-surgical oncology unit. Participants randomly assigned to the experimental group were given 20-30 minutes of patient preferred live music. Patients were assessed using a quick mood scale and self-reported pre- and posttests. Results of the study showed statistically significant relaxation scores than in the control group, indicating that music therapy decreased anxiety and increased relaxation following a 20 minute music therapy intervention.

### ***Physiological Symptoms - Heart Rate, Respiration, and Blood Pressure***

Physiological indicators can provide an understanding of a patient's internal condition. Abnormal levels of these indicators can lead to complications for the patient. An increased heart rate may be an indicator of anxiety, discomfort, or distress. Music therapy can have a positive

effect on a patient's physiological outcomes (Gooding, 2014). Teckenberg-Jansson (2019) conducted a study on the effects of live music therapy on heart rate variability (HRV), anxiety, and self-reported stress among hospitalized women with high-risk pregnancies. Participants of the music therapy group received 30 minutes of live music therapy for three consecutive days. They found a decrease of low frequency HRV during the three-day therapy period and a significant decrease of anxiety for women with initial high self-reports.

In a systematic review and meta-analysis, Amaral et al. (2016) examined the effects of music therapy on blood pressure in individuals with hypertension. Results revealed a significant reduction in systolic blood pressure in hypertensive patients who received music therapy in comparison to participants of the control group. Chuang (2010) examined if music therapy affects the activities of sympathetic and parasympathetic nervous systems through indications of HRV parameters. Patients received music therapy sessions consisting of singing, listening to music, performing music, and learning the recorder. Results from ECG monitoring and questionnaires revealed that two hours of music therapy had significantly increased relaxation sensations and significantly decreased fatigue sensations in the treated. Moreover, the HRV parameters displayed sympathetic nervous system activity had decreased and parasympathetic nervous system activity had increased.

Canga et al. (2015) examined the effect of multimodal psycho-music therapy interventions on the respiratory symptoms, quality of life, and psychological well-being in patients with Chronic Obstructive Pulmonary disease and other lung diseases in conjunction with Pulmonary Rehabilitation (PR). Group sessions included music visualization and wind playing and singing. Outcomes were measured by the Beck Depression Inventory Scale 2nd edition-Fast

Screen (BDI-FS), Dyspnea Visual Analog Scale (VAS), and Chronic Respiratory Questionnaire Self Reported (CRQ-SR). Results of the study showed improvements in labored breathing (dyspnea) and fatigue as well as symptoms of depression in the music therapy group. A significant and continued improvement was found in mean scores of the VAS following the fifth session, suggesting that music therapy combined with PR could prove to be effective in managing pulmonary disease which affect a patient's respiration.

### *Sleep*

In a randomized control study, Vinayak et al. (2017) observed the effects of music therapy on sleep quality with cancer patients undergoing treatment. Patients were randomly assigned to three groups: active music therapy, receptive music therapy, and a control group receiving standard care. Those in the music therapy intervention groups engaged in 20-30 minute sessions in a total 10 sessions. Receptive music therapy involved listening to patient-preferred music while active music therapy consisted of singing and playing guitar. Participants completed the Pittsburgh Sleep Quality Index pre- and post-interventions. Results showed that overall, music therapy was effective in improving quality of sleep, and that active music therapy was more beneficial than the receptive interventions.

### **Music Therapy and Emotional Needs**

#### *Procedural Support*

In a medical setting, procedures and surgeries assist in diagnosing and treating diseases and illness. Patients may undergo a wide array of invasive procedures which may lead to negative experiences and symptoms of anxiety or depression, adversely affecting the healing process (Allen, 2012). Music therapy can be an effective non-pharmacological option for patients

with a strong negative response to undergoing procedures (Gooding, 2014). Giordano (2020) examined the influence of music therapy on preoperative anxiety in children with leukemia who were undergoing diagnostic procedures. Participants were assigned to two preoperative groups: one received standard care while the other included music therapy intervention. Anxiety scores were measured with the Modified Yale Preoperative Anxiety Scale. Patients were offered active and receptive music therapy techniques which consisted of the use of various musical instruments, free improvisation, singing and song-writing, and creating/listening to playlists with the music therapist during 15-20 sessions. There were significantly lower preoperative anxiety scores in the music therapy group when compared to the standard care.

A retrospective case series from Gooding et al. (2015) examined preoperative music therapy for pediatric ambulatory surgery patients, which consisted of live re-creative music interventions during which patients played small hand-percussion instruments while a music therapist accompanied the group on a guitar. Data from affect and behavioral observations and two standardized scales (the Modified Yale Preoperative Anxiety Scale and the Child-Adult Medical Procedure Interaction Short-Scale Form), indicated a trend of improvement in affect and emotional expression, which can be considered indicators of anxiety reduction. Parents of the patients reported improved levels of distress and anxiety in their children, and that they too felt benefit from the music intervention.

Whitehead-Pleaux et al. (2007) assessed the effects of music therapy on the pain and anxiety of pediatric burn patients during nursing procedures. Music therapy interventions were administered by a music therapist on guitar and included receptive listening of familiar songs and improvisations of songs supporting patients during procedures. Data was collected through

qualitative interviews and measurement tools using the Wong Baker FACES Scale and Nursing Assessment of Pain Index and results indicated a reduction of pain, anxiety, and behavioral distress. Nelson et al. (2017) examined the effects of music-assisted relaxation and postoperative music therapy on adolescents undergoing spinal surgery. Participants of the experiment watched a 12-minute video developed by music therapists of the research team about music-assisted relaxation. Afterwards, they were offered a chance to practice the intervention before surgery. Results from self-reports on a numeric rating scale and behavioral observations showed a significant reduction of pain and anxiety after music therapy intervention. Through a randomized controlled study, Yinger (2016) found that music therapy was effective for procedural support for children receiving immunizations. The incorporation of singing songs, playing instruments, and implementing cognitive-behavioral techniques led to improvements in coping and distress behaviors of children in comparison to the control group.

### ***Depression***

Hospitalizations or prolonged medical stays can trigger signs of depression which in turn, may affect the patient's health outcomes and recovery time (Gooding, 2014). A systematic review and meta-analysis by Yang et al. (2019) examined the effectiveness of music therapy for postpartum depression. Data from continuous data and binary data assessments indicated significant differences in depression as well as areas like pain, sleep, and satisfaction between the experimental (music therapy) and control group improving symptoms of depression. In a mixed-methods pilot study, Eddenberger and Ardila (2018) examined the impact of music therapy songwriting on depression, anxiety, bonding levels, and mental wellbeing with mothers of preterm babies in the neonatal intensive care unit. Data was collected using the Mother-to-Infant

Bonding Scale (MIBS), the Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS), Hospital Anxiety and Depression Scale (HADS), and through semi-structured interviews. Results from the study indicated favorable effects of the intervention for all outcome measures. The qualitative analysis revealed that music therapy songwriting could be a way for parents to creatively express their thoughts and emotions as well as promote relaxation.

### ***Mood***

During hospitalizations, patients may experience changes in levels of functioning, social contact, and support systems resulting in problems such as feelings of hopelessness, helplessness, fatigue, and reduction of self esteem. A music therapist can utilize music techniques to address a variety of needs and effectively elevate a patient's mood. (Dileo, 1999). In a randomized pilot study on patients of a solid organ transplant unit, Haack and Silverman (2017) observed the effects of receptive music therapy, specifically guitar accompaniment of patient-preferred music, on mood and pain. Participants receiving the intervention indicated more favorable mood means than patients of the control group. Dóro et al. (2016) examined the relationship between receptive music therapy interventions and the mood of patients undergoing hematopoietic stem cells transplantation. Patients received live music and results proved music therapy significantly improving mood.

Leisuk (2015) researched the effects of mindfulness-based music therapy (MBMT) on mood and attention in women with breast cancer receiving adjuvant chemotherapy. Participants received one-hour individual sessions with interventions consisting of varied music experiences. Their findings revealed significant decreases of fatigue and improvements of attention and mood. Cassileth et al. (2003) examined the effects of music therapy on mood disturbance with patients

hospitalized for autologous stem cell transplantation. Patients received live music therapy in individual sessions. Results of the study not only found lower total mood disturbances scores, but also lower scores on the combined Anxiety/Depression scale compared with those in the control group.

### ***Quality of Life***

Elevated levels of emotional distress may negatively impact a patient's immune and endocrine functions as well as even decrease life quality (Burns, 2001). Music therapy is able to address a patient's needs and utilize interventions to improve their quality of life. Rosin and Larsson (2015) observed the effects of music therapy on quality of life and body function on chronic stroke survivors and patients with Parkinson's Disease. Participants engaged in music therapy groups of re-creative improvisations. Both groups reported an improved social life, concentration, and improved self-esteem after music therapy.

Walworth et al. (2008) examined the effects of live music therapy sessions on quality of life indicators for patients undergoing brain surgery. Experimental participants received live and interactive music sessions and found statistically significant differences for four of the six quality of life measures: anxiety, perception of hospitalization, relaxation, and stress compared to the control group. Hilliard (2003) researched the effects of music therapy on the QOL of individuals diagnosed with terminal cancer. QOL was measured by the Hospice Quality of Life Index-Revised (HQOLI-R) and a self-report measure taken every visit. Results revealed that those participating in music therapy had higher QOL and their levels increased over time following more sessions. Participants in the control group, however, displayed lower QOL that decreased over time.

The Bonny Method of Guided Imagery and Music (GIM) is a model of music therapy which may be utilized in a medical setting. The focus of the intervention focuses on the conscious utilization of images that arise in response to music or a formalized program of relaxation (Dileo, 1999). Burns (2001) explored the effectiveness of GIM in improving the quality of life in cancer patients and alleviating mood disturbances. Experimental participants engaged in 10 individual weekly sessions of GIM. Participants completed pre- and posttest Profile of Mood States (POMS) and Quality of Life - Cancer (QOL-CA) questionnaires and during a six-week follow up. Those who participated in GIM sessions scored better on both mood and quality of life scores compared to the control group. Additionally, the scores continued to improve even after sessions were completed.

### **Proposed Music Therapy Program**

In order to provide the most effective, efficient, and beneficial treatment of care, there would ideally be a team of music therapists to address the maximum number of patients throughout Mercy Medical Hospital. However, as a newly developed program, this proposal will focus on the addition of a single music therapist to deliver treatment across all hospital units. Table 3 presents an example of a weekly schedule for a music therapist providing services within a medical setting.

**Table 3***Proposed Weekly Schedule*

<b><u>MONDAY</u></b>	<b><u>TUESDAY</u></b>	<b><u>WEDNESDAY</u></b>	<b><u>THURSDAY</u></b>	<b><u>FRIDAY</u></b>
8:00-9:00 Morning Meeting	8:00-9:00 Morning Meeting	8:00-9:00 Morning Meeting	8:00-9:00 Morning Meeting	8:00-9:00 Morning Meeting
9:00-11:30 Individual Sessions	9:00-11:30 Individual Sessions	9:00-11:30 Individual Sessions	9:00-11:30 Individual Sessions	9:00-11:30 Individual Sessions
11:30-12:00 Documentation	9:30-10:00 Documentation	9:30-10:00 Documentation	9:30-10:00 Documentation	9:30-10:00 Documentation
12:00-12:30 Lunch	12:00-12:30 Lunch	12:00-12:30 Lunch	12:00-12:30 Lunch	12:00-12:30 Lunch
12:30-1:00 Group Session				
1:00-1:30 Documentation	1:00-1:30 Documentation	1:00-1:30 Documentation	1:00-1:30 Documentation	1:00-1:30 Documentation
1:30-4:00 Individual Sessions	1:30-4:00 Individual Sessions	1:30-4:00 Individual Sessions	1:30-4:00 Individual Sessions	1:30-4:00 Individual Sessions
4:00-4:30 Documentation	4:00-4:30 Documentation	4:00-4:30 Documentation	4:00-4:30 Documentation	4:00-4:30 Documentation
4:30-5:00 Supervision/Post -meeting	4:30-5:00 Supervision/Post -meeting	4:30-5:00 Supervision/Post -meeting	4:30-5:00 Supervision/Post -meeting	4:30-5:00 Supervision/Post -meeting

**Session Format**

Music therapy can be delivered individually as well as in group sessions. Recommending individual or group sessions is dependent on various factors such as the overall goals and objectives for patients, the types of interventions being used, and the disposition and needs of the patient (Bruscia, 2014). Individual sessions allow for more one-on-one attention and patients are able to address more specific needs. On the other hand, group therapy invites patients to address issues among peers, encouraging more social interaction and community among peers. In some

cases, it may be important for patients to receive individual therapy in order to establish a relationship with the therapist and build comfort and rapport before beginning group therapy.

### **Financial Implications**

Music therapy is proven to provide benefit to patients in the medical setting, and is a cost-effective means of treatment. As a non-pharmacological intervention, music therapy does not require prescriptions or medications and can be an effective tool in reducing pain and anxiety without the use of analgesics. In a comparative analysis study, Walworth (2005) examined the cost-effectiveness of music therapy as a procedural support. Results indicated that when music therapy was included with medical procedures, there was an 80.7% success rate for pediatric scan completion without sedation, and a 94.1% success rate for all other procedures, reduced procedural times, and decreased the number of staff present for procedures. Bates et al. (2017) found that music therapy patients required significantly lower doses of morphine and less medication for narcotic pain from high-dose chemotherapy when compared to patients in their control group.

### ***Budget***

The cost of developing this program would be higher in the first year in order to establish the necessary equipment to implement the program, and then would decrease in subsequent years. Necessary expenses are employee salary, employee benefits, and equipment. Music therapists' salaries vary based on such factors as location, setting, population, experience, and training. In 2019, the average annual salary of a full time music therapist in a general hospital in the state of New York was \$58,268 (AMTA, 2020). Music therapy students pursue graduate degrees to acquire advanced competence and intense clinical training.

Music therapists in a medical setting work with patients at difficult, meaningful, and significant moments of their lives. This requires competent treatment in an urgent manner without certainty of the following session. Dileo (2015) notes that entry-level music therapists may provide limited treatment at basic or supportive levels, the clinical issues in a medical setting require advanced practitioners who can offer the greatest scope of treatment, advanced knowledge and skills, coupled with expert musicianship while maintaining self-awareness and reflexivity. Without these skills, music therapy can prove to be superficial, ineffective, and quite possibly even harmful to patients (Dileo, 2015). As such, a graduate level music therapist would indicate a higher starting salary for this level of education. Please see Table 4 for the projected yearly expenses.

**Table 4**

*Projected Yearly Expenses*

Music therapist salary (New York)	\$58,268/year
Estimated Benefits (e.g., health, dental, vision, retirement)	\$20,000/year
Updated books, sheet music, and instruments repairs/replacements	\$500/year
Instrument and equipment maintenance	\$500/year
AMTA membership/training/continuing education/conference	\$250/year - (membership) \$2000/year - (conference attendance) \$1000/year (continuing education)
<b>TOTAL</b>	<b>\$82,518/year</b>

A music therapist utilizes music as the means to communicate with and address a patient's needs. Just as there are numerous medical tools each used for a different situation, a music therapist may utilize various instruments to address an assortment of clinical needs and

physical considerations. While there are various price points for instruments, higher quality instruments not only require less repairs and replacement, but also provide a greater authenticity for improved participation. Table 9 presents a projection of initial expenses to launch the program, and Table 5 presents items that would be beneficial if the budget allows.

**Table 5**

*Required Initial Expenses*

Portable Keyboard: <u>Yamaha PSRE263 Professional Bundle (includes Double X Style Stand, Large sized X style Bench, Piano style sustain pedal and upgraded headphones.</u>	\$284.94
Music Stand: <u>West Music Wire Music Stand with Bag</u>	\$9.99
Steel Stringed Guitar: <u>Yamaha CGS104A Classical Guitar</u>	\$139.99
<sup>3</sup> / <sub>4</sub> Nylon Stringed Guitar: <u>Amigo AM30 3/4 Size Classical Guitar</u>	\$129.99
Guitar Straps (2): <u>Levy's M8POLYL-BLK Guitar Strap, Black</u>	\$11.98 (\$5.99 each)
Percussion: <u>Remo Drums, Tambourine, &amp; CD Percussion Set</u>	\$109.95
Djembe: <u>Toca TFCDJ-7MS Freestyle Colorsound 7 Djembe Set</u>	\$249.99
Ocean Drum: <u>Remo ET-0212-10 12" Ocean Drum Fish Graphic</u>	\$47.50
Egg shakers (12 set): <u>Basic Beat BB201 Egg Shaker</u>	\$21.60 (\$1.95 each)
Movement Scarves: <u>West Music WM27S 27" Hemmed Scarves</u>	\$29.95
Bean Bags: <u>Bear Paw Creek Cloth Bean Bags</u>	\$25.95
Hohner Kids MTS-25 Rhythm Instrument Package Contents: <u>2 pair - Sand Blocks 2 - Single Jingle Taps 2 - Crow Sounders 1 - Two-Tone Sounder 2 pair - 5" Cymbals 2 - Ankle Bells 4 - Wrist Bells 4 pair - Rhythm Sticks 1 - 4" Triangle 1 - 6" Triangle 1 pair - Hardwood Claves 1 - Handle Sleigh Bell 2 - Soprano Sounders 1 - Activity Book (Rhythms, Rhymes &amp; Songs by Margaret Hurley Marquis)</u>	\$159.99
iPad: <u>Apple – iPad (Latest Model) with Wi-Fi – 32GB - Silver</u>	\$329.00
<b>TOTAL:</b>	<b>\$1,550.82</b>

**Table 6***Optional Initial Expenses*

Boomwhackers: <u>Boomwhackers BWDG 8-Note C Major Diatonic Set</u>	\$21.95
Ukulele: <u>Makala MK-S/PACK Soprano Ukulele Package</u>	\$67.99
Xylophone: <u>Sonor Primary SXP 1-1 Soprano Xylophone</u>	\$430.00
Glockenspiel: <u>Sonor Global Beat GS GB Soprano Glockenspiel</u>	\$105.00
Bongos: <u>Basic Beat BB271 6"-7" Key-Tuned Bongos</u>	\$64.95
Cabasa: <u>Basic Beat BB07L Standard Cabasa</u>	\$24.95
Electric Guitar: <u>Squier® Stratocaster® Pack 10G with Gig Bag, Laurel Fingerboard, Black</u>	\$219.99
Guitar Amplifier: <u>Fender® Mustang™ I V.2 20-Watt Combo Guitar Amplifier</u>	\$139.99
Instrumental Cable: <u>Rapco PROformance PRP-20 Instrument Cable, 20 Feet</u>	\$17.95
<b>TOTAL:</b>	<b>\$1,092.77</b>

**Larger Facility Context**

In a treatment setting such as a hospital, the interprofessional team of clinical staff consists of physicians, nurse practitioners, physical therapists, occupational therapists, speech-language pathologists, social workers, registered nurses, licensed practical nurses, certified nursing assistants, and pharmacists (Gooding, 2014). As a part of this team, music therapists can work collaboratively with staff members to provide meaningful and beneficial treatment for patients. Through cooperation, music therapists and staff may share insight and unique perspectives to better address the needs of their patients. By working together, credentialed music therapists can be beneficial in providing safe, cost-effective means of managing a patient's pain (Golino et al., 2019), anxiety (Walworth et al., 2008), providing procedural support (Giordano et al., 2020), decreasing symptoms of depression (Canga et al., 2015), improving mood (Cassileth et al., 2003), and improving quality of life (Rosin & Larsson,

2015). They can also assist in easing nurse workload, improve patient outcomes, and serve as an enjoyable adjunct therapeutic modality (Palmer et al., 2016).

Music therapy has been found to be positively regarded by medical staff. Giordana (2020) found that 90% of medical staff reported satisfaction with the use of music therapy and found it assisted in supporting their work. Mandel et al. (2019) found that 92% of emergency medical staff would be likely to recommend music therapy sessions for future patients, and 80% reflected that the music therapist's practice improved their overall caregiving experience. Integration and coordination of professional services may alleviate anxiety and frustration for both patients as well as medical staff. Co-treatment may increase understanding and awareness of respective professions, contributing knowledge of patients and their family from different perspectives (Hanson-Abromeit, 2010). When working in a medical setting, the music therapist would attend the appropriate morning meetings to familiarize and receive status updates of the patients with whom they provide treatment.

### **Outcomes and Assessment**

Because this program is designed to begin with one music therapy serving the entire hospital, collaboration and communication will be vitally important to identify patients who may benefit from music therapy. As the program is established, it is recommended that in-service training be offered to all staff within the hospital by the music therapist in order to educate about the benefits of music therapy, and to communicate referral procedures. It is proposed that all members of the interdisciplinary team will be able to make referrals for music therapy by using a standardized referral form. Please see Appendix D for an example of a referral form. In order to

provide effective service, the music therapist will consult with the patient's primary care nurse to gather more information regarding the patient (Hanson-Abromeit, 2010).

The music therapist will conduct a music therapy assessment after the referral. The information gathered is designed to assist the music therapist systematically determine a client's current level of functioning across different domains which includes cognition, motor and sensory functioning, emotional skills, and communication. This in turn will allow the music therapist to create goals based on the client's strengths and areas of need. An assessment also allows the music therapist to collect information about a client's musical history and preferences which helps tailor sessions and interventions to reflect the client (Knight et al., 2018). Appendix H contains a proposed music therapy assessment form.

After individual and group music therapy sessions, clinical outcomes can be measured using rating forms, surveys, or other standardized measurement tools from the music therapy program and hospital. Pre/post music therapy intervention forms may be used to evaluate non-pharmacological pain and anxiety reduction (Hanson-Abromeit, 2010). Generally, progress notes are completed to convey what was accomplished following music therapy sessions (Polen et al., 2017). This would be documented following the individual preferences of the hospital and would preferably be on an electronic medical record where other health care staff could access the information. A sample clinical outcome measurement form is presented in Appendix I.

### **Conclusion**

Music therapy is able to offer patients a distinctive approach in addressing their health and well-being. It is cost-effective and a suitable adjunct for pharmacological interventions which make it beneficial in a medical setting. Due to the collaborative nature of music, it is able to

assist individuals of different backgrounds regardless of age, culture, gender, ethnicity, or socioeconomic status. The diverse and adaptable interventions of music therapy helps to meet the specific needs of clients in all areas of function; cognitive, physical, emotional, behavioral, and social. In the healthcare profession, the client and their success is the most important focus. Music therapy presents an enjoyable and unique form of healthcare that allows for creative expression while also able to accomplish a range of goals and objectives, thus providing a unique experience and perspective in any setting.

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## **Appendix A**

### **Music Therapy Fact Sheet**

#### **What is music therapy?**

Music therapy is an evidence-based, clinical practice which uses music interventions in order to accomplish goals specific to an individual within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program (AMTA, 2020). Music therapy uses music to address the cognitive, physical, emotional, and social needs of individuals. A qualified music therapist provides interventions which include listening to, singing, and moving to music after assessment of a client's needs and strengths. The therapeutic use of music assists clients in strengthening their abilities and provides methods of communication beneficial to those who may find it difficult to express themselves verbally (AMTA, 2020).

#### **How can one become a music therapist?**

Music therapists earn a bachelor's degree or higher in a music therapy program that is approved by the American Music Therapy Association (AMTA). Curriculum coursework for music therapy includes music, music therapy, psychology, social and behavioral sciences, biology, and general studies. Trainees complete a minimum of 1200 hours of clinical training through fieldwork and internship in healthcare and other facilities in order to develop skills in the entire therapeutic process. After successful completion of coursework and clinical training, individuals must pass a board-certification exam administered by the Certification Board for Music Therapists (CBMT) in order to earn the credential MT-BC (AMTA, 2020)

#### **What populations do music therapists work with?**

Music therapists can work with people of all ages from children to adolescents, adults, and the elderly. Populations which can benefit from music therapy include individuals with developmental or learning disabilities, brain injuries, physical disabilities, substance abuse, age related conditions, and mothers in labor (AMTA, 2020). Some of the different settings music therapists are able to work in include medical hospitals, psychiatric hospitals, rehabilitative facilities, hospice programs, schools, outpatient clinics, agencies for individuals with developmental disabilities, and private practice (AMTA, 2020)

### **What does a music therapy session look like?**

Because music therapists serve a variety of individuals with many varying types of needs, there is no such thing as a typical session. Sessions are designed and music is selected based on the individual client's treatment plan (AMTA, 2020), and can occur in either individual or group formats. Music therapy sessions are organized to help assist patients attend to their current needs and goals. They may include more than one form of music therapy intervention and may be structured to the individual.

### **Do you have to be a musician in order to participate in music therapy?**

Music therapy is open to all individuals regardless of musical skill. As a universal language, music can be understood and appreciated by most individuals and does not require the ability to play instruments for one to participate in sessions. Furthermore, musical skills may always be taught and a competent music therapist will always be able to structure sessions to meet the individual needs and abilities of participants.

Adapted from AMTA (2020)

## Appendix B

### Resume

Andrew Wong

#### WORK HISTORY

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- Tops Friendly Markets, Stock Clerk (09/2018 to 03/2019)
- Amerasia Bank, Flushing, NY, Intern (Summer 2015-2019)
- Lifetime Fitness – Syosset, NY, Service Staff (06/2015 to 08/2015)
- Vector Marketing – Levittown, NY, Marketing Representative (06/2015 to 08/2015)
- King Kullen – Syosset, NY, Customer Service/Cashier (10/2013 to 03/2014)

#### EDUCATION

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- SUNY New Paltz – Master of Science in Music Therapy (Current; May 2020 Graduation)
- SUNY New Paltz – Bachelor of Science – Contemporary Music (June 2018)
- Syosset Senior High School; graduated with Honors (June 2014)

#### CLINICAL EXPERIENCE

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- Health Alliance of the Hudson Valley – Supervisor: Carolyn Lieberman, MT-BC, LCAT (Fall 2019-Spring 2020)
- Hudson Valley Hospice – Supervisor: Elisa Parker, MS, HPMT, MT-BC (Spring 2019)
- Wildwood School – Supervisor: Mark Ahola, MT-BC (Fall 2018)
- Woodland Pond (60 Hours) – Supervisor: Cynthia Carangelo-Cooper, MT-BC (Spring 2018)

#### AWARDS AND HONORS

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- Steinway NY Competition, 3<sup>rd</sup> Place Medalist in Piano Solo Performance
- All City/State NYSMMA
- SUNY New Paltz Dean's List: Fall 2016 – Spring 2018

#### EXTRACURRICULARS

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- Vice President of Male Call (New Paltz All Male a Capella group) – Spring 2018
- Member (Spring 2014-Spring 2018)
- Musical Director of Epic Glee (New Paltz Show Choir) – Spring 2018

- Member (Fall 2014-Spring 2018)
- Miami Theatre Players Cast Member
  - Pippin (Fall 2017) – Theo
  - Spring Awakening (Spring 2017) – Ernst Noble

## SKILLS

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- Playing acoustic guitar, drums, electric bass, violin, ukulele, piano
- Transcribing and arranging sheet music
- Beatboxing
- Proficient in Microsoft Word and PowerPoint

## Appendix C

### Annotated Bibliography

- Bates, D., Bolwell, B., Majhail, N. S., Rybicki, L., Yurch, M., Abounader, D., Kohuth, J., Jarancik, S., Koniarczyk, H., Mclellan, L., Dabney, J., Lawrence, C., Gallagher, L., Kalaycio, M., Sobecks, R., Dean, R., Hill, B., Pohlman, B., Hamilton, B. K., & Gerds, A. T. (2017). Music therapy for symptom management after autologous stem cell transplantation: Results from a randomized study. *Biology of Blood and Marrow Transplantation*, 23(9), 1567–1572. doi: 10.1016/j.bbmt.2017.05.015
- In a prospective, randomized study, Bates et al. examined the use of music therapy for symptom management for patients with multiple myeloma or lymphoma undergoing an Autologous Stem Cell Transplantation. Participants were randomized into two groups with the experimental participating in interactive music therapy for two sessions a day on two separate days during treatment. Perceptions of nausea and pain were measured using a visual analog scale and patients' mood in response to surgery was assessed with the Profile of Mood States (POMS). Participants of the music therapy group used significantly less narcotic pain medication, specifically fewer morphine equivalent doses (median, 24 mg versus 73 mg;  $P = .038$ ) compared to those in the control group.
- Burns, D. S. (2001). The effect of the Bonny Method of Guided Imagery and Music on the mood and life quality of cancer patients. *Journal of Music Therapy*, 38(1), 51–65. doi: 10.1093/jmt/38.1.51

This study explored the effects of the Bonny Method of Guided Imagery and Music (GIM) in improving quality of life and alleviating disturbances of mood in patients with cancer. Eight volunteers were randomly assigned to an experimental and control group. Participants of the experimental group participated in weekly individual GIM sessions for a total of 10 sessions. Participants filled the Quality of Life-Cancer (QOL-CA) and Profile of Mood States (POMS) questionnaires pre- and post-test as well as during a six-week follow up. Those who participated in the GIM sessions rated higher quality of life and mood scores compared to those of the control group. Furthermore, their scores continued to improve even after sessions had completed.

Canga, B., Azoulay, R., Raskin, J., & Loewy, J. (2015). AIR: Advances in respiration – Music therapy in the treatment of chronic pulmonary disease. *Respiratory Medicine*, *109*(12), 1532–1539. doi: 10.1016/j.rmed.2015.10.001

This randomized control study observed the effects of a multimodal psycho-music therapy intervention on respiration as well as the psychological well-being and quality of life for patients with Chronic Obstructive Pulmonary Diseases and other lung diseases. Music therapy sessions met weekly for six weeks. The interventions included wind playing and singing, and music visualization. Outcomes were measured by the Beck Depression Inventory Scale 2nd Edition-Fast Screen (BDI-FS), Dyspnea Visual Analog Scale (VAS), and Chronic Respiratory Questionnaire Self-Reported (CRQ-SR). Results showed improvements in symptoms of depression ( $p = 0.007$  LS mean  $-0.2$ ), fatigue ( $p = 0.01$  LS mean  $0.3$ ), dyspnea ( $p = 0.01$  LS mean  $0.5$ ), and mastery ( $p = 0.06$  LS mean  $0.5$ ) in the music therapy group.

Cassileth, B. R., Vickers, A. J., & Magill, L. A. (2003). Music therapy for mood disturbance during hospitalization for autologous stem cell transplantation. *Cancer*, *98*(12), 2723–2729. doi: 10.1002/cncr.11842

This randomized controlled trial examined the effects of music therapy for mood disturbance with patients hospitalized for autologous stem cell transplantation. Patients were randomized to music therapy and control groups. Those in the music therapy group received live music therapy from experienced music therapists. Sessions were typically 20-30 minutes and consisted of receptive listening and improvisation. Outcomes were measured by the short form of the Profile of Mood States (POMS). Results of the study showed that participants of the music therapy group scored 37% lower ( $P = 0.01$ ) in their mood disturbance scores and 28% lower ( $P = 0.065$ ) on the combined Anxiety/Depression scale.

Chuang, C.-Y., Han, W.-R., Li, P.-C., & Young, S.-T. (2010). Effects of music therapy on subjective sensations and heart rate variability in treated cancer survivors: A pilot study. *Complementary Therapies in Medicine*, *18*(5), 224–226. doi: 10.1016/j.ctim.2010.08.003

In a pilot study Chuang et al. examined the effects of music therapy on subjective sensations and heart rate variability (HRV) with survivors of cancer. The study aimed to determine whether music therapy would affect sensations of relaxation, comfort, and fatigue. Twenty-three patients received music therapy in two-hour sessions which consisted of listening to music, performing music, singing, and learning the recorder. Outcome measures were assessed using subjective sensations and electrocardiogram

before and after sessions. The results displayed significant increases in sensations of relaxation and significant decreases in fatigue. They also found decreased sympathetic nervous symptom activity as well as increased parasympathetic nervous system activity.

Crawford, I., Hogan, T., & Silverman, M. J. (2013). Effects of music therapy on perception of stress, relaxation, mood, and side effects in patients on a solid organ transplant unit: A randomized effectiveness study. *The Arts in Psychotherapy, 40*(2), 224–229. doi: 10.1016/j.aip.2013.02.005

This randomized effectiveness study observed the effects of music therapy on perceptions of stress, mood, relaxation, and side effects with organ transplant patients. Participants were randomly assigned to an experimental and control group. In the music therapy group, individuals were offered a choice between a brief harmonica lesson followed by a blues performance session accompanied by guitar or patient-preferred live music. Pre- and posttest data was collected using four separate 10-point Likert-Type Scales in which “1” represented a desired condition and “10”, and undesired condition. There were significant post-test differences in stress ( $p = 0.36$ ), mood ( $p < .001$ ), and relaxation ( $p < .001$ ) scores, with the music therapy group receiving more favorable scores when compared to the control group.

Dóro, C. A., Neto, J. Z., Cunha, R., & Dóro, M. P. (2016). Music therapy improves the mood of patients undergoing hematopoietic stem cells transplantation (controlled randomized study). *Supportive Care in Cancer, 25*(3), 1013–1018. doi: 10.1007/s00520-016-3529-z

In a randomized controlled study, Dóro et al. examined the relationship between music therapy and the mood of patients undergoing hematopoietic stem cells transplantation.

Participants were randomly assigned to an experimental music therapy group and control group. Those in the experimental group received 30-minute individual music therapy sessions twice a week, which consisted of live music and improvisation focused on rhythmic production. The Visual Analog Scale (VAS) measured the mood, pain, and anxiety levels of patients. They found music therapy to be a strong ally in treating patients and a statistically significant improvement of mood in patients of the music therapy group.

Ettenberger, M., & Ardila, Y. M. B. (2018). Music therapy song writing with mothers of preterm babies in the neonatal intensive care unit (NICU) – A mixed-methods pilot study. *The Arts in Psychotherapy, 58*, 42–52. doi: 10.1016/j.aip.2018.03.001

This mixed-methods pilot study measured the impact of music therapy songwriting on mental wellbeing, depression, anxiety levels, and bonding with mothers of preterm babies in the NICU. Quantitative outcomes measures were collected using the Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS), the Hospital Anxiety and Depression Scale (HADS), and the Mother-to-Infant Bonding Scale (MIBS) and the qualitative data was gathered from semi-structured interviews which were thematically analyzed. Results from the study supported the use of music therapy songwriting as a creative way for parents of preterm babies to express their thoughts and emotions as well as promote relaxation, communication, and parental skills. The data also suggested music therapy songwriting may be an effective method especially for mothers with higher depressive symptoms and anxiety levels.

Fredenburg, H. A., & Silverman, M. J. (2014). Effects of music therapy on positive and negative affect and pain with hospitalized patients recovering from a blood and marrow transplant: A randomized effectiveness study. *The Arts in Psychotherapy, 41*(2), 174–180. doi: 10.1016/j.aip.2014.01.007

This randomized effectiveness study observed whether receptive music therapy could improve the emotional experience and pain for patients hospitalized after a blood and marrow transplantation (BMT) procedure. A total of 32 participants were randomly assigned to an experimental and wait-list control condition and completed the Likert-type Pain Scale and Positive and Negative Affect Schedule Short Form version, before and after sessions. Patients were offered patient-preferred live music in individual receptive music therapy sessions. Results from their study indicated significant differences between groups with the experimental participants having more favorable scores in negative and positive affect and pain. This supported the idea that a single receptive music therapy session can be effective as an intervention regarding both negative and positive affect and pain for patients hospitalized undergoing BMT.

Giordano, F., Zanchi, B., Leonardis, F. D., Rutigliano, C., Esposito, F., Brienza, N., & Santoro, N. (2020). The influence of music therapy on preoperative anxiety in pediatric oncology patients undergoing invasive procedures. *The Arts in Psychotherapy, 68*, 101649. doi: 10.1016/j.aip.2020.101649

This study examined the influence of music therapy on preoperative anxiety in children with leukemia undergoing diagnostic procedures. Participants were divided into experimental and control groups. The control group only received standard care while the

other included music therapy intervention. Sessions were approximately 15-20 minutes in length. Patients were offered a choice between active and receptive music therapy techniques which included using various musical instruments, free improvisation, singing and song-writing, and creating/listening to playlists. The Modified Yale Pre-operative Anxiety scale was used to assess outcome measures. The results indicated significantly lower preoperative anxiety scores in the music therapy group, supporting the use of music therapy as a complementary intervention in the reduction of anxiety during anaesthesia induction. Additionally, interviews were conducted with the medical staff who expressed positive attitudes towards music therapy.

Golino, A. J., Leone, R., Gollenberg, A., Christopher, C., Stanger, D., Davis, T. M., Meadows, A., Zhang, Z., & Friesen, M. A. (2019). Impact of an active music therapy intervention on intensive care patients. *American Journal of Critical Care*, 28(1), 48–55. doi: 10.4037/ajcc2019792

This study examined the effects of active music therapy interventions on physiological parameters and self-reported anxiety and pain levels in patients on an intensive care unit. Participants engaged in 30-minute music therapy sessions which consisted of a live music “song choice” intervention and lyric discussion or relaxation/guided imagery intervention. Vital signs taken by the music therapist and self-reports of pain and anxiety levels of patients using a Likert Scale, were recorded before and after interventions. The results showed significant decreases in heart rate, respiratory rate, self-reported pain, and anxiety levels. The results of the study support the use of active music therapy as a non-pharmacological intervention for patients in an intensive care unit.

Gooding, L. F., Yinger, O. S., & Iocono, J. (2015). Preoperative music therapy for pediatric ambulatory surgery patients: A retrospective case series. *Music Therapy Perspectives*, 34(2), 191–199. doi: 10.1093/mtp/miv031

This retrospective review examined the effects of preoperative music therapy for pediatric patients undergoing ambulatory surgery. Music therapy interventions were adapted to meet each patient's individual needs and included interventions such as re-creative music playing where a music therapist sang and played guitar while participants were invited to sing or play along on small hand percussion. Responses were documented using the Modified Yale Preoperative Anxiety Scale (YPAS-m) and the Child-Adult Medical Procedure Interaction Scale-Short Form (CAMPIS-SF). The data collected indicated improvement in patient's emotional expression and affect, both indicators of anxiety reduction. Additionally, parents reported that music therapy not only helped reduce distress and anxiety in their children, but was also beneficial to them and improved perceptions of the facility.

Haack, B., & Silverman, M. J. (2017). Effects of guitar accompaniment style within patient preferred live music on mood and pain with hospitalized patients on a solid organ transplant unit: A three group randomized pilot study. *The Arts in Psychotherapy*, 52, 32–40. doi: 10.1016/j.aip.2016.09.005

This randomized pilot study observed the effects of guitar accompaniment within patient preferred live music (PPLM) on pain and mood levels with patients on a solid organ transplant unit. Outcomes were measured using the Quick Mood Scale and 10-point Likert-Type Scales. Participants were randomly divided into three groups consisting of

(a) PPLM with simple accompaniment, (b) PPLM with complex accompaniment, and (c) a wait-list control group. Patients engaged in a receptive music therapy experience which involved patient-preferred live music that was performed by a qualified music therapist. There were significant differences between group differences between control and both simple ( $p = 0.015$ ) and complex ( $p = 0.049$ ) accompaniment groups in posttest measures of relaxed/anxious. Participants of the music therapy groups had more consistently favorable mood means than those in the control group.

Hilliard, R. E. (2003). The effects of music therapy on the quality and length of life of people diagnosed with terminal cancer. *Journal of Music Therapy*, 40(2), 113–137. doi: 10.1093/jmt/40.2.113

This study evaluated the effects of music therapy on physical status, length of life in care, and overall quality of life with patients in hospice. Music techniques were adapted to address the needs of patients and included song choice, live music listening, lyric analysis, song parody, instrumental playing, and music-assisted supportive counseling. Data was collected using the Hospice Quality of Life Index-Revised (HQOLI-R), a self report measure taken during each visit. The results of the study revealed significant differences on self-report quality of life scores between groups. Those in the music therapy group showed an increase of quality of life over time as they continued to participate in music therapy. For participants in the control group, a lower quality of life was experienced and decreased over time.

Lesiuk, T. (2015). The effect of mindfulness-based music therapy on attention and mood in women receiving adjuvant chemotherapy for breast cancer: A pilot study. *Oncology Nursing Forum*, 42(3), 276–282. doi: 10.1188/15.onf.276-282

This study explored the effectiveness of mindfulness based music therapy (MBMT) on attention and mood distress with women receiving adjuvant chemotherapy for breast cancer. Participants engaged in weekly, one-hour MBMT sessions for four weeks consisting of music experiences focused on mindfulness and mental strategies to enhance awareness in the moment. Primary outcome measures included the Conners Continuous Performance Test II to measure attention, and the Profile of Mood States-Brief Form to measure mood. The findings of the study revealed significant improvements in attention over time while mood states improved significantly from the start to end of each session. Fatigue decreased the most compared to other mood states.

Mandel, S. E., Davis, B. A., & Secic, M. (2019). Patient satisfaction and benefits of music therapy services to manage stress and pain in the hospital emergency department. *Journal of Music Therapy*, 56(2), 149–173. doi: 10.1093/jmt/thz001

This study observed data regarding the benefits of music therapy and patient satisfaction from services. During this 3-year study, over 1,500 patients engaged in music therapy sessions with a certified music therapist. Sessions included therapeutic listening, songwriting, therapeutic singing, musical diversion, and music-assisted relaxation. Outcomes were measured using the Press Ganey ED survey to measure patient satisfaction. Their findings discovered significant improvements in stress and pain. A staff questionnaire found 80% indicated an improvement to their caregiving experience

with a music therapist's practice, and 92% responded they would likely recommend music therapy for future patients. All of the patients responded that they would request music therapy in the emergency department in the future.

Nelson, K., Adamek, M., & Kleiber, C. (2017). Relaxation training and postoperative music therapy for adolescents undergoing spinal fusion surgery. *Pain Management Nursing, 18*(1), 16–23. doi: 10.1016/j.pmn.2016.10.005

This study examined the effects of music-assisted relaxation training with adolescents undergoing spinal fusion surgery. A total of 44 participants were randomly assigned to an experimental group or control group. A 12-minute video training program was developed by the research team and included a description of music therapy in a pediatric setting, a description of music-assisted relaxation, as well as a demonstration and opportunity to practice the technique with soft guitar instrumental and breathing cues. Participants received a music therapy session with a music therapist on the second day post-operation. Outcome measures included self-reported anxiety and pain using a numeric rating scale (NRS) between 0-10. Results from the study showed a significant reduction of pain and anxiety from pre- to post-therapy.

Palmer, J. B., Lane, D., & Mayo, D. (2016). Collaborating with music therapists to improve patient care. *AORN Journal, 104*(3), 192–197. doi: 10.1016/j.aorn.2016.06.014

After a two-year randomized controlled-study to discover how to best implement a music therapy program, collaborate with staff to benefit surgical patients, and navigate challenges of the program, this article offers suggestions for collaboration between music therapy staff and medical staff in order to provide the best patient care. Results indicated

a music therapist could be beneficial in a surgical setting and could enhance the quality of patient care in conjunction with perioperative nurses. They concluded collaboration between the two fields could be beneficial in providing a safe and cost effective way to assist patients in managing their pain and anxiety without the need for pharmacologic interventions.

Rebecca, W., & Michael, J. S. (2020). A music therapy feasibility study with adults on a hospital neuroscience unit: Investigating service user technique choices and immediate effects on mood and pain. *The Arts in Psychotherapy*, 67. doi: 10.1016/j.aip.2019.101585

This study investigated the frequency of service user music therapy technique choices as well as the effects of these interventions on the pain and mood in adults on a neuroscience unit. Participants were offered individual music therapy sessions with a choice between pre-determined techniques consisting of (a) guided relaxation script with prerecorded music, (b) active music playing of instruments to preferred music performed live, and (c) listening to preferred music performed live. Mood and pain scales were completed pre- and posttest. No significant differences were found between groups. However, most techniques had a positive impact and slightly improved perceptions of pain and mood.

Rossetti, A., Chadha, M., Torres, B. N., Lee, J. K., Hylton, D., Loewy, J. V., & Harrison, L. B. (2017). The impact of music therapy on anxiety in cancer patients undergoing simulation for radiation therapy. *International Journal of Radiation Oncology, Biology, Physics*, 99(1), 103–110. doi: 10.1016/j.ijrobp.2017.05.003

In this randomized controlled trial, Rossetti et al. observed the effects of music therapy on distress and anxiety of cancer patients undergoing treatment. Patients randomized into the control group received no music therapy and those in the experimental group received 20 minutes of music therapy interventions. The music therapy interventions included live music played on a guitar and free improvisation. Outcome measurements included the Symptom Distress Thermometer (SDT) and the pre-State-Trait Anxiety Inventory (STAI-S Anxiety) questionnaire. Music therapy was found to have significantly lowered patient's distress and anxiety during procedures. The music therapy group had mean STAI-S scores of 39.1 pre-test and 31.0 posttest. SDT scores before simulation were 3.2 and after interventions, had lowered to 1.7. Meanwhile, the control group without music therapy found increases in both outcome measurement scores.

Teckenberg-Jansson, P. (2019). Effects of live music therapy on heart rate variability and self-reported stress and anxiety among hospitalized pregnant women: A randomized controlled trial. *Nordic Journal of Music Therapy*, 28(1), 7–26.

This randomized controlled trial evaluated the effects of live music therapy on self-reported stress, anxiety, and heart rate variability (HRV) in women hospitalized for high-risk pregnancies. A total of 102 women were randomly assigned to a control and experimental group. Participants of the experimental group received live music therapy consisting of lyre playing and humming for 30 minutes. HRV was measured using an electrocardiogram (ECG) and participants' self-reported levels of stress and anxiety.. The results indicated a significant increase in SD2 measures of HRV for the music therapy group, a decrease of low frequency HRV measure, and a significant reduction in anxiety.

Vinayak, S., Dehkhoda, F., & Vinayak, R. (2017). The effect of music therapy on sleep quality of cancer patients undergoing chemotherapy or radiotherapy: A randomized control trial. *Journal of Social Sciences (COES&RJ-JSS)*, 6(4), 734–743. doi: 10.25255/jss.2017.6.4.734.743

This randomized controlled trial examined the effectiveness of music therapy on sleep quality for patients with cancer. A total of 184 patients were randomly assigned to three groups: a control and two intervention groups of receptive or active music therapy. Participants completed the Pittsburgh Sleep Quality Index before and after interventions. Sessions were approximately 20-30 minutes in length, and they met for a total of 10 sessions. The receptive interventions consisted of patient preferred music and the active conditions included singing and playing guitar under a music therapist's supervision. The results of the study indicated significant differences between pre- and post test results on sleep quality for both intervention groups with active music therapy proving to be more effective in improving sleep.

Walworth, D. D. (2005). Procedural-support music therapy in the healthcare setting: A cost-effectiveness analysis. *Journal of Pediatric Nursing*, 20(4), 276–284. doi: 10.1016/j.pedn.2005.02.016

In this comparative analysis, Walworth examined the cost-effectiveness of music therapy as a procedural support in pediatric healthcare. The study consisted of patients receiving an echocardiogram (ECG), computerized tomography scans, and other procedures at a general medical hospital for one year. In the procedure room, participants engaged in live music interaction to distract from the procedures using guitar rhythm instruments, and

puppets. The results indicated that music therapy-assisted procedures successfully eliminated the need for patient sedation, decreased the number of staff members required for procedures, and reduced procedural times. The success rate for eliminating the need for sedation was 100% in patients receiving ECGS, 70.7% for CT scans, and 94.1% for other procedures.

Walworth, D., Rumana, C. S., Nguyen, J., & Jarred, J. (2008). Effects of live music therapy sessions on quality of life indicators, medications administered and hospital length of stay for patients undergoing elective surgical procedures for brain. *Journal of Music Therapy*, 45(3), 349–359. doi: 10.1093/jmt/45.3.349

The authors examined the effects of music therapy on quality of life, medication amount, and hospitalization length for patients undergoing brain procedures. Participants were randomly assigned to the control group and experimental group. The experimental group received music interventions which consisted of active music making, lyric analysis, songwriting, progressive muscle relaxation, and receptive music listening of patient-preferred music played by a music therapist pre- and post operations. Outcomes of anxiety, mood, pain, perception, relaxation, and stress were measured using the Visual Analog Scale (VAS) self-reported by patients. Results revealed statistically significant differences in 4 out of 6 quality of life measures: stress ( $p = .001$ ), anxiety ( $p = .03$ ), relaxation ( $p = .001$ ), and perceptions of hospitalization ( $p = .03$ ).

Whitehead-Pleaux, A., Zebrowski, N., Baryza, M. J., & Sheridan, R. L. (2007). Exploring the effects of music therapy on pediatric pain: Phase 1. *Journal of Music Therapy*, 44(3), 217-41. doi: 10.1093/jmt/44.3.217

This study assessed the effects of music therapy on anxiety and pain in pediatric burn patients undergoing medical procedures. Music therapy interventions included patient-preferred live music where patients were encouraged to sing along if desired, and improvisational songs consisting of motivational words of encouragement. Pain was measured using the Wong Baker FACES Scale, the Nursing Assessment of Pain Index to rate behavioral distress, and the Fear Thermometer to measure perceived anxiety. Results indicated a reduction of pain, anxiety, and behavioral levels following music therapy interventions. Interviews with participants indicated music therapy assisted in reducing pain and anxiety. Additionally, the intervention affected the patient's mood, compliance in a positive manner, and enhanced relaxation.

Yang, W.-J., Bai, Y.-M., Qin, L., Xu, X.-L., Bao, K.-F., Xiao, J.-L., & Ding, G.-W. (2019). The effectiveness of music therapy for postpartum depression: A systematic review and meta-analysis. *Complementary Therapies in Clinical Practice*, 37, 93–101. doi: 10.1016/j.ctcp.2019.09.002

This systematic review and meta-analysis observed the effectiveness of music therapy for postpartum depression. The meta-analysis was guided using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA). The study identified 818 records from five databases: PubMed (1966-November 2018); Embase (1974-November 2018); the Cochrane Library (1993-November 2018); the Web of Science (1980-November 2018); and the China Biology Medicine Database (1978-November 2018). The authors found seven studies published between 2010-2016 that fit inclusion criteria. The results of the study highlighted significant differences in depression between

groups which received music therapy and control groups and that music therapy had a positive effect on postpartum depression.

Yates, G. J., & Silverman, M. J. (2015). Immediate effects of single-session music therapy on affective state in patients on a post-surgical oncology unit: A randomized effectiveness study. *The Arts in Psychotherapy, 44*, 57–61. doi: 10.1016/j.aip.2014.11.002

In a randomized effectiveness study, Yates and Silvermen examined the immediate effects of a single music therapy session on the affective states of oncology patients post-surgery. Patients were randomly assigned to control and experimental conditions following a wait-list control design. The experimental group received 20-30 minutes of receptive music therapy consisting of patient preferred live music. The affective states of patients were measured before and after sessions using a researcher-developed, 12-item quick mood scale (QMS). The results indicated a significant difference in relaxation/anxiety with participants of the experimental group receiving more favorable posttest scores. The study supports the use of single music therapy sessions as an effective psychosocial intervention.

Yinger, O. S. (2016). Music therapy as procedural support for young children undergoing immunizations: A randomized controlled study. *Journal of Music Therapy, 53*(4), 336–363. doi: 10.1093/jmt/thw010

In this randomized controlled study, Yinger examined the effects of live, cognitive-behavioral therapy on the behaviors of children, parents, and nurses during immunizations. Participants in the music therapy group engaged in music therapy groups focused on teaching cognitive-behavioral coping skills through music activities.

Outcomes were measured using the Child-Adult Medical Procedure Interaction Scale-Revised (CAMPIS-R), Universal Pain Assessment Tool, and a researcher-created questionnaire. The results of this study indicated significant differences in the coping and stress behaviors of the children as well as the parent's distress-promoting behaviors for those who received music therapy. Parents reported lower levels of distress whereas those in the control group reported greater levels of distress.

Zhou, K., Li, X., Li, J., Liu, M., Dang, S., Wang, D., & Xin, X. (2015). A clinical randomized controlled trial of music therapy and progressive muscle relaxation training in female breast cancer patients after radical mastectomy: Results on depression, anxiety and length of hospital stay. *European Journal of Oncology Nursing*, *19*(1), 54–59. doi: 10.1016/j.ejon.2014.07.010

This randomized controlled trial examined the effects of music therapy and progressive muscle relaxation training on anxiety, depression, and length of stay in breast cancer patients after a radical mastectomy. A total of 170 participants were randomly assigned to an intervention group and control group. Those in the intervention group received music therapy and progressive muscle relaxation training twice a day in 30-minute sessions. Primary outcome measurements included the Zung Self-rating Depression Scale (ZSDS) and State Anxiety Inventory (SAI). Results of this study indicated significant improvements in anxiety and depression ( $F = 5.41, P = 0.017$ ;  $F = 20.31, P < 0.001$ ), time ( $F = 56.64, P < 0.001$ ;  $F = 155.17, P < 0.001$ ), group time interaction ( $F = 6.91, P = 0.009$ ;  $F = 5.56, P = 0.019$ ), and a shorter hospital stay in the intervention group ( $F = 13.35, P < 0.001$ ).

## Appendix D

### Improvisational Method Variations

<b>METHODS</b>	<b>DESCRIPTION</b>	<b>MATERIALS</b>	<b>BENEFITS FROM LITERATURE REVIEW</b>
<i>Instrumental Non-referential</i>	The patient extemporizes on a musical instrument without reference to anything other than the sounds or music	Keyboard, guitar, drums, xylophone, maracas, hand bells, tambourine, shakers, djembe, ocean drum, music stand, iPad	-Decreases symptoms of stress and anxiety -Decreases physiological symptoms -Decreases symptoms of depression -Improves mood -Encourages physical movement and rehabilitation -Improves self-expression -Improves quality of life
<i>Instrumental Referential</i>	The patient extemporizes on a musical instrument to portray in sound something nonmusical	Keyboard, guitar, drums, xylophone, maracas, hand bells, tambourine, shakers, djembe, ocean drum, music stand, iPad	-Decreases symptoms of stress and anxiety -Decreases physiological symptoms -Decreases symptoms of depression -Improves mood -Encourages physical movement and rehabilitation -Improves self-expression -Improves quality of life
<i>Song Improvisation</i>	The patient extemporizes lyrics, melody, and/or accompaniment to a song	Keyboard, guitar, drums, xylophone, maracas, hand bells, tambourines,	-Decreases symptoms of stress and anxiety -Decreases physiological symptoms -Decreases symptoms of depression

<b>METHODS</b>	<b>DESCRIPTION</b>	<b>MATERIALS</b>	<b>BENEFITS FROM LITERATURE REVIEW</b>
		shakers, djembe, music stand, Bluetooth speaker iPad	<ul style="list-style-type: none"> <li>-Improves mood</li> <li>-Encourages physical movement and rehabilitation</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Mixed Media Improvisations</i>	The patient improvises using voice, body sounds, instruments, and/or any combination of sound sources	Keyboard, guitar, drums, xylophone, maracas, hand bells, tambourine, shakers, djembe, music stand, iPad	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Encourages physical movement and rehabilitation</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>

*Note:* Methods and Descriptions taken from Bruscia (2014)

## Appendix E

### Re-creative Method Variations

<b>METHODS</b>	<b>DESCRIPTION</b>	<b>MATERIALS</b>	<b>BENEFITS FROM LITERATURE REVIEW</b>
<i>Instrumental Re-creation (Playing an Instrument)</i>	The patient may be involved in any of the following kinds of experiences: sounding an instrument in a prescribed way, sight-playing some kind of notation, performing precomposed instrumental pieces, rehearsing in an instrumental ensemble, taking private lessons, performing imitative tasks on an instrument, or playing an instrumental part with a recording	Keyboard, guitar, drums, xylophone, maracas, hand bells, tambourine, shakers, djembe, ocean drum, music stand, Bluetooth speaker, iPad	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Encourages physical movement and rehabilitation</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Vocal Re-creation (Singing a Song)</i>	The client may be involved in any of the following: vocalizing in a prescribed way, sight-singing, singing songs, chanting, choral-speaking, rehearsing choral groups, taking voice lessons, vocally imitating or learning melodies or lip-synching recorded songs	Microphone, amplifier, music stand	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>

*Note:* Methods and Descriptions and taken from Bruscia (2014)

## Appendix F

### Compositional Method Variations

<b>METHODS</b>	<b>DESCRIPTION</b>	<b>MATERIALS</b>	<b>BENEFITS FROM LITERATURE REVIEW</b>
<i>Song Transformation</i>	The client changes words, phrases, or the entire lyrics of an existing song while maintaining the melody and standard accompaniment or, conversely changes the music while maintaining the lyrics	iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Songwriting</i>	The client composes an original song or any part thereof (e.g., lyrics, melody, accompaniment) with varying levels of technical assistance from the therapist	Keyboard, guitar, drums, xylophone, maracas, hand bells, tambourine, shakers, djembe, ocean drum, music stand, iPad	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Instrumental composition</i>	The client composes an original instrumental piece with or any part thereof (e.g., melody, rhythm, accompaniment) with varying levels of technical assistance from the therapist.	Keyboard, guitar, drums, xylophone, maracas, hand bells, tambourine, shakers, djembe, ocean drum, music stand, iPad	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>

<b>METHODS</b>	<b>DESCRIPTION</b>	<b>MATERIALS</b>	<b>BENEFITS FROM LITERATURE REVIEW</b>
<i>Music Collages</i>	The client selects and sequences sounds, songs, music, and fragments thereof in order to produce a recording that explores autobiographical or therapeutic issues	iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>

*Note:* Methods and Descriptions taken from Bruscia (2014)

## Appendix G

### Receptive Method Variations

METHODS	DESCRIPTION	MATERIALS	BENEFITS FROM LITERATURE REVIEW
<p><i>Somatic Listening</i></p> <ul style="list-style-type: none"> <li>● <i>Entrainment</i></li> <li>●</li> <li>● <i>Resonance (Toning)</i></li> </ul>	<p>The use of vibration, sounds, and music in various elemental and combined forms to directly influence the client's body and its relationship to other facets of the client</p> <p>The use of vibrations, sounds, and music in various elemental and combined forms to establish synchronicity in autonomic or voluntary body responses</p> <p>The use of vibrations, sounds, and music in various elemental and combined forms to vibrate parts of the client's body at various frequencies or frequency patterns, and to establish sympathetic vibrations between the stimulus and client</p>	<p>Keyboard, guitar, guitar amplifier, ocean drum, djembe, Bluetooth speaker, iPad</p>	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> <li>-Improves sleep</li> <li>-Provides procedural support</li> </ul>

<b>METHODS</b>	<b>DESCRIPTION</b>	<b>MATERIALS</b>	<b>BENEFITS FROM LITERATURE REVIEW</b>
<i>Music for Pain Management</i>	The use of music listening to enhance the effects of anesthetic or analgesic drugs, to induce boy relaxation, or to facilitate entry into altered states of consciousness	Keyboard, piano, Bluetooth speaker, iPad	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> <li>-Improves sleep</li> <li>-Provides procedural support</li> </ul>
<i>Meditative Listening</i>	The use of music to assist in meditation or in the contemplation of a particular idea	Keyboard, guitar, iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Action Listening</i>	The use of song lyrics or musical cues to elicit specific behavioral responses (e.g., motor movements, daily living activities, verbal responses)	iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>

<b>METHODS</b>	<b>DESCRIPTION</b>	<b>MATERIALS</b>	<b>BENEFITS FROM LITERATURE REVIEW</b>
<i>Song (Music) Reminiscence</i>	The use of music listening to evoke memories of past events and experiences in the client's life	iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Song (Music) Communication</i>	The therapist asks the client to select or bring in a recorded song (or other piece of music) which expresses or discloses something about the client that is of relevance to therapy	iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Song (Lyric) Discussion</i>	The therapist brings in a song that serves as a springboard for discussion of issues that are therapeutically relevant to the client. After listening to the song, the client is asked to analyze the meaning of the lyrics, and to examine (in dialogue with the therapist or other clients), the relevance of the lyrics to the client or the client's life	keyboard, guitar, iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> <li>-Improves sleep</li> <li>-Provides procedural support</li> </ul>

<b>METHODS</b>	<b>DESCRIPTION</b>	<b>MATERIALS</b>	<b>BENEFITS FROM LITERATURE REVIEW</b>
<i>Projective Listening</i>	The therapist presents sounds and/or music and asks the client to identify, describe, interpret, and/or free associate to them through either verbal or nonverbal means	Keyboard, guitar, iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Imaginal Listening</i>	The use of music listening to evoke and support imaginal processes or inner experiences, often while in a non-ordinary or altered state of consciousness.	Keyboard, guitar, iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> </ul>
<i>Self-Listening</i>	The client listens to a recording of their own improvisation, performance, or composition, to reflect upon oneself and the experience	iPad, Bluetooth speaker	<ul style="list-style-type: none"> <li>-Decreases symptoms of stress and anxiety</li> <li>-Decreases physiological symptoms</li> <li>-Decreases symptoms of depression</li> <li>-Improves mood</li> <li>-Improves self-expression</li> <li>-Improves quality of life</li> <li>-Improves sleep</li> <li>-Provides procedural support</li> </ul>

*Note:* Methods and Descriptions taken from Bruscia (2014)

**Appendix H****Sample Music Therapy Referral Form****Information:**

Patient Name: \_\_\_\_\_ Unit/Room#: \_\_\_\_\_

DOB: \_\_\_\_\_ Age: \_\_\_\_\_

**Health Information:**

Primary Diagnosis: \_\_\_\_\_

Current Medical History: \_\_\_\_\_

Reason for Referral: \_\_\_\_\_

Additional Comments: \_\_\_\_\_

**Assessment Summary:**

Physiological Information: \_\_\_\_\_

Physical/Motor Skills: \_\_\_\_\_

Cognitive Skills: \_\_\_\_\_

Communication Skills: \_\_\_\_\_

Social/Emotional Behaviors: \_\_\_\_\_

Musical Behaviors: \_\_\_\_\_

Additional Comments: \_\_\_\_\_

Referring Individual: \_\_\_\_\_ Relationship to Patient: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Please return to music therapist

**Appendix I**

**Sample Music Therapy Assessment Form**

Name of Patient: \_\_\_\_\_ Unit/Room #: \_\_\_\_\_

Diagnosis: \_\_\_\_\_ Location: \_\_\_\_\_

Other Services: \_\_\_\_\_

**Assessment Summary:**

Physiological Information: \_\_\_\_\_

Physical/Motor Skills: \_\_\_\_\_

Cognitive Skills: \_\_\_\_\_

Communication Skills: \_\_\_\_\_

Social/Emotional Behaviors: \_\_\_\_\_

Music History: \_\_\_\_\_

Music Preferences: \_\_\_\_\_

Additional Comments: \_\_\_\_\_

\_\_\_\_\_

Recommendations for Music Therapy:

\_\_\_\_\_

\_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_