

Running head: MUSIC THERAPY FOR REHABILITATION

Music Therapy Program Proposal for Rehabilitation Unit in Hong Kong Adventist
Hospital

By

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In Partial Fulfillment of the Requirements for the Degree of Master of Science

A THESIS

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Summary Statement

The purpose of this program proposal is to implement a music therapy program on the rehabilitation unit of Hong Kong Adventist Hospital (HKAH). HKAH is a healthcare institution that offers attentive care for the local community, expatriates in Hong Kong, and patients who are temporarily living or working in Hong Kong (HKAH, 2019). This music therapy program is designed to positively affect people who have acquired neurological damage and are receiving care and treatment at the HKAH rehabilitation unit. This program proposal presents various music therapy methods, and how these methods may help the rehabilitation population at HKAH.

Personal Statement

Music has been a part of my life since I was a little girl. I started playing piano when I was 6 years old. I enjoyed the little space that music creates for me that was irreplaceable. Music was a cure for me and kept me company through some hard times of my adolescence. I knew that music has a special power and I wanted other people to feel it. I studied music education during my undergraduate studies. Teaching piano was the way I shared the beauty and the power of music.

By chance I had an opportunity to participate in a music therapy summer program. From that point, I realized that music therapy was the direction that I had been seeking. After I completed my bachelor's degree in music education, I began my graduate studies in music therapy. During my graduate studies, I had various clinical experiences working with different populations, including older adults, children with special needs, and at a pediatric hospital.

I became interested in working on a rehabilitation unit during my 11-month clinical internship at the Northeast Center for Rehabilitation and Brain Injury. During my internship, I had the opportunity to work with groups and individuals, as well as to co-treat with other therapists. The most unforgettable experience was working with a woman who had aphasia caused by a brain injury. We established a good rapport during my internship. Mostly we focused on improving her speech using vocal exercises to help her improve articulation. We sang through her favorite songs with a very slow tempo, and broke down the lyrics to practice. She showed significant improvements through our work together. Music gave her motivation. She expressed that singing her favorite song made her feel better.

I have also worked with a patient with traumatic brain injury who had an impulse control issue. After a car accident, she lost her sight, which caused her to be sensitive to the environment. She picked fights with either the staff or other patients when she felt uncomfortable by any environment elements around her, such as smells, sounds, and tactile stimulation. She often became anxious and agitated. She demonstrated quick negative reactions to these environmental stimuli, such as using disrespectful language. She had difficulty integrating into the community due to her behavior. However, she presented differently in music therapy. She was open to share songs and stories with me. We established a good rapport through music. We wrote and recorded a rap song to express her feeling of being apart from family, her accident, and the feeling of navigating the community being blind. We engaged in music improvisation to provide opportunities to practice impulse control. We also employed lyric analysis and song discussion to help her explore her strengths. During our three months of music therapy, she showed

significant improvement in self-awareness, mood regulation, positive coping skills, and impulse control outside of music therapy sessions. The staff reported that the patient caused fewer fights. She demonstrated the ability to control her impulses and express herself appropriately. She became more self-affirming with her verbalizations. Instead of expressing hopeless emotion for the future, she told me that she would get well and go back home to take care her mom.

My love of this work grew as I have witnessed more and more patients benefit from music therapy. I am proud when I see patients make progress, especially seeing patients return to their normal lives. Because of my love of working with rehabilitation, I completed the Neurologic Music Therapy (NMT) training in order to learn the techniques and their application to the rehabilitation process. Throughout my internship at the rehabilitation center, there were many beautiful therapeutic moments that motivate me to keep walking on this path.

Defining Music Therapy

The American Music Therapy Association (AMTA, 2019) defines music therapy as the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program (AMTA, 2019). Music is used within a therapeutic relationship to address physical, emotional, cognitive, and social needs of individuals (AMTA, 2019). Music therapy has been proven to effectively facilitate physical rehabilitation and movement, increase motivation to participate in treatment, and provide emotional support and emotional outlet (Thuat, 2016).

In the neurorehabilitation setting, music therapy is recognized as helpful for rapid skill redevelopment of clinically meaningful, functional skills that can transfer outside of the treatment (Lee & Baker, 1997). Music was found to have significant influence on the brain by stimulating physiologically complex cognitive, affective, and sensorimotor processes (Thaut, McIntosh, & Hoemberg, 2016). Music is a highly structured auditory language combining complex perception, cognition, and motor control in the brain, and this sensory language can effectively be used to retrain and re-educate the injured brain (Thaut, McIntosh, & Hoemberg, 2016). Since the early 1990s, the clinical application of music therapy in neurological rehabilitation has been significantly expanded. Various music therapy methods have been used to help with pediatric brain-injured patients emerging from coma and early states of recovery, as well as working toward improving positive coping skills, self-expression and adjustment to trauma for early states of recovery (Baker & Tamplin, 2006).

Statement of Need

In China, people attach importance to the application of music therapy in rehabilitation (PwC, 2016). With the rapid development of music therapy in rehabilitation, music therapy has gradually become an important force in China's modern rehabilitation system. Many rehabilitation hospitals and institutions in China have successfully implemented music therapy in rehabilitation services (Wang, 2019).

Demand for Rehabilitation Services in China

In China, there is a significant difference between the actual number of the patients admitted to the hospital for recovery and the number of patients with recovery needs (PwC, 2016). This suggests that there is potential for the growth in demand for

rehabilitation services. With the change of people's attitude towards rehabilitation, the enhancement of awareness of rehabilitation and the increase of medical insurance coverage, more and more patients are eligible to receive rehabilitation treatments.

In recent years, the demand for rehabilitation services exceeds the existing ability to meet the needs of patients in China. According to Price Waterhouse Cooper (2016), a conservative estimate of the population of persons requiring rehabilitation is more than 100 million people. The total number of people with disabilities in China at the end of 2010 was approximately 85 million, 50 million of whom had recovery needs. As of the end of 2014, the number of older adults over the age of 65 years was over 138 million, accounting for 10.1% of China's total population. There were about 70 million older adults who were suffering from various chronic diseases and required care in recovery from life-capacity disorders. Moreover, there were approximately 10 million people with chronic diseases who required rehabilitation services. The number of people becoming disabled by motor vehicle accidents, work-related accidents, and other injuries is increased by about one million every year, and most of them require rehabilitation services (PwC, 2016).

In 2016, 617,700 people of China were admitted to rehabilitation hospitals, with an average length of stay of 17.9 days (Wang, 2019). In terms of training, only 9,514 doctors with rehabilitation medical qualifications are providing rehabilitation services (Wang, 2019). At present, the biggest difficulty in the field of rehabilitation is the insufficient supply of rehabilitation professionals (Wang, 2019).

Hong Kong Adventist Hospital

Hong Kong Adventist Hospital (HKAH) is a Christian, non-profit healthcare organization, served by a team of dedicated professionals with a passion for excellence, a spirit of Christian service and a commitment to whole-person healing (HKAH, 2019). It is a part of the Adventist Health global network of over 160 hospitals of the world (HKAH, 2019). HKAH is established to provide high-quality healthcare to the local community, expatriates in Hong Kong, and patients who are temporarily living or working in Hong Kong and are of Christian faith (HKAH, 2019). HKAH has a comprehensive rehabilitation program. They offer various rehabilitation services both for adults and children, which includes physical therapy, occupational therapy, speech therapy, prosthetic and orthotic treatment, sports and exercise therapy, pilates physiotherapy service, stroke rehabilitation, cardiac rehabilitation and swallowing rehabilitation.

The mission of HKAH is guided by values of compassion, excellence, wholeness, integrity and family (HKAH, 2019). This music therapy program will reflect on the following goals consistent with the current strategy.

- Compassion: Reflect God's love through caring, kindness, and empathy.

The music therapy program will strive to provide nurturing and empathy experience through music. As influenced by person-centered approach to care, the music therapist would emphasize patient's freedom of choice and potential for meaningful change.

- Wholeness: provide whole-person healing and wellness based on the health principles of the Seventh-day Adventist Church.

This music therapy program is designed to align with the person-centered approach while addressing the various symptoms relevant to rehabilitation processes. Patients who participate in music therapy will be treated holistically. Their physical, mental, and spiritual needs will be considered when designing treatment plans.

- Family: value and respect one another as members of a caring community.

Positive coping and group cohesion can be experienced through music therapy groups. Patients who participate in group music therapy will have experience of making music together, thereby facilitating the relationship between patients. Families will be encouraged to be part of the music therapy process whenever possible and appropriate.

Theoretical Orientation

My philosophy of music therapy integrates elements of the person-centered humanistic approach, Resource-Oriented Music Therapy (RoMT), and Neurological Music Therapy (NMT) approaches. I believe that the music therapist must be flexible and integrate components of multiple approaches to best meet the needs of patients, but that the person-centered humanistic approach should be central. I honor each patient as a whole individual with their own history and story, while helping them to address issues and symptoms. I consider their needs, strengths, preferences, backgrounds, and readiness to participate when determining the approach of music therapy. I believe patients have their own capacities and potential to make changes. My role as a music therapist is to help them discover and develop their own personal power and to utilize it. When patients become empowered, they are able to use this power for personal growth(Wheeler, 2015).

A significant emphasis of RoMT is the value placed on patients' strengths, resources, and potentials (Rolvjord, 2010). The person's multiple contexts outside of the hospital would be considered as resources to facilitate rehabilitation, which holds the same view with HKAH's mission "wholeness." Patients' strengths and potentials could be stimulated to develop through music and thereby lead to growth and change. RoMT emphasizes that positive experiences and developing coping skills can be just as helpful to patients as more problem-focused approaches (Rolvjord, 2010).

Experiencing hospitalization and a loss of independence due to accident or illness may result in emotional and psychosocial challenges. Music therapy may provide a positive experience that empowers the patient and positively influences the patient's perception of the world and themselves (Aldridge, 2008). Music therapy can provide an opportunity for patients to improve or rebuild self-esteem, self-empowerment, positive coping skills and other psychosocial issues (Aldridge, 2008). Through engaging in music therapy experiences, patients may discover their strength, and experience similar experiences of utilizing their strength and power to get through the hard times of the recovery process (Rolvjord, 2010).

In order to meet patient's needs while providing various music experiences, this program would utilize the methods of music therapy as delineated by Bruscia (2014): compositional, re-creative, receptive, and improvisational methods. According to Bruscia (2014), compositional methods involve participants in the process of composition; recreative methods involve the participant's reproduction of precomposed musical material; receptive methods are which the patients assume the role of a listener in the

music experience; improvisational methods includes any experiences in which patients actively participate in music making experience (Bruscia, 2014).

The techniques of NMT also will be included in the music therapy program in order to meet individuals with varying rehabilitation needs in physical, cognitive, and communication domains. For example, rhythmic auditory stimulation(RAS) is utilized for gait training, to facilitate speech intelligibility, as well as exercise short-term and long-term memory (Thaut, 2016). Musical attention control training(MACT) utilize musical elements to cue attention functions (Thaut, 2016). Melodic intonation therapy (MIT) is a technique that uses melodic and rhythmic elements and words to assist in speech recovery (Thaut, 2016).

Review of the Literature

This review includes literature supporting the use of music therapy in rehabilitation. It is organized by the diagnosis with rehabilitation needs. The most relevant studies and sources used in this review are discussed in the annotated bibliography. Music therapy would be beneficial for patients physiologically and psychosocially, as well as bring in financial benefit for HKAH. Table 1 shows the benefits of music therapy as found in literature.

Table 1

Benefits of Music Therapy

Benefit	Source
Improves psychological well-being	Baker et al. (2017)
Improves cognitive rehabilitation	Bower et al. (2014)
Improves communication rehabilitation	Conklyn et al.(2012), Elefant et al. (2012) Grau Sánchez et al. (2018) Hurkmans et al. (2015) Slavin and Fabus (2018) Johnson et al. (2019)
Improves physical rehabilitation	Grau Sánchez et al. (2018) Whittaker and Schuipis (2013) Muckenheim and Whiteley (2018)
Collaboration with physical therapy	Muckenheim and Whiteley (2018)
Collaboration with speech therapy	Johnson et al. (2019)

For the purposes on the program proposal, the benefits of music therapy will be further explored for traumatic brain injury, neurogenic communication disorders, neurodegenerative diseases, and stroke. The ability to and effectiveness of music therapists' collaboration with related professionals will also be explored.

Music and Traumatic Brain Injury

People who have a traumatic brain injury (TBI) typically struggle with issues relating to more than one functioning area, including cognition, motor, communication

deficits, and social functioning (Vega, 2012). Cognition is typically the most affected area, and motor skills may also be severely affected. Further, the patients may display difficulty expressing themselves verbally (Vega, 2012).

According to Vega (2012), music can reach the patient who is in a coma or a low awareness state. As the patient becomes more alert, music therapy can assist in improving orientation, attention to task, and memory. Music therapy relaxation techniques aid the patient to reduce physical and emotional tension. Motor skills can be regained through music instrument playing and movement to music. Singing of songs can increase language and communication skills, as well as enhance mood. Lyric analysis, song composition, and music improvisation offer outlet for self-expression.

Music and Neurogenic Communication Disorders

Neurogenic communication disorder (NCD) is a speech-language disorder resulting from neurological damage, including cerebrovascular accident, chronic neurodegenerative conditions, or traumatic brain injury (Cohen, 2012). NCDs are divided into three categories: articulation, fluency, and vocal disorders.

According to Cohen (2012), because music and speech share many common elements such as pitch, rhythm, tempo, and dynamics, music has a significant influence on people with neurogenic communication deficits. Singing may provide an alternative way to rediscover verbal fluency and breath flow. Furthermore, singing promotes deep breathing, controlled exhalation, and audible phonation which can improve dysphonic and dysprosodic speech.

Music and Neurodegenerative Diseases

Long-term neurological conditions (LTNC), including Parkinson's Disease and amyotrophic lateral sclerosis (ALS), are chronic and degenerative diseases, with intermittent yet gradually increasing symptoms (Magee, 2012). Motor and communication disorders are central to all LTNC, and the degree of cognitive disorder varies between specific diseases (Magee, 2012). Care for individuals with LTNC encompasses disability management and symptom control, intending to maintain a person's independence and quality of life (Magee, 2012).

The literature reports that using pre-composed songs with personal meaning aid associative and temporal properties that enhance their emotional meaning (Magee, 2012). Functional singing is recommended for improvement in physical, social, emotional, and cognitive functioning, as well as general well-being (Magee, 2012). Music improvisation can contribute to the coordination of physical control, strength, and stamina through the act of playing instruments (Magee, 2012). Songwriting is often used in music therapy to express feelings. The lyrics composed by people living with life-threatening illnesses have been found to contain express self-reflections, reflections on significant others, and expression of adversity (O'Callaghan, 1996).

Music and Stroke

The most common disorders caused by stroke include damage in the areas of movement, speech, and language, perception, cognition, and emotion (Gilbertson, 2012). Music strongly stimulates visual, auditory, and motoric information and transmits to the brain network (Schlaug, 2009). It has unique demands for the nervous system, perception, and action mediated by sensory, motor, and multimodal integrative regions distributed throughout the brain (Schlaug, 2009). Music provides positive experiences for patients in

a late phase after stroke in terms of motor, cognitive, as well as emotional enhancements (Pohl, Carlsson, Ka, Nilsson, & Blomstrand, 2017). Music significantly reduced anxiety in stroke patients (Doğan, Tur, Dilek, & Küçükdeveci, 2011). Music therapy has a positive effect on improving the mood and social interaction of patients with traumatic brain injury (TBI) and stroke (Nayak, Wheeler, Shiflett, & Agostinelli, 2000).

Music Therapy with Related Professionals

In the rehabilitation setting, music therapy plays an important role of providing unique techniques that can collaborate with physical therapy, speech therapy, occupational therapy. It is common and necessary that collaborative with music therapy to enhance the rehabilitation needs

According to the research, there are multiple music therapy interventions that have been successfully implemented in co-treatment with other professionals. Rhythmic auditory stimulation (RAS) is a technique that is often used to facilitate movement (Thaut, 2014). Muckenhirn and Whiteley (2018) found RAS combined with traditional physical therapy interventions help patients achieve or maintain improvement on gait and balance. Research also shows that physical therapist and music therapist co-treatment session is effective in improving motor coordination (Imankhah, Khanzadeh, & Hasirchaman, 2018).

Music therapy techniques also have been found to have meaningful outcomes in collaboration with speech therapy in improving speech for patients with aphasia and apraxia (Johnson, Coles, Keough, King, & Reed, 2019). Moreover, Grau Sánchez and his colleagues (2018) found that collaboration with the music therapist enhance significant outcomes of improved communication and quality of life.

Detailed Description of the Program [L]
[SEP]

This program will mirror the values of Hong Kong Adventist Hospital to provide treatment based on person-centered and resource-oriented approaches. Music therapy will be implemented through group sessions, individual sessions, and co-treatment sessions with physical therapy, speech therapy, and occupational therapy. In order to meet the needs, interests, and abilities of patients, music therapy services will include all music therapy methods: receptive, re-creative, compositional, and improvisational methods. Table 2 shows a proposed weekly schedule for one music therapist. In order to ensure the quality of treatments, individual patients would receive 30 minutes music therapy sessions 1-2 times a week. That would allow a music therapist to see at least 26 individual patients every week. Each group session will be provided once a week.

Table 2. *Proposed Weekly Schedule*

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-9:00	Morning Meeting				
9:00-9:30	Individual session				
9:30-9:45	Transition	Transition	Transition	Transition	Transition
9:45-10:15	Individual session				
10:15-10:45	Transition	Transition	Transition	Transition	Transition
10:45-11:15	Individual session				
11:15-11:30	Transition	Transition	Transition	Transition	Transition
11:30-12:00	Document	Document	Document	Document	Document
12:00-12:30	Lunch	Lunch	Lunch	Lunch	Lunch
1:00-1:30	Individual session				
1:30-1:45	Transition	Transition	Transition	Transition	Transition
1:45-2:15	Individual session				
2:15-2:45	Transition	Transition	Transition	Transition	Transition
2:45-3:30	Group session				
3:30-4:00	Document	Document	Document	Document	Document

Music Therapy Treatment Process

Upon engagement of music therapy process, an assessment will be completed to determine appropriate goals of treatment. Individual goals may include cognitive, physical, communicative, psychosocial/emotional, and spiritual needs. The music therapy assessment (see Appendix A) will note medical and psychological diagnoses as well as personal history, which are provided by the treatment team. Each patient's needs, preferences, and musical life experiences will be assessed directly from the patient and in consultation with family if possible. Patients will be assessed in five domains including musical, physical, cognitive, communication, and social/emotional functioning. After the assessment, a plan of treatment, including methods and techniques of music therapy, will be developed collaboratively with the patient as possible. A music therapy progress note (see Appendix B) will be completed after every group or individual session. The progress note will reflect progress toward identified goals and overall response to music therapy. A termination report (see Appendix C) will be provided when the patient discharges from music therapy/music therapy group. In the termination report, the music therapist will reassess the five domains as well as the specific goals to document overall progress. The music therapist will also give recommendations for continued engagement with music for wellness and maintenance for the patient.

Individual Music Therapy Sessions

Patients on the unit may be best suited for individual sessions due to stage of recovery, and variations in medical needs, physical disabilities, and social, or cognitive impairments. Individual sessions would allow for more effective and direct treatment

process for some patients. Music interventions are designed for the patient to address individual's goals and needs.

Individual patients can be referred by any medical team members for various reasons. See Appendix D for a sample referral form. The music therapist will assess patients to confirm the appropriateness for individual sessions, then complete assessment. The following steps reference with the music therapy treatment process that has mentioned above.

Group Music Therapy Sessions

Group music therapy is an effective format that allows for a greater number of people to participate in music therapy services. Moreover, the group setting facilitates a miniature society. Because of the negative emotions that arise after injury and during the recovery process, some patients may feel disconnected from the society and may isolate themselves from people (Davies, 2002). This may lower their motivation for recovery and impact reintegrating into society in the future. Group music therapy sessions would provide a venue to engage in socialization (Davies, 2002). Further, patients would gain support from peers who have similar experiences as well as opportunities to express themselves. Patients would experience rebuilding relationships with others (Davies, 2002).

Depending on the patient's functioning level and independence level, patients can be divided into different groups. To provide successful experiences, music interventions would be designed based on each group's needs, strength, and functioning levels. Patients might also be placed into groups depending on their interests and preference for music therapy methods or techniques.

Every group session would start with a check in to assess the group's needs and emotional status thereby allowing music therapist to make adjustments. Music therapist would document a group progress note after each group session to record every participants and their response of music interventions.

Music Therapy Interventions

Re-creative Music Therapy

Duration: 45-60 minutes (group), 30 minutes (individual)

Location: Dining room/lounge (group), patient's room/music therapy room (individual)

Group size: 2-10

Materials needed: Guitar/keyboard, music stand, speaker, chairs, a variety of hand-held percussion instruments.

The main goals of this activity are to facilitate active participation and improve mood. In the individual setting, the activity can be arranged to targeted individual's needs such as motor, cognitive, as well as language domains.

Patients would be invited to participate in music both by singing along, playing percussion instruments, or answering the questions that related to the music. Music will be selected based on patient preferences, events, and seasons. Music trivia is used with the group which can be interspersed between each song. Discussing the songs' and artists' backgrounds would increase the challenge and interest of the activity. This combination of activities allows for inclusion of varying functioning levels within the same group.

Sing along

Duration: 45-60 minutes (group), 30 minutes (individual)

Location: Dining room/lounge (group), patient's room/music therapy office (individual)

Group size: 2-10

Materials needed: Guitar/keyboard, music stand, chairs, lyric sheets.

This activity aims to facilitate active participation, improve mood, improve articulation and respiratory. Patients can participate in singing along with the group and music therapist in the group session, or with music therapist in the individual session. Music will be selected based upon patient's preferences and needs thereby encourage participation, as well as ensure goals are being targeted.

Drumming experience

Duration: 45-60 minutes (group), 30 minutes (individual)

Location: Dining room/lounge (group), patient's room/music therapy office (individual)

Group size: 2-10

Materials needed: Guitar, chairs, djembes, hand drums, a variety of hand-held percussion instruments.

This improvisational experience focuses on self-awareness, self-expression, and mood regulation. Drumming has been found to be effective in expressing strong emotions (Davies, 2002). By demonstrating emotions on the drum could help the patient enhance awareness of their emotions thus improve the ability of emotion regulation. It also provides an outlet for the emotion to be expressed in creative music experience.

Moreover, the motions of drumming involves upper body practice, which would benefit people with upper body rehabilitation needs.

Drumming experience starts with a warm up/verbally check in, that would allow the music therapist to assess the group/individual. The structure level can be varied according to the needs of the group/individual. After drumming, patients are encouraged to share their feelings and thoughts with the group and music therapist; this facilitates self-awareness and mood regulation.

Instrument playing

Duration: 45-60 minutes (group), 30 minutes (individual)

Location: Dining room/lounge (group), patient's room/music therapy office (individual)

Group size: 2-10

Materials needed: Guitar/keyboard, chairs, xylophones, hand bells, tone bars, hand drums, djembes, a variety of hand-held percussion instruments.

This intervention could be a re-creative or an improvisational experience that aims to improve positive coping skills, increase self-esteem, increase group cohesion, as well as improve fine motor and gross motor skills. The instruments used in the group would be modified by the music therapist to ensure each patient's preferences, strengths, and abilities are met. Patients are encouraged to choose instruments and participate in positive behaviors. Through this music experience, patients may gain an awareness of their value as a part of the group.

This activity starts with a warm up for patients to explore and choose instruments. Instrument playing can be conducted based on a theme, familiar songs, or randomly

improvise together. Lastly, the group will share their reflections and thoughts with the group and/or music therapist.

Lyric analysis

Duration: 45-60 minutes (group), 30 minutes (individual)

Location: Dining room/lounge (group), patient's room/music therapy office (individual)

Group size: 2-8

Materials needed: Guitar/keyboard, music stand, chairs, lyric sheets, pens, colored pencil.

This is a receptive music experience, which can help patients develop identification, exploration, and communication of thoughts and emotions. Lyric discussion and analysis can also be used to enhance positive coping skills. It has the power to distract patients from negative states with verbal guidance (Silverman, 2016).

The music therapist or patient chooses a song based on a topic related to the group's needs. The song will be re-created, with patients encouraged to sing or read through the lyrics, as well as mark any significant lyrics. After listening to the song, the group discusses the meaning of the song, as well as any personal connections to the song and message. This type of intervention can also be conducted with other creative arts. After a discussion of the meaning of the lyrics, the patient might engage in: visual art such as drawing, painting, or collage; or written responses such as poetry or journaling. This provides an opportunity for essential and distinctive attribute expression of the patients (Gardstrom, 2014). This visible transformative activity enables them to take greater control of their journey of recovery (Van Lith, Fenner, & Schofield, 2011).

Songwriting

Duration: 45-60 minutes (group), 30 minutes (individual)

Location: Dining room/lounge (group), patient's room/music therapy office (individual)

Group size: 2-8

Materials needed: Guitar/keyboard, chairs, lyric sheets, papers, pens.

Songwriting is a compositional experience that focus on psychosocial (Baker, 2015). Songwriting can be designed to help improve self-concept and externalize feelings and thoughts. To provide a successful experience, music therapist would provide varying levels of structure (Baker, 2015), and interpersonal and emotional support (Gardstrom, 2014).

Both in the group setting and individual setting, patients are encouraged to engage in songwriting process by either writing a whole new song, writing lyrics based on a song they choose, fill in the blank, or doing a song collage. The songwriting structure would be modified by music therapist based on individual or the group's abilities and needs thereby ensure patients participated successfully.

Co-treatment Sessions

Music therapists work also work with other therapists, such as physical therapists (PT), speech and language therapists (SLP), and occupational therapists (OT). Co-treatment patients are often referred by PT, SLP, or OT. In order to provide a co-treatment session with other therapists, music therapists would share the same goals with other therapists.

Music therapy with physical therapy and occupational therapy. When music therapist co-treatment with PT working on the motor goals, music is an auditory stimulation that used to organize patient's movements (Thuat, 2016). For example, when the PT is working with a patient on gait training, the music therapist would play a live music with steady rhythm to help organize gait patterns, as well as maintain the motions. Depending on the patient's gait velocity, music therapist would adjust the music in order to match the patient's gait patterns (Thuat, 2016).

Similar to PT co-treatment sessions, OT sessions can be enhanced with music therapist by using music to organize motions, enhance motivation, and to maintain the concentration of the exercises. Moreover, when working on restore fine motor skills, music therapists would utilize instrumental to arrange a musical experience to target different muscles (Thuat, 2016).

Music therapy with speech therapy. The music therapist would utilize specific neurologic music therapy (NMT) techniques to facilitate speech, vocal production, and improve respiratory system. For example, when working with a patient who has aphasia, music therapist can provide vocal exercise as a warm up before the SLP starts to work on speech. The vocal warm up exercise would activate the oral muscles, as well as the respiratory system. When a patient is having difficulty with a word, music therapist would help create a rhythm or a melody for each syllable that would contribute to the speech output.

Financial Justification

The total budget (see table 3) includes annual expenses and operating costs. The annual expenses include the music therapist's salary, employee benefits, and maintenance

for instruments. While there is no data regarding music therapist average salary in China, it is recommended that starting salary is \$50,000 (USD) per year which derived from 2017 average salary of music therapist's working in hospitals in the United States (AMTA, 2017).

Table 3

Budget

Item	Amount
Music Therapist Salary ¹	\$50,000
Instruments Maintenance fee	\$500
Employee Benefit²	
Endowment Insurance	21% of salary (\$50,000)
Health Insurance	9% of salary (\$50,000)
Unemployment Insurance	2% of salary (\$50,000)
Work-related Injury Insurance	0.5% of salary (\$50,000)
Childbirth Insurance	1% of salary (\$50,000)
Housing Accumulation Fund	12% of salary (\$50,000)
	Total: 73,250

Instruments³	Amount
Guitar (YAMAHA FS830)	\$299.99
Yamaha PSREW300 76-KEY Portable Keyboard	\$289.98
Percussions (6 Medium Wooden Maracas, 6 Egg Shakers, Cabasa, 2 Sleigh Bells, 4 Tambourine, 4 Wrist bells, 4 Foot Tambourine)	\$254.79
Soprano Xylophone	\$420.00

¹ Derived from 2017 average salary of music therapist in general hospital of the United States

² Derived from 2017 five social insurance and one housing fund payment ratio
(<https://www.chashebao.com/shebaotiaoli/18217.html>)

³ All instrument prices derived from West Music (www.westmusic.com)

12" Ocean Drum	\$46.15
2 Recorders	\$9.20
Boomwhackers Set	\$21.50
Diatonic 8-Note Desk Hand bell Set	\$49.94
Q-Chord	\$287.00
Harmony Melodia	\$34.95
Bluetooth Speaker	\$69.99
Drums (Remo 16' Key-Tuned Djembes, 14" Bahia Bass Drum, Remo 13" Versa Tubano Drums, Remo 12" Tunable Djembe, 2 Toca 7" Rope Tuned Djembes, 2 Double Row Tambourine, LP World Beat Key-Tuned Caribe Conga, Remo Paddle Drum Set (8" & 10"), Remo 16" Bahia Buffalo Drum, 3 Pairs of Maple Wood Drum Sticks, 6"-7" Key-Tuned Bongos, 8" & 10" Frame Drum	\$1609.96
	Total: \$3,393.45

Employee benefits are derived from labor law of China (2009). As such, employers are required to provide endowment insurance, health insurance, unemployment insurance, work-related injury insurance, childbirth insurance and housing accumulation fund.

Being an AMTA member is important for professionals as membership provides access to research journals, conferences, and continuing education courses (AMTA, 2019), which provide significant support for clinical work and future research. The maintenance for instruments will fluctuate year to year.

There will be an initial program costs as well, in particular purchasing a complement of instruments and equipment for use in music therapy sessions. For the

program long-term development, using high-quality instruments allow less maintenance fee. Furthermore, high-quality instruments provide high-quality professional music experience.

Since China has no official standards for music therapist education and clinical training, currently China Music Therapy Association is mainly following the standards of American Music Therapy Association (AMTA). According to (AMTA) standards for education and clinical training, a certified music therapist is allowed to develop an internship program after one year full-time clinical work. Thus, after one year of clinical work at HKAH, I would apply supervisor qualification to China Music Therapy Association. I would be able to train two interns at the same time. This internship program not only provide educational clinical objectives for interns, including knowledge, skills, and abilities, the internship program would promote cooperation relationship between the hospital and colleges. Moreover, HKAH would have more resources for future research.

This music therapy program would play an important role in Hong Kong Adventist Hospital by providing a variety of interventions to facilitate motivation of recovery, as well as promote arousal and engagement, learning, neurological rehabilitation, and emotional regulation.

Larger Facility Context

With the mission of Hong Kong Adventist Hospital, this music therapy program would ideally be incorporated into Hong Kong Adventist Hospital as part of interdisciplinary care to provide personalized treatment for patients with goals of facilitating their recovery. Music therapy will be able to fit into the rehabilitation team of

HKAH by provide co-treatment sessions with the physical therapist, speech-language therapist, and occupational therapist. Furthermore, music therapist would provide a different perspective about the patients of HKAH. Lastly, this music therapy program will also provide an opportunity for HKAH to create a culture of community.

Outcomes and Assessment

Music therapy would be an additional service of the comprehensive rehabilitation unit in HKAH, and can be used in conjunction with physical therapy, occupational therapy, and speech therapy. In working with the interdisciplinary team, the inclusion of music therapy can ensure maximum rehabilitation benefits for the patient and a more comprehensive treatment program (Vega, 2012). Participation in music therapy may offer patients access an individual strength and connect with an aspect of their identities that may not only assist in their recovery process, but also offer a means of connection with others, both staff and peers.

Music therapy has been proven to have a significant influence on rehabilitation (Aldridge, 2008). Besides the efficacy of music therapy for patients in HKAH, implementing a music therapy program would provide a unique component of treatment offered at HKAH. This would bring HKAH as forward-thinking, and may be attractive to patients as HKAH would be one of the few hospitals to provide music therapy in Hong Kong. Thus, the addition of a music therapy program would benefit both the patients, and the hospital as a treatment provider.

Conclusion

Music therapy is developing rapidly in China (PwC, 2016). Awareness of the efficacy of music therapy is growing. The ability to address physical, social, emotional, and communication domains in rehabilitation makes music therapy unique and versatile form of treatment. Implementation of a music therapy program in Hong Kong Adventist Hospital will bring the benefits both for the patients and the facility.

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Appendix

Appendix A - Music Therapy Evaluation/ Re-assessment*

Documented as: _____ Documented Time: _____

Approved by: _____ Patient: _____

Medical Diagnosis: _____

Tx Diagnosis: _____

Onset Date: _____ SOC Date: _____

History: _____

Primary Language: _____

Pre-morbid Hand Dominance: R L Hand used in evaluation: R LReason for Referral: Gross Motor Fine Motor Cognition Speech/Language PsychosocialMusical interest/preferences: Rock Country Pop Jazz R&B Gospel Soul PunkSka Oldies Blues Electronic Classical Folk Reggae OtherPast or Present Musical Abilities: Piano Guitar Winds Brass Percussion Other:

Vocal:

Matches sung pitches Singing Humming Attempts Singing and HummingSang Familiar Songs with: Accompaniment Independently

Instrumental:

Matches Steady Beat Plays in Sync with accompaniment Improvisesrhythmically Claps hands Responds to/anticipates musical cues Responds musically to given rhythms

Receptive:

Identifies sound source Identifies familiar song titles when given song's melodyIdentifies familiar song melodies when given song's title Attends to music

Comments: _____

Physical

Vision/Hearing: WNL WFL ImpairedMobility: Independent Walker Wheelchair Needs Assistance Total AssistanceHand/Eye Coordination: WNL WFL ImpairedCrossing Mid-Line: WNL WFL ImpairedBreath Support: WNL WFL Impaired

Comments: _____

Cognition

Alert: Oriented to: Yes No Oriented to: Person Place Time

Long Term Memory: WNL WFL Impaired

Short Term Memory: WNL WFL Impaired

Ability to read text: Yes No

Comments: _____

Communication

Verbal: Yes No

Receptive Language: WNL WFL Impaired

Expressive Language: WNL WFL Impaired

EyeContact: Usually Sometimes Rarely Never

Communicates with: Sentences Phrases Single words Assistive Technology

Communication skills: Asks for assistance when needed Expresses preferences/choices

Responds to MTs questions (verbally/non-verbally) Participates appropriately

Follows simple directions(1 Step) Follows complex directions (2 Steps+)

Vocal Intensity: WNL WFL Impaired Vocal Quality: WNL WFL Impaired

Comments: _____

Social/Emotional

Interacts with: Therapist Nurses Other Neighbors Family

Attends groups: Yes No

Is at ease conversing: Yes No

Mood: WNL WFL Withdrawn Anxious Relaxed Labile Other:

Affect: Normal Intensity Flat Withdrawn Blunted

Emotional status: Approachable Angry Verbally Aggressive Physically Aggressive

Comments: _____

Assessment/Impressions: _____

Short Term Goal(s): _____

Long Term Goal(s): _____

Plan of Care: _____

*Adapted from Northeast Center Rehabilitation, CITY music therapy department.

Appendix B - Music Therapy Progress Note

Patient: _____ Session No. : _____ Documented Date: _____

Type of Session: Individual/ Group Length/Cancel/Absent: _____

Approved by: _____ SOC Date: _____

Short Term Goals: _____

Long Term Goals: _____

Clinical Observations: _____

Plan of Care: _____

Comments: _____

Appendix C - Music Therapy Discharge Summary

Documented As: _____ Documented Time: _____

Approved by: _____ Patient: _____

Medical Diagnosis: _____

Tx Diagnosis: _____

Onset Date: _____ SOC Date: _____

Assessment/Impressions: _____

Discharge Recommendations: _____

Therapy Discharge Location: Home Assisted Living Adult Home To another SNF

Hospital Remains at SNF Other:

Assessment of goals (improvement, extent of progress (or lack thereof) toward each goal):

Appendix D - Reasons for Music Therapy Referral:

Motor Goals

- Voluntary movements
- Motor control
- Coordination
- Balance
- Motor memory
- Respiratory control and strength
- Muscle tension

Speech/Language Goals

- Vocal quality
- Complex language functions
- Speech production
- Speech comprehension

Cognitive Goals

- Spatial awareness
- Attention and focus
- Short- and long-term memory
- Organization skills
- Problem solving skills
- Decision making skills
- Reasoning skills
- Arousal and recovery of wake states

- Meaningful responsiveness
- Agitation/storming symptoms

Social-Emotional & Behavioral Goals

- Self-image/self-esteem
- Symptoms of anxiety
- Symptoms of depression
- Interpersonal relationships
- Group cohesiveness
- Motivation
- Coping skills
- Mood and affect identification
- Social competence/Self awareness
- Emotional outlet

Sensory Goals

- Hearing
- Sight
- Touch
- Sensory input
- Vital body function

*Adapted from Northeast Center Rehabilitation, CITY music therapy department

Appendix E - Resume

Guo Yu

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Education

- State University of New York at New Paltz
Master of Science in Music Therapy (Present)
- Guangzhou University
Bachelor of Musicology in Music Education(Graduated May 2013)

Professional Experience

- Music Therapy Intern, Northeast Center for Rehabilitation and Brain Injury, New York, NY (March, 2018- May, 2019)
- Music Therapy Fieldwork Student, Hudson valley Create Art Therapy Studio, New York, NY (September, 2017- March 2018)
- Music Therapy Fieldwork Student, Westchester Create Art Therapy New York, NY (May, 2017- September 2017)
- Music therapy Practicum Student, Elant at Goshen Nursing Home, New York, NY (January, 2017- May 2017)
- Piano Teacher. Guangzhou, China (February, 2012- January, 2014)

Volunteer Experience

- Zhipei School for Children with Special Needs. Guangzhou, China (March, 2013- May 2013)

Training

- Neurological Music Therapy Training (May, 2019)

Skills:

- Language: Maindarin, Cantonese, English
- Instruments: Piano, Guitar, Saxophone

Appendix F- Annotated Bibliography

Baker, F. A., Tamplin, J., MacDonald, R. A., Ponsford, J., Roddy, C., Lee, C., & Rickard, N. (2017). Exploring the self through songwriting: an analysis of songs composed by people with acquired neuro-disability in an inpatient rehabilitation program. *Journal of Music Therapy, 54*(1), 35-54.

Baker et al. (2017) analyzed 36 lyrics composed by 12 individuals who suffered neurological injuries (spinal cord injuries). The study is hinged on the researchers' perception of the relationship between neurological trauma and the patient's pre-injury self-concept. Engaging in therapeutic songwriting is conceived as a way of enhancing positive changes in the patient's self-concept as well as overall psychological well-being. The analysis establishes that songwriting is indeed an effective way of targeting the patient's prevalent areas of self-concept challenges making it an effective therapeutic tool.

Bower, J., Catroppa, C., Grocke, D., & Shoemark, H. (2014). Music therapy for early cognitive rehabilitation post-childhood TBI: an intrinsic mixed methods case study. *Developmental Neurorehabilitation, 17*(5), 339-346.

Bower et al. (2014) examined the changes in behavior that a music therapy session elicited in a patient with post-traumatic amnesia (PTA). A secondary goal of the study was to determine the effect of the therapy on the patient's agitation. Using video microanalysis and the Agitated Behavioral Scale, the researchers analyzed data collected before, during, and after the music therapy session. Based on the results of the study, the patient displayed behaviors that fell into four categories: neutral, acceptance, recruitment, and rejection in the patient's

immediate clinical setting. Also, the study established that the inclusion of familiar music enhances the attainment of “islands of awareness” and enhances an environment for potential. It was concluded that music therapy sessions that adhere to certain requirements may succeed in harnessing the responsiveness of the patient in fostering cognitive rehabilitation.

Conklyn, D., Novak, E., Boissy, A., Bethoux, F., & Chemali, K. (2012). The effects of modified melodic intonation therapy on nonfluent aphasia: A pilot study. *Journal of Speech, Language, and Hearing Research, 55*, 1463-1471.

. In this pilot study, Conklyn and her colleagues (2012) sought to determine the effectiveness of an adaptation of Melodic Intonation Therapy, which is the Modified Melodic Intonation Therapy (MMIT), as a prevention intervention for stroke patients facing Broca’s aphasia. They study 30 acute stroke survivors with nonfluent aphasia in a randomized controlled single-blind design. The findings established that MMIT produced positive outcomes for the patients when it comes to initiating the recovery of nonfluent aphasia patients. Therefore, this study establishes that adaptations of proven music therapy designs can also be designed when focusing on various cognitive conditions with remarkable success.

Elefant, C., Baker, F. A., Lotan, M., Lagesen, S. K., & Skeie, G. O. (2012). The effect of group music therapy on mood, speech, and singing in individuals with Parkinson's disease—A feasibility study. *Journal of Music Therapy, 49*(3), 278-302.

Elefant et al. (2012) examined the effectiveness of music therapy in improving the speech, singing, and depression symptoms of patients with Parkinson's disease (PD). The study included ten PD patients participating in 20 60-minute weekly

therapy sessions of group singing. The study's findings revealed remarkable changes in six singing quality outcomes. However, no changes were recorded in terms of depressive symptoms or speech quality improvement. The quality of the speech was maintained at a constant level and did not deteriorate further during the time of the intervention. The study reveals that group singing is an effective way of enhancing singing quality and preventing the deterioration of speech quality among PD patients. Therefore, the study is important in that it offers a glimpse of how music therapy sessions ought to be organized to produce the best health outcomes for patients with cognitive speech impairments.

Grau Sánchez, J., Duarte, E., Ramos-Escobar, N., Sierpowska, J., Rueda, N., Redón, S., ... & Rodríguez-Fornells, A. (2018). Music-supported therapy in the rehabilitation of subacute stroke patients: A randomized controlled trial. *Annals of the New York Academy of Sciences*, 1423(1), 318-328.

Grau Sánchez and colleagues seek to consider how effective music supported therapy (MST) can be in the restoration of sub-acute stroke patients' hemiparesis of the upper extremity. The researchers employed a randomized controlled trial in which patients were randomized to the MST or the conventional therapy in complementing the rehabilitation program. Before and after four weeks of these therapies, the patients' motor and cognitive functions, mood, as well as the quality of life (QoL) were evaluated. Also, the researchers carried out a follow-up study to establish whether the motor gains of the patients had been retained. While the findings of the study did not establish any significant differences between the patients undergoing the conventional therapy and those who underwent the MST

for the first two measures, there were significant differences when it comes to the language domain of quality of life. Also, it was established that the pleasure that the music provided also corresponded with the motor improvement for the MST group.

Hurkmans, J., Jonkers, R., de Bruijn, M., Boonstra, A. M., Hartman, P. P., Arendzen, H., & Reinders-Messelink, H. A. (2015). The effectiveness of Speech–Music Therapy for Aphasia (SMTA) in five speakers with apraxia of speech and aphasia. *Aphasiology*, 29(8), 939-964.

In this study, Hurkmans et al. (2015) examined the effectiveness of a version of the music therapy called Speech-Music Therapy for Aphasia (SMTA), which integrates music and speech therapy interventions. Specifically, the researchers sought to determine the effect that the therapy has on improving verbal communications in the daily lives of people with apraxia of speech (AoS) and aphasia. Five patients with these conditions are taken through two weekly SMTA sessions of 30 minutes. The findings of the study reveal that SMTA is an effective treatment intervention as at least three out of the five participants showed positive improvements in outcomes such as articulation of words and phonemes.

Johnson, M. A., Coles, H., Keough, L., King, B., & Reed, M. (2019). Co-delivered integrative music and language therapy: positive outcomes through music therapy and speech-language pathology collaboration. *Perspectives of the ASHA Special Interest Groups*, 4(2), 261-268. doi:10.1044/2019_pers-sig2-2018-0006

Johnson et al. (2019) build on the evidence on the success of music therapy in improving speech and language outcomes to articulate the theoretical principles

and the speech-language outcomes of aphasia patients. The authors developed a co-delivered integrative music and language therapy (CIMaLT) methodology and tested it in a college-based clinic. The results confirm the effectiveness of the therapy in improving speech for patients with aphasia and apraxia. This study adds to the evidence in support of the usefulness of programs that integrate music therapy in managing disorders such as apraxia and aphasia.

Jeong, E. (2013). Psychometric validation of a music-based attention assessment: Revised for patients with traumatic brain injury. *Journal of Music Therapy*, 50(2), 66-92.

Jeong (2013) examined the effectiveness of Music-based Attention Assessment-Revised (MAA-R), which is a 54-item multiple-choice, contour music identification test, in carrying out a precise assessment of the impairments in attention that are brought about by TBI. The researcher investigated the theoretically-based constructs of the MAA-R to determine how the properties of its items work in testing impairments in attention. The study revealed five-factor impairment constructs, namely Sustained short, Sustained-Med to Long, Selective-Noise, Selective & Divided, and Divided-Long. Therefore, the study establishes the effectiveness of MAA-R as a valid and reliable measure of auditory impairments related to TBI.

Muckenhirn, K. & Whiteley, L. (2018). The co-treatment of physical therapy and music therapy and its effect on Parkinson's disease: A multidisciplinary approach. *Physical Therapy Scholarly Projects*, 651, 1-24.

In this thesis, Muckenhim and Whiteley (2018) consider the effectiveness of a multidisciplinary approach that combines physical therapy and music therapy in enhancing the functional mobility of Parkinson's disease (PD) patients. Using a single subject, the researchers explored the impact of the multimodal approach by administering a series of interventions including seated activities, task-specific training, gait activities, and balance and posture. The study confirmed that mobility challenges experienced by PD patients can be significantly improved by applying a multidisciplinary approach including physical and music therapy. The study is important because it expands the scope of the applicability of music therapy as part of other interventions in managing PD.

Pohl, P., Carlsson, G., Käll, L. B., Nilsson, M., & Blomstrand, C. (2018). Experiences from a multimodal rhythm and music-based rehabilitation program in the late phase of stroke recovery—A qualitative study. *PloS one*, *13*(9), e0204215.

Pohl et al. (2018) employed the interpretive interactionist perspective to explore how stroke survivors taking part in group-based music rehabilitative programs perceive their experiences. The study used face-to-face semi-structured interviews to elicit the responses of the participants within four weeks of their participation in the therapies. The findings of the study establishes that the experiences of the participants were positive and that the sessions contributed to the emotional enhancements of the patients. This study offers a unique perspective into the examination of the significance of group music therapy sessions.

Schmid, W. (2014). A penguin on the moon: Self-organizational processes in improvisational music therapy in neurological rehabilitation. *Nordic Journal of Music Therapy*, 23(2), 152-172.

Schmid (2014) considers the mechanisms of improvisational music therapy as employed in neurological rehabilitation. The aim of the researcher is to build on the working mechanisms of the intervention to develop a theoretical framework that highlights these workings. The researcher relied upon two cases from his clinical practice as well as concepts from systems theory. Schmid established that improvisational music therapy is a dynamic system that features seven useful self-organizational processes that enhance neurological rehabilitation.

Slavin, D., & Fabus, R. (2018). A case study using a multimodal approach to melodic intonation therapy. *American Journal of Speech-Language Pathology*, 27(4), 1352-1362.

Slavin and Fabus (2018) sought to establish the efficacy of a modified version of Music Intonation Therapy (MIT) in helping with spontaneous expressive language for people with acquired aphasia and apraxia. By considering how a participant responds to a therapy consisting of both linguistic and vocal protocols, the researchers discovered a significant reduction of apraxia of speech in the patient.

Whittaker, E. & Shuipis, F. (2013). The comparative effects of live and recorded receptive music on pain and endurance in physical rehabilitation for older adults recovering from hip fractures: a pilot study (Unpublished master's thesis). The State University of New York at New Paltz. New Paltz. NY

In this study, Whittaker and Schuipis (2013) sought to establish if there are observable differences in the effectiveness of music therapy when recorded and live music is utilized in the rehabilitation of older patients recovering from hip fractures. Specifically, the researchers aimed to determine how each of these forms affects the patients' pain and endurance. The study established that while both live and recorded music yields positive rehabilitative responses, live music is more effective to a significant extent, especially concerning endurance.

Wilhelm, L. A. (2017). Collaborative practices in adult neurologic rehabilitation: music therapists and physical therapists. *Canadian Journal of Music Therapy*, 23(1), 40-58.

In the rehabilitation of neurological diseases and injuries, Wilhelm (2017) established music therapists as important partners who need to come together with physical therapists in establishing effective rehabilitative environments for patients. The study aimed to establish the extent of the collaboration, the nature of the collaboration, and the benefits and challenges that the collaborative environment presents. The findings of the study indicate that music therapists are important stakeholders in rehabilitative environments and that the benefits of the collaborations outweigh any perceived challenges.