

Music Therapy in Caring for Children

Music can change the world because it can change the people - By Bono

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Abstract

Music Therapy is the clinical and evidence-based use of music to address the needs of patients and families within a therapeutic relationship. It is an established health profession in which music is used within a therapeutic relationship to address physical, emotional, cognitive, and social needs of individuals. After assessing the strengths and needs of each client, the qualified music therapist provides the indicated treatment including creating, singing, moving to, and/or listening to music. The review found some positive effects of music on anxiety, pain, mood, quality of life, heart rate, respiratory rate, and blood pressure and help patient with cancer. Music has mental, physical and emotional effect. Goal of music therapy is to calm a child's fear and anxiety, easing a parent's distress, allowing patients and families to express their feelings and reducing patient's level of pain etc. Conditions like grief, chronic Pain, Autism, Schizophrenia, Alzheimer's Disease, dementia and heart Disease can get benefit from music therapy. Music therapy is used in many settings, including schools, rehabilitation centers, hospitals, hospices, nursing homes, community centers, and sometimes even in the home. Music therapy is used in many settings, including schools, rehabilitation centers, hospitals, hospices, nursing homes, community centers, and sometimes even in the home. Music therapy has two types live and recorded music it can be implemented in active or passive form. Some of the techniques used to achieve this are singing, listening, instrumental music, composition, creative movement, guided imagery, and other methods as appropriate. Present review was undertaken to know the origin of visual imagery technique, existing practices/situation/knowledge/attitude, existing problems/ shortcoming, strategies to improve the situation/minimize or solve problems technique and nursing implications for music therapy.

Keywords: Music Therapy; Alzheimer's Disease; Schizophrenia; Dementia; Autism etc.

Introduction and Need of the Topic

Hospitalization can be frightening for children and families who may feel that they lack control in these unfamiliar surroundings [1,2]. Children facing terminal illness and other chronic illness, undergoing surgeries are supported with music therapy interventions that are both developmentally

appropriate as well as age appropriate. Because music therapy is a powerful, nonthreatening and non-invasive approach, and unique outcomes are possible. Music therapy can help a child manage pain and stressful situations and provide opportunities for socialization, self-expression and communication. Music therapy supports siblings, parents and extended family members throughout the child's illness and during the grief journey [3].

- Music therapy is currently identified as an emerging intervention by the National Autism Center (2015). Music therapy services for young children with ASD (autism spectrum disorder) are very effective for improving communication, interpersonal skills, personal responsibility, and play (Whipple, 2012) [4].
- Music therapy interventions may elicit joint attention (Kalas, 2012) [5]; enhance auditory processing, other sensory-motor, perceptual/motor, or gross/fine motor skills (LaGasse & Hardy, 2013); and identify and appropriately express emotions (Katagiri, 2009) [6].
- Music therapy interventions based on family centered practice may increase social engagement in the home environment and community (Thompson, McFerran, & Gold, 2013) [7].
- A RCT published in the Journal of the American Medical Association (2013) found that children admitted to the emergency department who listened to music during routine procedures showed less distress and reported lower pain scores than those who didn't listen to music. Half of them were Health care providers reported that it was easier to insert the IV line in children who were listening to the music; health providers also reported more satisfaction with the placement compared to those who did not listen to music [8].
- A 2011 review published in the Cochrane libraries found music therapy and music medicine interventions can help cancer patients. The review found some positive effects of music on anxiety, pain, mood, quality of life, heart rate, respiratory rate, and blood pressure [8].
- Another Cochrane review published in 2009 looked for five studies measuring whether music therapy is useful in treating depression. Four of them concluded that patients exposed to music therapy had a greater reduction in symptoms compared to those who didn't listen to music [8].

Review from Literature on Music Therapy

Music therapy is a technique of complementary medicine that uses music prescribed in a skilled manner by trained therapists. Programs are designed to help patients overcome physical, emotional, intellectual, and social challenges. Applications range from improving the well being of geriatric patients in nursing homes to lowering the stress level and pain of women in labor.

• *Origin of Music Therapy*

Music has been used throughout human history to express and affect human emotion. It can change mood, have stimulant or sedative effects, and alter physiologic processes such as heart rate and breathing. The ancient Greeks expressed thoughts about music having healing effects. Many cultures are steeped in musical traditions.

Music therapy formalized as a complementary healing practice in the 20th century, after musicians went to play for World War I and World War II veterans at hospitals across the United States. Musicians were hired to continue working in the hospitals. Degrees in music therapy became available in the late 1940s, and in 1950, the first professional association of music therapists was formed in the United States. The National Association of Music Therapy merged with the American Association of Music Therapy in 1998 to become the American Music Therapy Association [9].

• *Benefits of Music Therapy*

Music can be beneficial for anyone. Although it can be used therapeutically for people who have physical, emotional, social, or cognitive deficits, even those who are healthy can use music to relax, reduce stress, improve mood, or to accompany exercise. There are no potentially harmful or toxic effects.

- a. *Physical Effects:* Brain function physically changes in response to music. The rhythm can guide the body into breathing in slower, deeper patterns that have a calming effect. Heart rate and blood pressure are also responsive to the types of music that are listened to. The speed of the heartbeat tends to speed or slow depending on the volume and speed of the auditory stimulus. Louder and faster noises tend to raise both heart rate and blood pressure; slower, softer, and more regular tones produce the opposite result. Music can also relieve muscle tension and improve motor skills. It is often used to help rebuild physical patterning skills in rehabilitation clinics. Levels of endorphins, natural pain relievers, are increased while listening to music, and levels of stress hormones are decreased. This latter effect may partially explain the ability of music to improve immune function. A 1993 study at Michigan State University showed that even 15 minutes of exposure to music could increase interleukin-1 levels, a consequence which also heightens immunity.

- b. *Mental Effects*: Depending on the type and style of sound, music can either sharpen mental acuity or assist in relaxation. Memory and learning can be enhanced, and this used with good results in children with learning disabilities. This effect may also be partially due to increased concentration that many people have while listening to music. Better productivity is another outcome of an improved ability to concentrate. The term "Mozart effect" was coined after a study showed that college students performed better on math problems when listening to classical music.
- c. *Emotional Effects*: The ability of music to influence human emotion is well known, and is used extensively by moviemakers. A variety of musical moods may be used to create feelings of calmness, tension, excitement, or romance. Lullabies have long been popular for soothing babies to sleep. Music can also be used to express emotion nonverbally, which can be a very valuable therapeutic tool in some settings [9].

• *Goals of Music Therapy*

Music is used to form a relationship between the therapist and the patient. The music therapist sets goals on an individual basis, depending on the reasons for treatment, and selects specific activities and exercises to help the patient progress. Music therapists help their patients achieve a number of goals through music, including

- Calming a child's fear and anxiety
- Easing a parent's distress
- Allowing patients and families to express their feelings
- Reducing patient's level of pain
- Providing sensory stimulation for patients
- Providing support for siblings
- Development of communication, cognitive, motor, emotional, and social skills.
- Improvement of communication, academic strengths, attention span, and motor skills [13].

• *Types of Music Therapy*

Roughly two types of music interventions are distinguished: live music therapy and recorded music.

- a. *In Live Music Therapy* a trained music therapist plays music and applies various therapeutic

techniques to reach a therapeutic goal. One of these techniques is known as music entrainment, in which the music therapist first uses music to match the patient's physiological and emotional states and then gradually changes the music to modify the patient's state.

- b. *Recorded Music* on the other hand, implies listening to pre-recorded music selected by a music therapist, or by patients themselves provided they are old enough to do so.

In general, musical therapy utilizes the power of music to interact with human emotions and affect wellbeing, although there are several different types recognized in the world today.

• *Qualification and Training for Music Therapist.*

Like all therapists, becoming a music therapist requires schooling. A bachelor's degree in Music Therapy is needed, followed by a master's degree in Music Therapy. Although it is not required, it may also prudent to become certified as a recreational therapist or a rehabilitation nurse in order to increase your chances of employment in a wide range of facilities.

Music Therapists may be employed in the following milieus:

- Psychiatric hospitals
- Mental health facilities
- Rehabilitation facilities
- Retirement homes
- Senior centers
- Acute care hospitals [18].

• *Settings for Music Therapy*

Music therapy is used in many settings, including schools, rehabilitation centers, hospitals, hospices, nursing homes, community centers, and sometimes even in the home [9].

• *Music and Children*

The sensory stimulation and playful nature of music can help to develop a child's ability to express emotion, communicate, and develop rhythmic movement. There is also some evidence to show that speech and language skills can be improved through the stimulation of both hemispheres of the brain. Just as with adults, appropriately selected music can decrease stress, anxiety, and pain. Music therapy in a hospital

environment with those who are sick, preparing for surgery, or recovering postoperatively is appropriate and beneficial. Children can also experience improved self-esteem through musical activities that allow them to succeed.

Newborns may enjoy even greater benefits from music. Premature infants experience more rapid weight gain and an earlier discharge from the hospital than their peers who are not exposed to music. There is also anecdotal evidence of improved cognitive function in premature infants from listening to music.

Existing Practices / Situation/ Knowledge/ Attitude

Music is the universal language. It can set the tone, create an atmosphere, change anyone's mood, and be a helpful remedy and therapeutic intervention for certain diagnoses and conditions.

According to the American Music Therapy Association, 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." In short, it is used to treat patients of all ages and numerous symptoms in relation to physical pain, emotional and spiritual well-being, and cognitive health.

• Condition Requires Music Therapy

Studies have shown that music therapy can reduce pain, depression, anxiety, and stress. While music therapy does treat these conditions, it can also be a helpful adjunct therapy for:

- Grief
- Chronic Pain
- Autism
- Schizophrenia
- Alzheimer's Disease
- Dementia
- Heart Disease

• Techniques used for Music Therapy

Some of the techniques used to achieve this are singing, listening, instrumental music, composition, creative movement, guided imagery, and other methods as appropriate. Other disciplines may be integrated as well, such as dance, art, and

psychology. Patients may develop musical abilities as a result of therapy, but this is not a major concern. The primary aim is to improve the patient's ability to function.

- a. Singing develops articulation, rhythm, and breath control. Remembering lyrics and melody is an exercise in sequencing for stroke victims and others who may be intellectually impaired.
- b. Singing and discussion is a similar method, which is used with some patient populations to encourage dialogue.
- c. Listening is an excellent way to practice attending and remembering. It may also make the patient aware of memories and emotions that need to be acknowledged and perhaps talked about.
- d. Learning to play an instrument is an excellent musical activity to develop motor skills in individuals with developmental delays, brain injuries, or other motor impairment. It is also an exercise in impulse control and group cooperation.
- e. Composition of words and music is one avenue available to assist the patient in working through fears and negative feelings.
- f. Creative movement is another activity that can help to improve coordination, as well as strength, balance, and gait.
- g. Guided Imagery and Music (GIM) is a very popular technique developed by music therapist Helen Bonny.
- h. Improvisation facilitates the nonverbal expression of emotion. It encourages socialization and communication about feelings as well.
- i. Listening to music is used as a path to invoke emotions, picture, and symbols from the patient. This is a bridge to the exploration and expression of feelings [9].

• Implementation of Music Therapy

Music therapy can be implemented as an active or passive intervention.

- a. *Active Music Therapy* involves the patient and the music therapist engaging in an interactive process through playing, singing and listening to music. The therapist creates a dynamic environment and encourages the patient to actively participate in the intervention session.
- b. *Passive Music Therapy* involves having the patient listen to self-selected or prescribed pieces of music. Passive music therapy can be

initiated by health care professionals independently, that is, without the assistance of accredited music therapists. The use of passive music therapy is most often investigated in the healthcare context, and it has been established as an intervention that can be effectively implemented by different health care professionals, including nurses, in clinical practice or by patients in various settings.

- *Duration and Method of Delivering Music*

Studies shows that the duration of the music intervention varied between 5 minutes to unspecified time intervals when the intervention was applied during the entire time of the surgical procedure. However, The timing for delivering music therapy differed across studies and the most common time interval was 15-30 minutes per session. The majority of studies administered the intervention using headphones whereas few studies reported the use of a loudspeaker [10].

- *How Music Can Address Anxiety*

Studies have shown that music not only engages us on an emotional level, but also on a physical level. Music therapy has been used successfully with autistic children as well as adults with communication disorders, offering them alternative methods to communicate. Additionally, music can provide life-long skills for stress and anger management, and personal coping skills for feelings of aggression or frustration. But it isn't necessary for we to have an advanced degree or years of study to be able to apply some simple principles to reduce the stress and anxiety that may be present in your child. We can use music to:

- a. Encourage muscle relaxation by using harmony, tempo, and rhythm to recognize and relieve tension.
- b. Teach deep breathing techniques using music as a tool or background.
- c. Use positive self-talk statements enhanced with rhythmic or melodic patterns to reinforce positive self image.

The point of all these exercises is to help child adapt and internalize strategies so they can cope, whether they are dealing with anger, fear, depression, inappropriate behavior, or a poor self image. Giving them tools to use in their youth will help them grow into confident and capable adults who will be able to handle the inevitable stress and anxiety that is a by-product of life.

- *Response to Music Therapy*

Music affects the body in a number of ways. A person's response to music is dependent on a unique combination of physiological and psychological reactions.

- a. Physiologically, music has been shown to have significant effects on listeners by decreasing respiratory rate, heart rate and blood pressure.
- b. Psychologically, music can reduce anxiety, agitation and stress.

Letting child listen to their favorite music has measurable physical effects. It encourages the production of dopamine, which is also know as the "feel good" hormone [11].

- *Functional Mechanism of Music Therapy*

- There is scientific research to back up the idea that music has healing properties.
- One study showed music's anti-anxiety properties, another found music was associated with higher levels of immunoglobulin A, an antibody linked to immunity [12].
- The brain's reward center responds to music – a brain structure called the striatum releases the chemical dopamine, associated with pleasure.
- Music therapy can activate the prefrontal and limbic areas of the brain, the same areas that are involved in pain perception, thereby modulating the emotional component of pain perception.
- Music therapy is proposed to function through CNS modulation, whereby music stimulates descending nerve impulses traveling from the brain to the spinal cord, closes the neural gate and inhibits the effects of nociceptive fibers. Music therapy can modify pain perception at the neural gate through its effect on mental state and emotion [13].

- *Music Therapist and ASD Children*

Music therapists accept referrals & provide assessments and interventions to individuals with ASD & their families in public schools, family's homes, private practice settings, preschools/ daycares, music therapy agencies, early intervention programs, treatment centers, support groups, hospitals, & various venues within the community. The role of the music therapist may be as a provider of direct services (i.e., via individual & group

sessions), as a coach to parents, or as a consultant to family members/caregivers, educators, or team members [14].

“Music Therapy does many things to improve the quality of end-of-life care. Music is a universal bridge between people and their experiences and it is such a tender, healing moment person can be embraced by music. Music therapy provides refreshment along the way that has the power to revitalize, remind and recover. The employees and volunteers who are called to do hospice work are uniquely talented and challenged. We are always seeking inventive resources so that there is never a time when we have to say that there is nothing more that we can do. It is a great resource for our employees and volunteers to have the option of music therapy to offer patients and families. No matter how difficult that case is or how far away the sick person seems to be, music therapy is almost always a resource that helps our staff and volunteers appreciate the dignity and story of the person we’re caring for [15].”

Existing Problems/ Shortcomings on Music Therapy

- Unfortunately, music can also cause some serious harm in the form of tinnitus or other permanent hearing loss/damage. Tinnitus can result from listening to music at high volumes or amplitudes. Tinnitus is a buzzing in the ears that ranges from slight to severe. Tinnitus is a highly subjective condition; some patients claim to perceive sounds of animals or even popular songs. Music has also been known to cause epileptic seizures, often resulting in psychiatric complications. In a book devoted to the studying of these rare cases, Oliver Sacks, a professor of clinical neurology at Columbia University, writes of a woman who could not listen to a certain popular song for more than half a minute without succumbing to violent convulsions.
- The science of music therapy, with its roots in the first half of the twentieth century, is still relatively young. With the proliferation of case studies, music is starting to make a comeback in the world of medicine, an area that has been relatively uncaring towards music therapy because of its seemingly mystical beginnings [17].
- There is little disagreement among physicians that music can be of some benefit for patients, although the extent of its effects on physical well-being is not as well acknowledged in the medical community. Acceptance of music therapy as an adjunctive treatment modality is increasing, however, due to the growing diversity of patient populations receiving music therapy. Research has shown that listening to music can decrease anxiety, pain, and recovery time.
- Despite its documented benefits, there is limited knowledge of the extent to which music therapy is implemented in day-to-day practice. Empirical evidence supports the effectiveness of music therapy in alleviating anxiety and pain in different patient populations. However, it remains unclear if and to what extent health care professionals are using this intervention in practice for the management of anxiety and pain, which is an issue of knowledge translation. Specifically, it is unknown if nurses are aware of the beneficial effects of music therapy and provide it to manage anxiety and pain experienced by patients in different settings.
- Many people believe that music therapy can only help those with musical ability; this is a common misconception. Music therapy has been shown to stimulate many of the same parts of the brain in musical as well as in nonmusical patients. Another common misconception is that the only style of music used in therapy is classical music. The music a therapist uses with a patient is highly dependent on the patient’s preferences, circumstances and goals.
- Music therapy has been shown to be efficacious in experimental studies. However, there is little empirical research knowledge about what elements of music therapy influence its effectiveness in clinical practice [16-17].
- A number of studies have examined evidence or research use in nursing and have found that a significant gap exists between the implications of research evidence and its adoption into clinical practice as may be the case for music therapy. Although research supports the effectiveness of music therapy as an effective intervention in managing pain and anxiety, it remains unclear if nurses use music therapy in clinical practice. Thus, the use of music [18].

Strategies to Improve the Situation / Minimize or Solve Problems

- Clients with active hallucinations or psychosis should not be presented with highly evocative music (songs that may stimulate imaginable or sensory-based responses).

- Some clients in high arousal states or acutely depressed may be sound sensitive – with or without aggravated tinnitus symptoms. Therefore, volume levels should be relatively low.
- Clients with difficulty in self-regulation and/or experiencing some level of dissociative symptomology may be easily aroused by highly evocative music. While this may be useful in a controlled therapeutic setting, caution is advised in unsupervised settings (AMTA).
- Continued research and advocacy efforts, as well as collaborations with lobbyists, business consultants, and credentialing/licensure experts to develop progressive strategies, will be crucial for global development and sustainability of the field (music therapy).

Nursing Implications for Music Therapy

- Nurses must learn about how to apply music therapy in clinical practice for the management of physical and psychological (e.g. pain and anxiety) symptoms.
- The client must have access to the relevant information about the risks, benefits and effects of the treatment, and other available options, to make an informed choice.
- Nurses have the authority to perform procedures that fall within one of the controlled acts authorized to nursing, or procedures that are not considered controlled acts. When considering the appropriateness of performing an intervention, nurses should keep in mind the following factors:
 - Not all procedures that may cause harm are included in the controlled acts; and each nurse is accountable for her/his actions and for acting within the scope of nursing practice.
 - Consent from the client is required regardless if the therapy is requested by the client or proposed by a health care practitioner.
- Nursing and administrative authorities would make this decision. If the complementary therapy is not a recognized intervention, nurses may wish to advocate for it to be recognized.
- Nurses need the necessary assessment skills to carry out the ongoing assessment and evaluation of the effects of the therapy. The entire nursing process must be used as a basis

for incorporating music therapy and visual imaginary technique into a plan of care.

- Nurses must be able to evaluate the effect of the complementary therapy on the overall health status of the client, and to recognize when additional skill, knowledge and expertise are required [19].

Conclusion

There is plenty of evidence to show that music therapy used in health care settings can help calm patients. And given there are no side effects associated to these therapy, it's certainly a treatment worth trying. Music therapy when combined with other modalities may be more effective than when presented alone, and that both can reduce the amount of pharmacological agents needed to control other physiological and psychological symptoms (e.g. pain and anxiety.). Greater understandings of the role these therapies in clinical disorders will help drive forward advances in both theory and treatment.

References

1. Rainbow Hospice and Palliative Care, American Music Therapy Association.
2. American Music Therapy Association <http://www.musictherapy.org/>.
3. Music therapy, Children's health. www.childrens.com/.
4. Whipple, J. Music Therapy as an effective treatment with Autism Spectrum Disorders in early childhood: A meta-analysis. In P. Kern & M. Humpal (Eds.), *Early childhood music therapy and autism spectrum disorders: Developing potential in young children and their families*. London and Philadelphia: Jessica Kingsley Publishers. 2012, pp.59-76.
5. Kalas, A. Joint attention responses of children with autism spectrum disorder to simple versus complex music. *Journal of Music Therapy*. 2012;49(4):430-52.
6. Katagiri J. The effect of background music and song texts on the emotional understanding of children with autism. *Journal of Music Therapy*, 2009;46(1):15-31.
7. Thompson, G., Mc Ferran, K. & Gold, C. Family-centered music therapy to promote social engagement in young children with severe autism spectrum disorder: A randomized controlled study. *Child: Care, Health & Development*. 2013.
8. Evidence based living. Evidence of music therapy. <http://evidencebasedliving.human.cornell.edu/>.

9. Gale Encyclopedia of Alternative Medicine. Music therapy.
 10. Poovishnu Devi T, Noble S, Monisha R, Mohanasundari S.K. & Mirium J, Comparison of Effectiveness of Visual Imaginary Technique And Music Therapy On Anxiety and Depression In Moderate Chronic Obstructive Pulmonary Disease. *Ijirset*. 2017;6(7):12422-26.
 11. With autism spectrum disorder: A survey of clinical practices and training needs. *Journal of Music Therapy*. 2013;50(4):274-303.
 12. Daniel Levitin. *neuroscience of music*. McGill University in Montreal. 2013.
 13. Robert Zatorre, music emergency. Montreal Neurological Institute, told CNN last year.2013
 14. News medical life science. Types of music therapy. www.news-medical.net.
 14. Music therapy, Children's health. www.childrens.com.
 15. Patricia A. Ahern, RN, MBA, President/Executive Director, Rainbow Hospice and Palliative Care.
 16. College of Nurses of Ontario Practice Guideline: Complementary Therapies. 2014.
 17. Kain ZN, Caldwell-Andrews AA, Krivutza DM, Weinberg ME, Gaal D, Wang SM, Mayes LC. Interactive music therapy as a treatment for preoperative anxiety in children: a randomized controlled trial. *Anesth Analg*. 2004 May;98(5):1260-6.
 18. Kain ZN, Caldwell-Andrews AA, Krivutza DM, Weinberg ME, Gaal D, Wang SM, Mayes LC. Interactive music therapy as a treatment for preoperative anxiety in children: a randomized controlled trial. (*Anesth Analg*. 2004 May;98(5):1260-6.
 19. College of Nurses of Ontario Practice Guideline: Complementary Therapies. 2014.
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