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Music Therapy Assisted Stress Management

The purpose of this paper is to describe how music therapy can be a useful stress management intervention. **Other goal terminology or considerations that hospice clinicians often refer to include music enrichment, relaxation, and comfort care.**

Music therapy defined: using music to achieve non-musical goals. When the music therapist works with a patient to help manage stress, the goal is not to make beautiful music but instead to decrease the patient's perception of stress by the utilization of music. If beautiful music is made or if the patient reminisces in a positive manner, those outcomes are secondary to the primary goal of reducing stress.

Stress is defined in Webster's dictionary: strain or force; especially, force that deforms the shape of a body subjected to it; any strain or pressure on the mind or body. Since the beginning of time man has experienced stress. One can look at Maslow's hierarchy of needs and see that the earliest culture's needs, i.e., the need of food and shelter held as much importance as our needs for success and self-actualization. Similarly the animal kingdom experiences stress in the form of territorial-ism, the need for food and shelter, etc., and it is here that the "fight or flight" reaction to stressful situations is very evident. "This widely accepted theory emphasizes physiological changes as a function of emotional arousal" (Hanser, 1985). One can consider accounts of, for example, a person lifting a car to free another person, or moments of extreme strength to get free of an attacker to realize the body's adaptation capabilities. It is also these kinds of physiologic changes that allow stress to affect us in a negative way, when our body's defense mechanisms are called upon too often. Some of the most common physiological changes are pulse or heart rate, blood pressure, galvanic skin response and temperature, EMG, and EEG (p. 196). Experts estimate that stress contributes to 75% of all medical disorders and may be the single most significant factor related to suicide in the United States. (p. 193). Stress and anxiety are typically assessed using one or more of the following: behavioral observations, interviews, and psychological tests (Hanser, 1985).

Music has been utilized as a powerful healing tool for thousands of years. "In Western civilization, Greek philosophers encouraged students to use music and singing to eliminate negative emotional arousal such as stress, fear and anger" (Tsao, et al., 1991). And so Bloom (1987) states Eastern civilizations, namely

Buddhists and Hindus, traditionally used prolonged chants and harmonious rhythms to stimulate and awaken “the powerful centers of energy in their body” (Tsao, et al., 1991). Such accounts citing the purposeful use of music by past cultures implies that music is closely associated with emotion and well-being.

How music affects us is not mystical as once believed. Critchley and Henson (1977) as cited in Tsao et al., 1991 conclude there are at least three intrapersonal communication processes implied in the music health relationship.

First, because of its nonverbal characteristic, music can filter through the auditory cortex to the center of the limbic system which is the center of emotional processing. Second, music can reinforce the corpus callosum to stimulate memory response. Third, music can be used to stimulate endorphins that create a positive kind of emotional arousal- a feeling of being in love.

Since the formalization of music therapy in the mid 1940's much information has emerged describing the physiological effects of music. McFarland (1985) studied 100 subjects who each listened to one sedative music selection and one stimulation selection. The results here showed that sedative music increased individual's skin temperature and stimulative music affected them in an opposite manner. McFarland's study is significant in that the increased temperature levels correlate directly with the degree of physiological relaxation (Tsao, et al., 1991). A very relevant study by Kibler and Rider (1983) looked at the effects of music and relaxation on stress as measured by finger temperature. Results indicated that while music and relaxation were effective individually in reducing stress, the treatments combined were even more effective (p. 94). Overall, heart and pulse rates, blood pressure, skin responses, and muscular/motor responses have all been clinically proven to be affected by music, but in no particular direction (Bonny, 1986).

Another area that researchers look at is music's audioanalgesic effect. This involves endorphin production through a music induced “thrill” response. Goldstein, (1980) at the Stanford Addiction Research Center, used preferred music to stimulate “musical thrills.” Besides the aspect of the study that actually looked at endorphin release, it should be noted that when Goldstein asked 250 research subjects what gave them the greatest thrill, 96% of them mentioned music.

A technique used by music therapists called entrainment is also very effective for stress and pain management. Entrainment is: one thing time locking into another (Rider, 1985). In the 1700's German scientists, working with grandfather clocks in their workspace, left one night after setting the clocks, noticing all the clock's pendulums were swinging randomly. The next morning they found that all of the pendulums were swinging together, again, one thing time locking into another. Entrainment is a natural phenomenon of physics. With this idea of entrainment, the

music therapist matches, for example, the music's tempo to the patient's breath rate (heart rate or mood can also be considered). Entrainment is complete when the music therapist can affect change in the patient's physiology through musical variation. Example: If a painful patient is anxious and breathing rapidly, the music therapist will play (live) music at the speed (tempo) that matches the patient's rapid breath rate. When it is noticed that the patient is focused on the music, the music therapist will gradually begin to slow the music down, thereby effectively slowing the patient's breath rate at the same time. This completes the entrainment process. In an entrainment study Rider (1985) used different types of music and imagery to reduce pain and effect muscle relaxation. The entrainment music, which was one of five conditions in which the prevalent mood shifted from tension to relaxation, was significantly the most effective condition in reducing pain and EMG levels. This described relaxation response is key to having one benefit from the purposeful use of music to reduce stress.

Another key to music's well-documented positive effects on pain and stress management and entrainment is preferred music. Through assessment, the music therapist will help the patient (or family) identify music that will elicit positive, euphoric or sedative responses. Or very simply, what music does the patient have the most positive associations? When we can identify music that elicits feelings and emotions of past, positive experiences the patient can use these conditioned responses to override feelings of anxiety and pain. Most of the above mentioned studies utilize preferred music.

Music as a Primary Cognitive Experience

What this means is that when we experience music we cannot control the feelings and emotions it (music) brings about. All sensory experiences are like this, i.e., seeing, touching, tasting, smelling and hearing. As an example, if we are in a mall and a fragrance gets our attention and that fragrance is one that our grandmother wore, we will think about our grandmother whether we want to think of her or not. We cannot control this. This is what is meant by music being a primary cognitive experience. Similarly, when we hear a piece of music that reminds us of Christmas, whether we want to think of Christmas or not, we will. Through assessment the music therapist tries to identify music (preferred music) that can be utilized for the purpose of eliciting positive, conditioned responses to help as a positive diversion from pain.

Possible Music Therapy Goals

By utilizing live, preferred music the patient will:

- verbalize that their stress level has decreased...
- display physical signs of decreased stress levels such as singing, brighter affect, spontaneous talk about non-stressful topics, positive reminiscence, etc...
- be able to relax enough to sleep...

Music Therapy Procedure

I) Music therapy assessment

II) When possible, music therapist will work with the patient and family prior to the patient experiencing pain, providing music therapy, to build therapeutic rapport, to accurately identify and implement beneficial music repertoire, to develop positive associations and conditioned responses to the live music sessions and to expose family to the goals and benefits of music therapy.

III) During stressful/painful times the music therapist will implement live music for the aforementioned goals. Other general considerations include the use music therapy for alternative focus, positive diversion, stress management, family togetherness, spiritual and emotional support as well as to support comfort and relaxation.

IV) Group/family processing of music therapy experience is sometimes called for. Often, music stimulates family interaction including singing as well as many emotional responses from the patient, family members and even staff. The music therapist will discuss these responses and provide direction and support.

SENSORY IMPAIRMENTS

Hearing impairment: for those with hearing impairments various music therapy techniques can be implemented. 1) during live music, music therapist can gently tap foot on hospital bed wheel or rail to accentuate the beat, tempo and energy of the music 2) during live music, music therapist has amplified hearing aid headphones that the client can wear if they desire and are comfortable 3) during live music, music therapist can place clients hand on the guitar body or on the music therapist's back to experience the vibrations of the music (guitar) and singing (chest cavity) *** only when appropriate and when client agrees 4) during live music, music therapist can offer client the use of music therapy songbook with large print.

Visual impairment: for those with visual impairments various music therapy techniques can be implemented. 1) during live music, music therapist can support and encourage client to sing - to more readily engage in the live music 2) during live music, music therapist can offer client the use of various percussion instruments to again, more readily engage in the live music experience.

Speech impairment or aphasia: for those with speech impairments various music therapy techniques can be implemented. 1) during live music, music therapist can support purposeful singing of preferred music 2) music therapist, through assessment can determine the client's cognitive comprehension speed (CCS) to determine how slow (or fast) the music must be presented to let the client successfully engage.

From: "Aphasia, Speech and Language Therapy" by Christine Cadena (2007)

Because aphasia is specifically a disorder that involves a loss of language recognition and retrieval, music therapy can provide a unique option in treatment. Using music and songs that are familiar to the elderly patient, areas of the brain that store language retrieval and language recognition capabilities, can be strengthened. Because many songs utilize short phrases, the use of familiar lyrics can provide for a language recognition exercise in music therapy programs.

REFERENCES

- Bonny, H. (1986, April). Music and Healing. Paper presented at the meeting of the American Holistic Medical Association. Seattle, WA.
- Cadena, Christine (2007). Aphasia, Speech and Language Therapy.
- Goldstein, A. (1982). Brain frontiers. Omni Magazine, 112.
- Good, M., Anderson, G.C., Stanton-Hicks, M., Grass, J.A., & Makil, M. (2002). Relaxation and music reduce pain after gynecological surgery. Pain Management Nursing, 3(2): 61-70.
- Hanser, S.B. (1985). Music therapy and stress reduction research. Journal of Music Therapy, 22(4), 193-206.
- Hodges, D.A. (Ed.) Handbook of Music Psychology. National Association for Music Therapy/Lawrence, Kansas, 1980.
- Miluk-Kolasa, B., Matejek, M. & Stupnicki, R. (1996). The effects of music listening on changes in selected physiological parameters in adult pre-surgical patients. Journal of Music Therapy, 32, 2-21.
- Longfield, V. (1995). The effects of music therapy on pain and mood in hospice patients. Unpublished master's thesis: Saint Louis University, USA.
- Rider, M.S., Floyd, J.W., & Kirkpatric, J. (1985). The effect of music, imagery, and relaxation on corticosteroids and the re- entrainment of circadian rhythms. Journal of Music Therapy, 22(1), 46-58.
- Tsao, C.C., Gordan, T.F., Maranto, C., Lerman, C., & Murasko, D. (1991). The effects of music and biological imagery on immune response. In C. Maranto (Ed.), Applications of Music in Medicine (pp.85-97). Washington, DC: National Association for Music Therapy, Inc.

