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Music Therapy Assisted Pain Management

The purpose of this paper is to describe how music therapy can be a useful pain management intervention.

Music therapy defined: using music to achieve non-musical goals. When the music therapist works with a patient to reduce pain, the goal is not to make beautiful music but instead to decrease the patient's perception of pain 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 pain.

Many studies and observations have determined that music has the powerful capability of decreasing the perception of pain. One widely accepted theory is that as an individual focuses on (preferred) music, neuro pathways are utilized to perceive the music thus leaving fewer neuro pathways to perceive pain (D. Lane, PhD, personal communication, 1992). In a 1988 study Karim found that "both music and relaxation were powerful treatments for reducing migraine and tension headaches" (Tsao, et al., 1991). Music and relaxation were also used in a 1987 study titled "The Use of Music Therapy in Pain Clinics."

When a patient entered a session experiencing high levels of pain, he or she often left the session saying much less or no pain was felt. A decrease in the use of medications was observed in approximately 70% of the patients, and the patients often substituted listening to music for pain medication (Sedei Godley, 1987).

The area of childbirth has produced probably the most dramatic results with regard to music's effect on pain. Hanser emphasized the "autoanalgesic" effect of music to decrease pain through rhythmic breathing. Here, she helped women relax by prompting positive associations with music, and results were that 100% of the experimental mothers experienced less pain while music was played during labor (Bonny, 1986). And finally, regarding music's psychophysiologic effects, Helen Bonny (as cited in Tsao et al., 1992) alludes to studies with coronary intensive care patients finding that those who listened to sedative music increased their tolerance for pain and decreased their need for pain medication. Ms. Bonny's explanation for this: "sedative music is capable of stimulating the brain to produce peptides which are natural pain killers." And similarly, Dr. Spintge of West Germany reported that music to reduce anxiety and pain in dental-surgery patients reduced blood levels of the stress hormone ACTH, but raised levels of the endogenous opiod beta-endorphin (Harvey, 1985).

A technique used by music therapists called entrainment is also very effective for 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.

One key to music's well-documented positive effects on pain 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.

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 pain level has decreased...
- display physical signs of decreased pain levels such as singing, brighter affect, spontaneous talk about non-stressful topics, positive reminiscence, etc...
- ask to decrease or postpone pain medication...
- 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 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.

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