

The Effects of Music Therapy on Pain in Patients with Neuropathic Pain

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■ ABSTRACT:

The aim of this study was to investigate the effect of relaxing music on pain intensity in patients with neuropathic pain. A quasi-experimental study, repeated measures design was used. Thirty patients, aged 18–70 years, with neuropathic pain and hospitalized in an Algology clinic were identified as a convenience sample. Participants received 60 minutes of music therapy. Classical Turkish music was played to patients using a media player (MP3) and headphones. Participants had pain scores taken immediately before the intervention and at the 30th and 60th minutes of the intervention. Data were collected over a 6-month period in 2012. The patients' mean pain intensity scores were reduced by music, and that decrease was progressive over the 30th and 60th minutes of the intervention, indicating a cumulative dose effect. The results of this study implied that the inclusion of music therapy in the routine care of patients with neuropathic pain could provide nurses with an effective practice for reducing patients' pain intensity.

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Neuropathic pain is a complex phenomenon including serious, independent pathophysiological mechanisms in both peripheral and central nervous systems, and it is associated with partial injury and dysfunction of the peripheral or central nervous system and change in its excitability (Gorden & Love, 2004; Tuncer, İpçi, Aslantaş, & Ulugöl, 2006). The International Society of Pain describes neuropathic pain as "the pain caused by a primary lesion or a temporary disorder in the peripheral or central nervous system" (Meskey & Bogduk, 1994). Neuropathic pain is typically defined as a severe pain (Lambert, 2010). The most common areas where neuropathic pain is felt are the peripheral nerves, plexus, dorsal stem ganglions, spinal cord, and brain. Although its mechanism is not fully understood, neuropathic pain is known as a complex and multifocal pain with severity that increases over time. In patients with neuropathic pain, the treatment is directed at personal symptoms and findings as well as the underlying mechanisms. Primarily, the patient's pain should be alleviated and quality of life should be elevated, because pain lowers the quality of life by affecting the individual physically, spiritually, and socially. Thus, controlling the pain experienced by individuals is of great

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importance to ease the pain of the individuals, elevate their quality of life, reduce complications, and decrease the hospitalization period (Pasero, 2004; Özyuvaci, Altan, & Yücel, 2003; Özveren & Uçar, 2009).

Currently, the most common way of controlling neuropathic pain is using pharmacological methods. Analgesic treatment is also the most common treatment method of alleviating the pain, as it takes effect more rapidly and is easily applicable. However, unconsidered and intensive use of analgesics has some negative aspects. Analgesics can affect some physiological functions negatively, and, particularly when opioids are used, the individual can develop tolerance as a drug is administered in increasing doses. In addition, unconsidered and inappropriate use of analgesics places a burden on both the individual and the economy of the country (Arslan & Çelebioğlu, 2004; Nester & Hale, 2002). With neuropathic pain, other treatment strategies include rehabilitation, cognitive-behavioral treatment, and intervention. Music therapy, which is one of the cognitive-behavioral treatment methods, can also be used in addition to pharmacological methods to control pain, especially when a patient is reluctant to use traditional treatment methods (e.g., analgesics on a daily basis) or is concerned about the toxic effects of the medicines (Chlan, 1999; Chlan, Engeland, Anthony, & Guttormson, 2007). Paterson and Zderad described art (e.g., music, painting) as an important part of the nursing discipline (McCaffrey & Good, 2000). Music has become an important part of different medical settings over the last decades (Esch, Guarna, Bianchi, Zhu, & Stefano, 2004). Music therapy is a branch of health care dedicated to the use of music for emotional, physical, functional, and educational improvement in a broad range of settings and conditions (Esch et al., 2004). In previous studies, music has been shown to have positive physiological and psychological effects on patients (McCaffrey & Good, 2000). Music therapy has been used to decrease pain and discomfort for thousands of years (Smolen, Topp, & Singer, 2002). Relaxing or sedative music is characterized by a slow tempo, repetitive rhythm, gentle contours, and strings (Knight & Rickard, 2001). Relaxing music has been shown to influence a person's emotional feelings and physiological responses. Calm and soothing music is found to be the most appropriate in reducing pain (Wong, Lopez-Nahas, & Molassiotis, 2001).

LITERATURE REVIEW: MUSIC AND PAIN

As one of the oldest treatment methods, music therapy is known to have been used with the aim of treating patients in many cultures for four thousand years (Chlan,

2002). In clinical practice, music therapy is a treatment method ensuring relaxation, healing, and comfort. Music therapy is used therapeutically in hospitals, in intensive care units, through palliative care, during surgical operations, in departments of psychiatry, oncology, gynecology, and pediatrics, in coronary care units, during radiation treatment and chemotherapy, in cases in which medical procedures are applied, for treatment of symptoms such as pain and anxiety, for activation of immune functions, for increasing the body's resistance, for elevating the quality of life, and for moral recovery (Almerud & Peterson, 2003).

Complementary and alternative medical (CAM) therapies are "a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine and strategies that have not met the standards of clinical effectiveness". A complementary therapy is used along with any conventional treatment, but alternative therapies are used instead of conventional treatment (Wong & Smith, 2006). Alternative therapies are biologically invasive and costly, but complementary therapies are a noninvasive, safe, and inexpensive way to reduce symptoms of main care. Complementary therapies include massage therapies, acupuncture, fitness, and mind-body techniques such as music therapy and meditation (Cassileth & Keefe, 2010). In many cultures, music is a complementary factor in the healing process and still constitutes a significant component of medicine. Pain alleviation is the most outstanding and attention-grabbing effect among many benefits of music therapy (Roy, Peretz, & Rainville 2008). By influencing the brain in various ways, music makes a positive impact on both neural functions and hormonal activity. There has been argument as to whether music therapy ensures relaxation by influencing the autonomous nervous system. In addition, many researchers have discussed music therapy in terms of a recovery model making positive impacts on physiological functions (Krout, 2007). Music therapy is a natural intervention having an effective role in physical, psychological, social, emotional, and moral recovery; it is easy to apply and to use; it is cost-effective; and it does not have adverse effects (Chlan, Tracy, Nelson, & Walker, 2001; Chlan, 2002). Rossi (1993) reported that music causes changes in the mind-body process as well as in the autonomic immune, endocrine, and neuropeptide systems. Music (Thaut, 2005) is perceived by the temporal lobe, which is the hearing center in the brain, and causes stimulus in the thalamus, medulla, hypothalamus, midbrain, and pons (Le Scouarnec et al., 2001). Music influences the right hemisphere of the brain, causes physiological responses through the limbic system, results in

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