

# Integrative Review: Effects of Music on Cancer Pain in Adults

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**D**espite advances in pain neurophysiology, assessment, and treatment, the burden of cancer pain is significant and one of the most common and distressing symptoms in patients with cancer (Hui & Bruera, 2014). This challenge continues to increase because of the rising global prevalence of pain and cancer. The World Health Organization estimates that limited or no treatment for cancer pain affects as many as 5.5 million people (Popat, McQueen, & Feeley, 2013). In addition, an estimated 12 million individuals are diagnosed with cancer each year throughout the world, with 7 million people dying annually (Popat et al., 2013). Cancer pain, a common and feared symptom among patients, is broadly classified into nociceptive (somatic and visceral) and neuropathic pain. Nociceptors, sensory receptors preferentially sensitive to noxious stimuli, are primary afferent nerves with peripheral terminals. Neuropathic pain is characterized as a complex combination of syndromes with inflammatory and ischemic components involving multiple sites (de la Cruz & Bruera, 2010). Neuropathic pain related to treatment surpasses tumor effects as the major contributor to chronic pain in survivors (Paice, 2011). Estimates indicate that pain affects about 49%–57% of survivors and 56%–75% of patients with extensive disease (Hui & Bruera, 2014). Based on a systematic review of the past 40 years, prevalence of cancer pain for patients at all disease stages was reported to be 53%, with more than 33% of patients rating their pain as moderate to severe (van den Beuken-van Everdingen et al., 2007).

Recommendations to improve pain control include evidence-based clinical practice guidelines that integrate a variety of pharmacologic and nonpharmacologic options (Miaskowski et al., 2005; Paice & Ferrell, 2011). Nonpharmacologic interventions are categorized as alternative medical systems, manipulative and body-based methods, energy therapies, and mind-body medicine (Bardia, Barton, Prokop, Bauer, & Moynihan, 2006). Music is frequently classified within the category

**Problem Identification:** To evaluate the literature for music's effect on adult cancer pain.

**Literature Search:** An electronic literature search from 1986–2014 was conducted to evaluate the effects of quantitative music among adults with cancer pain in settings including homes, hospitals, and palliative care units. Databases used were PubMed (MEDLINE<sup>®</sup>) and Scopus.

**Data Evaluation:** The study designs, methods, measures, outcomes, and limitations were evaluated independently by the primary author and verified by the second author. The primary outcome measure of interest was the effect of music in cancer pain.

**Synthesis:** Of 82 studies, 5 of them—totaling 248 participants—met eligibility criteria. Review of findings suggests a paucity of innovative approaches for using music to mitigate cancer pain among adults. Psychological outcomes, anxiety, depression, and mood were understudied. Advanced pain, multiple cancer types, and lack of racial diversity characterize the samples.

**Conclusions:** Modern treatments for cancer have improved survival rates; however, patients often experience tumor- and treatment-related pain. Pharmacologic and nonpharmacologic methods may minimize cancer pain. The use of music as an adjunct to pain medication requires additional studies, particularly on mechanisms of its effect on pain among diverse, large samples with multiple cancer pain types. A limitation of this review is the small number of available studies to date.

**Implications for Practice:** The evidence for music therapy in the management of pain is limited. Integrative methods using music may represent an important intervention that nurses may be able to suggest as an inexpensive, nontoxic, and readily available intervention for potentially minimizing cancer pain.

**Key Words:** cancer; pain; music; complementary therapies; depression; randomized controlled trial

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of mind-body interventions (Bardia et al., 2006; Elkins, Fisher, & Johnson, 2010). Complementary methods such as music are gaining increasing interest among patients and providers and may be administered as an