

# Music Versus Distraction for Procedural Pain and Anxiety in Patients With Cancer

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**Purpose/Objectives:** To test the hypotheses that the effects of a music intervention are greater than those of simple distraction and that either intervention is better at controlling procedural pain and anxiety than treatment as usual.

**Design:** Randomized, controlled experiment.

**Setting:** A midwestern comprehensive cancer center.

**Sample:** 60 people with cancer having noxious medical procedures such as tissue biopsy or port placement or removal; 58 provided usable data.

**Methods:** Participants completed measures of pain and anxiety before and after their medical procedures and provided a rating of perceived control over pain and anxiety after the procedure.

**Main Research Variables:** Procedural pain, state anxiety, and perceived control over pain and anxiety.

**Findings:** Contrary to hypotheses, outcomes achieved with music did not differ from those achieved with simple distraction. Moreover, outcomes achieved under treatment as usual were not significantly different from those obtained with music or distraction interventions. Some patients found that the interventions were bothersome and reported that they wanted to attend to the activities of the surgeon and the medical procedure itself.

**Conclusions:** The effects of music, distraction, and treatment as usual are equivocal. In addition, patients have individual preferences for use of distraction during painful or anxiety-provoking procedures.

**Implications for Nursing:** Patients having noxious medical procedures should be asked about their desire to be distracted before and during the procedure and offered a strategy that is consistent with their preferences.

## Key Points . . .

- Patients with cancer frequently experience noxious medical procedures that may provoke pain and anxiety. Cognitive-behavioral interventions such as music or distraction may help control pain for some patients having procedures.
- Although music may serve as a distracter, limiting attention available for pain, it also may influence pain by altering emotions, thoughts, and moods and by stimulating relaxation. However, in this study, the effects of music did not differ from those of simple distraction.
- Some patients want to attend to activities of the procedure and members of the healthcare team who are present. These patients may find cognitive-behavioral interventions to be bothersome and may prefer not to use them during the procedure.

ducing relaxation (Chlan, 1998). Because of its additional mechanisms of action beyond merely distracting attention, music hypothetically may be more effective in the relief of pain and anxiety than a simple distraction intervention. The purpose of this study was to compare the effects of music, distraction, and treatment-as-usual (control) conditions on pain intensity and state anxiety in a group of patients having cancer-related medical procedures.

## Background

Patients with cancer experience many medical procedures during the course of their illness. Diagnosis usually occurs with some type of invasive biopsy. For example, women with suspected breast cancer may have fine needle, core, or surgical breast biopsies; men with suspected prostate cancer may have prostate biopsies; and people with lymphoma may have lymph node biopsies. Treatment strategies such as chemotherapy often require the placement of central line catheters for extended or long-term infusions of chemotherapy, blood products, IV fluids, and, possibly, antibiotics or nutritional

Pain and anxiety are common symptoms experienced by people diagnosed with cancer (Bottomly, 1998; Cleeland et al., 1994; Newell, Swanson-Fisher, Girgis, & Ackland, 1999; Portenoy, Payne, & Jacobsen, 1999). Early in the experience of cancer, much of the pain and anxiety that patients experience is related to unfamiliar, frightening, and noxious medical procedures used in diagnosis and treatment of the disease such as tissue biopsy and placement of central venous access devices. Unrelieved pain and anxiety associated with these noxious procedures may lead to inability to complete procedures and withdrawal from therapy (Levin, Mermelstein, & Rigberg, 1999; Williams, 1997). Pain and anxiety experiences also may contribute to anticipatory distress and long-term psychological consequences such as intrusive memories, avoidance, and hyperarousal (Chrisler, 1994; Smith, Redd, Peyser, & Vogl, 1999). Cognitive-behavioral interventions such as the use of music or distraction may reduce procedural pain and anxiety. Although music can be used as a source of distraction, it also may reduce pain and anxiety by altering thoughts, emotions, or moods and by in-

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