



## Effects of music therapy with patients on a post-surgical oncology unit: A pilot study determining maintenance of immediate gains

Jenna Chaput-McGovern, MT-BC\*, Michael J. Silverman, Ph.D., MT-BC

University of Minnesota, United States

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### ABSTRACT

Researchers have found that music therapy can be an effective psychosocial intervention for oncology patients. However, due to shortened inpatient hospital stays and the frequency of surgery for patients with cancer, there is a need to determine maintenance of single-session treatment gains with patients on a post-surgical oncology unit. The purpose of this pilot study was to evaluate maintenance of immediate music therapy treatment gains concerning relaxation, pain, anxiety, nausea, and perception of music therapy with patients on a surgical oncology unit. Participants were adult oncology inpatients ( $n=27$ ) and their caregivers ( $n=4$ ) receiving care on a surgical oncology unit. Participants completed five separate 10-point Likert-Type Scales at pretest, posttest, and 30–45-min follow-up. Participants received 20-min music therapy sessions consisting of patient-preferred live music. Analyses of variance (ANOVA) were computed on all patient data and indicated significant differences in relaxation, anxiety, and pain between pretest and posttest and pretest and follow-up measures. However, there were no significant differences from posttest to follow-up, indicating maintenance of treatment gains. Although generalizations are premature due to the lack of a comparison condition, it seems that beneficial effects of a single music therapy session for surgical oncology patients may be maintained in the short-term. Limitations, implications for clinical practice, and suggestions for future research are offered.

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### Introduction

Clinicians in medical facilities have long employed music to help comfort patients during their stay in hospitals (Standley, 2000). Researchers have studied the effects of music therapy on patients in various medical units to systematically determine best practice treatment. With increased emphasis on evidence-based practice music therapy (Abrams, 2010; Edwards, 2005; Kern, 2010), a more thorough and systematic understanding of how music therapy can be utilized to treat patients with different illnesses is needed. Additionally, there is a lack of quantitative music therapy research studies utilizing follow-up methodology (Silverman, 2009). Follow-up methodology can be especially important in medical settings where patients often receive only minimal doses of music therapy (Boyle, 2008; Miller, 2008) due to brief inpatient hospitalizations. While music therapy can be effective for a number of dependent measures for hospitalized patients in different medical settings (Standley, 2000), there is a lack of quantitative research with follow-up measures, specifically in the treatment patients on a surgical oncology unit. Therefore, the purpose of

this pilot study was to evaluate maintenance of immediate music therapy treatment gains concerning relaxation, pain, anxiety, nausea, and perception of music therapy with patients on a surgical oncology unit.

### Literature review

In the United States, there were over 1.5 million new cases of cancer and approximately 569,490 cancer-related deaths in 2010 (American Cancer Society, 2010a). Cancer remains one of the leading causes of death in the United States, with approximately one out of every four deaths related to cancer. Experts from the National Institute of Health estimated the total cost of cancer, including direct medical costs, indirect morbidity costs, and indirect mortality costs, to be \$263.8 billion in 2010 alone (American Cancer Society, 2010a). These costs not only affect those diagnosed with cancer, but their families, workplaces, and healthcare providers. Thus, researchers and clinicians have created a plethora of ways to treat cancer and better assist oncology patients throughout the various stages of their treatment.

Depending on the site and severity of the cancer, numerous treatments are available, including surgery, radiation therapy, and chemotherapy. For most oncology patients, surgical removal of the cancer cells is often the first step in treatment (Richardson, 2004). Surgical side effects may include post-operative pain, anxiety,

\* Corresponding author.

E-mail address: [jrebeccac@hotmail.com](mailto:jrebeccac@hotmail.com) (J. Chaput-McGovern).

fatigue, and risk of infection (American Cancer Society, 2010b). Typically, post surgery oncology patients do not remain as inpatients for prolonged periods. As medical patients heal typically faster at home in a familiar environment, a more brief length of stay in the hospital can decrease infection, fatigue, and costs (Engelman, 1996; Muller, Zalunardo, Hubner, Clavien, & Demartines, 2009). Although music therapists frequently work in brief inpatient medical settings wherein they may only provide minimal doses of music therapy (Boyle, 2008; Miller, 2008), to date, there is no music therapy research with inpatients on a post surgical oncology unit.

Music therapy can be utilized as a nonpharmacological intervention to address both side effects and psychosocial issues oncology patients may encounter, such as pain and anxiety (Bradt, Dileo, Grocke, & Magill, 2011; Burns, 2001; Burns, Harbuz, Hucklebridge, & Bunt, 2001; Clark et al., 2006; Ferrer, 2007; Standley, 1992; Waldon, 2001). Burns, Sledge, Fuller, Daggy, and Monahan (2005) examined adult cancer patients' interests concerning music therapy sessions. The researchers found that 85% of respondents expressed a desire for music therapy, with a majority indicating interest in music listening.

There is also music therapy literature empirically documenting the positive effects patient-preferred live music may have on hospitalized patients (Ferrer, 2007; O'Callaghan & Colegrove, 1998; Standley, 2000; Walworth, 2003). These researchers found that patient-preferred live music may improve quality of life, decrease maladaptive emotions such as anxiety, and may also lower diastolic blood pressure. Specifically, Walworth (2003) found anxiety scores decreased when she invited patients to interact during live music therapy sessions by requesting songs and singing along. Thus, the combination of patient-preferred live music and therapeutic interactions may serve as the cognitive behavioral theoretical framework—designed to reduce stress via distraction—that may enable music therapy to be effective in medical settings.

Specific to pediatric oncology, Robb (2003a, 2003b) theoretically examined how music therapy interventions might facilitate coping. She noted that music therapy interventions may act as a contextual support model in treating people with cancer (Robb, 2000). Robb (2003a) theorized that coping and support may be enhanced via music therapy interventions wherein the music therapist alters the patient's environment so that patient may have increased competence, autonomy, and relatedness. Robb developed this model based from a number of theories including attention and coping, attentional bias, attentional shift, attentional focus, arousal, mood, and habituation and discontinuation. Although Robb formulated these theories based on work with children, adolescents, and young adults, it may be that aspects of support and coping generalize to adults in a similar manner.

Researchers have studied the effects of guided imagery with music on cancer patients' physiological and emotional needs (Burns, 2001; Gimeno, 2010). By utilizing the Bonny Method of Guided Imagery with Music (BMGIM) during 10 weekly sessions, Burns (2001) found that cancer patients' quality of life and overall mood scores improved over time. Using music and imagery may also increase relaxation and decrease nausea and emesis in cancer patients undergoing chemotherapy treatment (Gimeno, 2010). In a similar study, Smith, Case, Johnson, Gwede, and Riggan (2001) found that listening to relaxing music helped reduce anxiety in oncology patients undergoing radiation therapy. As oncology patients frequently report increased anxiety concerning their treatments, this finding has vast implications for patients undergoing intensive treatments associated with cancer. Ferrer (2007) and Standley (1992) also found that music therapy treatment could benefit patients undergoing chemotherapy through increased relaxation and comfort. Therefore, by creating a more comfortable environment for patients and using music therapy

interventions to distract patients from their anxiety, music therapy may contribute to a more positive hospital experience.

Although researchers have found that music therapy can benefit oncology patients in a systematic review and meta-analysis (Bradt et al., 2011), the durational effects of medical music therapy treatment are unknown. Thus, while researchers have consistently found music therapy treatment can immediately help oncology patients, how long are these treatment gains maintained? Additionally, although there are existing data documenting positive effects of music therapy for oncology patients, no music therapy researchers have specifically studied surgical oncology patients who are typically on inpatient status for brief durations. Thus, as many oncology patients require surgical removal of potentially cancerous tumors and cancer cells, it seems that this clinical population deserves present day research attention. Therefore, the purpose of this pilot study was to examine the effects of single-dose patient-preferred live music therapy sessions on pain, anxiety, nausea, relaxation and perception of treatment utilizing a pretest, posttest, and follow-up design with patients on a surgical oncology unit. The authors formulated the following research questions:

- (1) Can a single dose of music therapy immediately improve surgical oncology patients' perceptions of relaxation, anxiety, pain, nausea, and perception of music therapy?
- (2) Can potential improvements in surgical oncology patients be maintained 30 min after music therapy, or do immediate gains dissipate quickly?
- (3) Can a single dose of music therapy immediately improve caregivers' perceptions of relaxation, anxiety, pain, nausea, and perception of music therapy?
- (4) Can potential improvements in caregivers be maintained 30 min after music therapy, or do immediate gains dissipate quickly?

## Method

### Research participants

Research participants were 41 inpatients on the surgical oncology unit of a large teaching hospital in the Midwestern region of the United States. However, only 27 patient participants met inclusion criteria by completing the follow-up measure 30 min after they received music therapy. All patient participants were recovering from a surgical oncology procedure and no participant was a pre-surgical patient. Patients' typical length of stay on this unit was one to three days. Music therapy had not been offered on this unit for a number of years. Of the 27 patient participants who met inclusion criteria, 16 were female and 11 were male with a mean age of 59.67 years ( $SD = 13.52$ ). Concerning specific cancer diagnoses, sites and types of cancers varied. In an attempt to be as inclusive as possible during the pilot study, all patients on the unit were eligible for study inclusion as long as they were measured at pre-, post-, and follow-up.

In an attempt to be as inclusive as possible, caregivers (family members and friends) visiting patient participants were also eligible for participation in the study ( $N = 4$ ; three females and one caregiver participant who did not indicate gender on the research instrument). The mean age of the caregivers was 65.50 years ( $SD = 27.50$ ).

### Instrument

Due to the patients' high levels of negative symptoms associated with oncology and their recent surgeries, the researchers designed and utilized five separate 10-point Likert-Type Scales to collect

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