

Original Article

Application of Therapeutic Harp Sounds for Quality of Life Among Hospitalized Patients

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Abstract

Context. Hospitalized patients experience symptoms including pain and anxiety that may negatively affect their well-being and overall quality of life (QOL), even when medical interventions are deemed successful.

Objectives. The objective of the study was to assess the efficacy of prescriptive live therapeutic harp sounds on patient symptoms and QOL.

Methods. The study was a two-period, two-treatment arm crossover, randomized clinical trial. Individuals were randomized to harp music and standard care for the first 24 hours of the hospital stay, followed by 24 hours of only standard care, or vice versa. The harp intervention was 30–40 minutes of prescriptive live therapeutic harp sounds in the form of solo harp pieces and improvisations. Patients recorded well-being and symptom scores on linear analogue scales. Entry criteria included at least 18 years and a score of 3 or below on a 1–5 linear analogue scale indicating compromised overall QOL.

Results. Ninety-two eligible patients participated in the clinical trial. All the QOL variables had significantly higher percentages of patients with improvements during the harp treatment than during standard care. Five symptoms—fatigue, anxiety, sadness, relaxation, and pain—were significantly improved following therapeutic harp treatment. Approximately 30% to 50% of patients showed a significant increase in the QOL measures after harp treatment.

Conclusion. There is evidence of strong positive effects on the QOL of hospitalized patients who received therapeutic harp sound treatment along with standard care. *J Pain Symptom Manage* 2015;49:836–845. © 2015 Published by Elsevier Inc. on behalf of American Academy of Hospice and Palliative Medicine.

Key Words

Music, quality of life, crossover, clinical trial, therapeutic harp

Introduction

Music has long been recognized informally for its physiological and psychological effects in the health care setting.¹ Watkins² theorizes that there is a potential connection between sensory input from music and neural output—central nervous system (CNS) and autonomic nervous system (ANS). The ANS changes have been studied for nearly 125 years,³ with emphasis on almost every ANS organ. From this, it has been proposed that the ANS system could serve as the mechanism by which music can apply its effects on

humans.^{3,4} Music has long been associated with relaxation⁵ and has spawned an entire professional field of music therapy with distinct certification and academic literature.⁶ It is speculated that the auditory neural impulses respond in unique ways to the sound wave frequency, amplitude, and timbre of music. These impulses “may mediate changes in blood pressure, heart rate, and anxiety level by affecting release of corticotrophin-releasing hormone from the hypothalamus or release of norepinephrine from the locus ceruleus/sympathetic nervous system.”^{2,3} However, in many cases assessing ANS responses to frequency

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were considered secondary to the person's "state" such as anxiety.

The therapeutic effects of music have been demonstrated to include evoking a range of emotional and physiological responses including, but not limited to, arousal, mood, and motor response including respiratory patterns.⁷ There are various studies in the fields of nursing and medicine that suggest that music is effective as an anxiolytic intervention for patients experiencing stress and/or pain.^{2,8-12} The harp, an acoustic stringed instrument, is believed to be effective because the plucking of its multiple strings can produce a wide range of vibrations and overtones (harmonics) that can resonate in a complementary way with the complex and vast range of cellular vibrations in the human body and mind. Although patients may not be hearing every tone of the harp with their ears, they are still receiving the vibrations as resonance, which enters the body and is transmitted throughout the skin, bone, muscles, and CNS.

Because of this, a plausible explanation for the effects of music on the human body may lie in a relationship between the vibrations in the human body and those of the music therapy being administered.¹³ Movement of atomic components within the body creates a constant sound vibration that can be affected by sound vibrations from external sources.¹⁴ Musical sound vibrations that resonate with the human vibratory pattern, therefore, could have an effect on the human body.

Entrainment is the process by which there is change in the vibration pattern of one object based on the similar stronger vibration of another object.¹⁴ Thus, the process of entrainment is one of the ways in which the vibrational patterns of the patient's body and mind may be influenced by the intentional sequencing of tones and rhythms of the harp vibrations, which leads to changes in how symptoms are experienced. The entrainment of body rhythms with relaxing music is thought to decrease the arousal of the sympathetic nervous system, thus contributing to relaxation and anxiety reduction.¹⁵ For example, steady, slow, and repetitive rhythms are used to exert a hypnotic or relaxing effect.

One study involved a single 20-minute session of live harp playing administered to 17 vascular and thoracic post-surgical patients being physically monitored for heart rate and other measurable functions. Live music was chosen because of the harp therapist's ability to observe the patients' reactions and then tailor the intervention to their specific needs.¹⁶ Results indicated that listening to live harp music had a positive effect on patient perception of anxiety, pain, and satisfaction, and produced statistically significant differences in physiological measures of systolic blood pressure and oxygen saturation.

The purpose of the present study was to further explore the effects of therapeutic music on clinical

outcomes of hospitalized patients, using both physiological and psychosocial outcomes via patient-reported questionnaires. Quality of life (QOL) domains reflect the potential impact on multiple domains of physiological and psychosocial outcomes beyond treatment outcome.¹⁷ Patients who have been a part of successful medical interventions, such as surgery and medication, may still experience distressing symptoms such as anxiety or pain that cannot necessarily be relieved by further surgery or medication and, therefore, experience deficits in QOL despite treatment success.¹⁸ Deficits in QOL among patients have been shown to be prognostic for a number of clinical outcomes including survival.

Methods

Study Design

A randomized, controlled, two-period crossover clinical trial was conducted under Institutional Review Board approval. A crossover design was used to ensure that not only did all patients receive the treatment intervention but that they could serve as their own control (Fig. 1).¹⁹ A double-blind research study was not possible because of the nature of the intervention. After providing written informed consent, patients were randomized to one of the two groups. Group 1 received harp music on Day 1, then standard care after. Group 2 received standard care on the first day, then the harp music on Day 2. Both groups would receive a 30–40 minute intervention of individualized harp music on a given day and routine care on another.

Patient Eligibility

The eligibility criteria for this study included 1) QOL score at 3 or below on a 1–5 point Likert scale where zero was considered the worst possible and five was best possible; 2) life expectancy greater than three days; 3) expected length of hospital stay of at least three days; 4) 18 years or older; and 5) ability to complete the survey. Although the ability to complete the survey was a requirement for patient eligibility, patients were not obligated to do so; they just had to demonstrate the capacity to do the task. Research assistants evaluated all referred patients to ascertain eligibility. Referrals were made based on the following symptoms: anxiety, pain, shortness of breath, agitation or distress, or any combination of symptoms resulting in suspected lowering of patients' global QOL. Patients were included or excluded based on their reported symptoms, not their diagnosis. Hence, the study was symptom-driven rather than diagnosis-driven. A Patient Referral Tool, completed by the research assistant, included details for the therapeutic harpist on patient diagnosis, and symptoms. It also

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