The Effect of Music Therapy on Patients’ Perception and Manifestation of Pain, Anxiety, And Patient Satisfaction

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A therapeutic music program came to the attention of WVUH staff and administration through the efforts of a harpist volunteering at the hospital in early 2001. As a result, research into the benefits of such a service was conducted and other facilities using therapeutic music were contacted. It was concluded that in addition to other benefits, the skills of a trained therapeutic musician would be helpful in providing patients a mechanism for coping with the impact of their situation. In late 2001, a CMP was hired. To date, 42 other hospitals utilize the services of a CMP (The Music for Healing and Transition Program, Inc., 2005).

Using Wiedenbach’s nursing theory to guide practice, the nurse identifies actions to help the patient to cope (Meleis, 2005). Help, as defined by Ernestine Wiedenbach, is a deliberate action that enables individuals to overcome whatever hampers their ability to function (Meleis, 2005). Music therapy is used at WVUH as an adjunct to nursing practice, as an additional tool to help patients. The nurse and patient discuss this intervention and a mutual decision is made to involve the music therapist. Mutual decision making is an integral concept of the Wiedenbach Nursing Theory. At WVUH, the CMP works within the pastoral care department and receives referrals primarily from nurses, physicians, and chaplains. Occasionally the CMP will respond to

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**Figure 1.**
**Bedside Music Therapy**

Using Celtic harp, Howard Emerson, CMP, provides therapeutic treatments to hospitalized patients at WVUH.

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**Figure 2.**
**A Model for Evidence-Based Practice Change**

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<tbody>
<tr>
<td>• Involve stakeholders</td>
<td>• Use standardized classification systems and language</td>
<td>• Search research literature related to major variables</td>
<td>• Define proposed change</td>
<td>• Communicate recommended change to stakeholders</td>
<td>• Present staff inservices on practice change</td>
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<tr>
<td>• Collect internal data about current practice</td>
<td>• Identify potential interventions and activities</td>
<td>• Critique and weigh evidence</td>
<td>• Identify needed resources</td>
<td>• Integrate into practice standards</td>
<td>• Monitor process and outcomes</td>
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<tr>
<td>• Compare internal data with external data</td>
<td>• Select outcomes indicators</td>
<td>• Synthesize best evidence</td>
<td>• Plan implementation process</td>
<td>• Define outcomes</td>
<td>• Pilot trial demonstration</td>
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<tr>
<td>• Identify problem</td>
<td></td>
<td>• Assess feasibility, benefits, and risks</td>
<td>• Decide to adapt, adopt, or reject practice change</td>
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<td>• Evaluate process and outcome</td>
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</table>

*Source: Rosswurm & Larabee, 1999.*
requests from family members or returning patients who had benefitted from music during prior hospitalizations. Consideration is always given to the patient’s age, music preference, and medical condition. A physician’s order is not required to provide this service.

Many types of hospitalized patients could benefit from therapeutic music. The patient who is experiencing a lengthy hospital stay and wishes to enjoy a break in the daily routine may find refuge in the music. Cancer patients undergoing painful, distressing procedures might employ music as a distraction (Kwekkeboom, 2003). The terminally ill patient and his or her family could find solace in music when only comfort measures are being provided at end of life. Freeman and colleagues (2006) found that a vigil conducted by a trained music thanatologist could provide an effective form of palliative care for dying patients. Evans (2002) suggested that music therapy become a routine component of care provided to people during their hospitalization (see Figure 1).

Recognizing that music therapy may be a viable approach to augmenting traditional treatments, the Medical-Surgical Research Utilization Team (MSRUT) at WVUH collaborated with the hospital’s CMP to evaluate the current research related to the effect of music therapy on patients.

Method

The MSRUT utilized PubMed, Cochrane Library, CINAHL, and Ebsco Host electronic databases to identify articles on the topic of music as an intervention by focusing on pain, anxiety, and patient satisfaction as dependent variables. In addition to the variables chosen, the team focused on the hospital setting rather than a specific patient population. Lack of research in the hospital setting resulted in the inclusion of ten articles from 1991 to present. The literature search was completed in 2004. Since then, additional studies have been conducted on this topic. The articles were critiqued thoroughly by members of MSRUT as Step 3 of the Rosswurm-Larrabee model for evidence-based practice change (Rosswurm & Larrabee, 1999) (see Figure 2). The critiques included identification of research variables, settings, sample characteristics, tools, study design, limitations, findings, and quality of evidence. The articles included in the review were level three experimental designs that included clinical controlled trials. Nine articles investigated the impact of music therapy on patient perceptions of pain. The effect of music on anxiety levels was identified in six of the articles, and patient satisfaction was measured in three articles. The populations and settings varied, with a representative sample of patients from the emergency room, same-day surgery, colonoscopy suite, operating room, and postoperative areas. Articles were reviewed and summarized for content. Findings of the articles were placed in matrix form for clarity and ease of analysis (see Table 1).

Findings

The effect of music on pain. Perception of pain is a multifaceted phenomenon reflecting a person’s physiological, psychosocial, cultural, and subjective being (Heiser, Chiles, Fudge, & Gray, 1997). In the hospital, a multitude of experiences can affect the perception of pain. Music as an intervention for pain perception was identified in nine articles from this literature review (see Table 1). Evidence from four studies (Good et al., 2001; Menegazzi, Paris, Kersteen, Flynn, & Trautman, 1991; Nilsson, Rawal, & Unosson, 2003; Zimmerman, Nieveen, Barnason, & Schmaderer, 1996) indicated that music therapy is significantly more effective in lowering pain than no intervention. These studies examined pain associated with laceration repair, coronary artery bypass, abdominal surgery, inguinal hernia, and varicose vein repair. In contrast, five studies (Broschious, 1999; Good, 1995; Heiser et al., 1997; Kwekkeboom, 2003; Tanabe, Thomas, Paice, Spiller, & Marcantonio, 2001) failed to show a significant difference in level of pain between the music group and control group. Possible explanations for the lack of consensus in findings about the efficacy of music therapy could be small sample size, primarily Caucasian subjects, low initial pain ratings, varied skill level of practitioners, and lack of a true control group. The body of evidence regarding diverse types of pain is insufficient to support specific music therapy for specific types of pain.

The effect of music on anxiety. Anxiety can be defined as a state of uneasiness, apprehension, or fear, resulting from the anticipation of a real or perceived threatening event or situation, often impairing physical and psychological functioning (Thomas, 2004). The mere thought of a needlestick creates anxiety for many people; hence, the suggestion of surgery or an invasive procedure may induce similar feelings. Music as an intervention for anxiety was investigated in six of the reviewed articles. Anxiety was reduced significantly in one study involving subjects undergoing colonoscopy (Smolen, Topp, & Singer, 2002). In addition, the music intervention group had a reduction in total procedure time and need for opiate administration. The remaining five studies (Good, 1995; Heiser et al., 1997; Kwekkeboom, 2003; Menegazzi et al., 1991; Nilsson et al., 2003) demonstrated no statistical significance in anxiety levels. A variety of patient populations were investigated, such as those with
### Table 1. Effect of Music Therapy on Pain, Anxiety, and Patient Satisfaction

<table>
<thead>
<tr>
<th>Authors</th>
<th>Patient Population</th>
<th>Sample Size</th>
<th>Independent Variable</th>
<th>Tools</th>
<th>Dependent Variable (Results)</th>
<th>Patient Satisfaction</th>
<th>Additional Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menegazzi et al. (1991)</td>
<td>Laceration repair in the emergency room</td>
<td>n=38</td>
<td>Music (19) No music (19)</td>
<td>Recorded music</td>
<td>Visual Analog Scale Spielberger State Trait Anxiety Inventory (STAI) Significant-ly lower in the music group (p&lt;0.05) NS</td>
<td>*</td>
<td>100% of subjects would recommend music.</td>
</tr>
<tr>
<td>Zimmerman et al. (1996)</td>
<td>Coronary artery bypass graft (CABG)</td>
<td>n=96</td>
<td>Music (32) Music video (32) Rest (32)</td>
<td>Recorded music</td>
<td>Numeric Rating Scale Significant-ly lower in the music group (p&lt;0.05) *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broschius et al. (1999)</td>
<td>Chest-tube removal after open-heart surgery</td>
<td>n=156</td>
<td>White noise (36) Music (70) Control (50)</td>
<td>Recorded music</td>
<td>Verbal Analog Scale NS</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Heiser et al. (1997)</td>
<td>Lumbar microdiscectomy</td>
<td>n=10</td>
<td>Music (5) Nonmusic (5)</td>
<td>Recorded music</td>
<td>Numeric Rating Scale NS NS NS</td>
<td></td>
<td>100% rated music as beneficial and would use it again.</td>
</tr>
<tr>
<td>Tannabe et al. (2001)</td>
<td>Musculoskeletal trauma in the emergency department</td>
<td>n=76</td>
<td>Music (24) Ibuprofen (24) Control (28)</td>
<td>Recorded music</td>
<td>Verbal Analog Scale McGill Pain Questionnaire NS</td>
<td>*</td>
<td>NS 84% satisfaction with the care; 96% would listen to music again.</td>
</tr>
<tr>
<td>Good et al. (2001)</td>
<td>Abdominal surgery</td>
<td>n=285</td>
<td>Jaw relaxation** Music** Combination of jaw relaxation and music** Control**</td>
<td>Recorded music</td>
<td>Decreased from day 1 to day 2 (p&lt;0.001) *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smolen et al. (2002)</td>
<td>Colonoscopy</td>
<td>n=32</td>
<td>Music (16) No music (16)</td>
<td>Recorded music</td>
<td>Spielberger State Trait Anxiety Inventory (STAI) Significant reduction (p=0.19) *</td>
<td></td>
<td>Decreased systolic blood pressure (p=0.02) Decreased diastolic blood pressure (p=0.006) Decreased heart rate (p=0.000) Less sedation administration Versed® (p=0.000) Decreased use of meperidine (p=0.000) Procedure time reduced to 6.25 minutes</td>
</tr>
</tbody>
</table>
The effect of music therapy on patient satisfaction based on these studies.

Implications

The potential for music to reduce anxiety, alleviate pain, and improve patient satisfaction may have an impact in today’s health care environment. Although there is limited evidence to support strong implications for practice, the possibility exists that music can have a positive impact on patient care. Further research is required before strong implications can be reported. In several of the studies, patients did report enjoying the music, stated they would use it again, and would recommend its use to others (Good, 1995; Heiser et al., 1997; Menegazzi et al., 1991; Tanabe et al., 2001). These are suggestive findings as to the effectiveness of music therapy which nurses and nurse leaders may wish to explore.

Many medical-surgical patients experience postoperative pain, receive analgesics, and are expected to ambulate postoperatively. The traditional use of opi-
ates to control postoperative pain could be augmented by the use of music therapy. Smolen and colleagues (2002) demonstrated decreased administration of Versed® and meperidine during colonoscopy when music was utilized. Providing music as an intervention could decrease the need for opiates and thus decrease the negative side effects associated with their use (nausea, vomiting, constipation, urinary retention, confusion, drowsiness). Postoperative ambulation is an ongoing struggle for patients who have pain management problems. Failure to ambulate can lead to immobility-related complications, such as atelectasis, pneumonia, deep vein thrombosis, decreased gastrointestinal motility, and altered skin integrity. Another study (Good et al., 2001) found pain associated with postoperative ambulation was decreased significantly from day 1 to day 2 with the use of music therapy and jaw relaxation techniques. The use of music as an intervention should be investigated because it could promote and improve early ambulation, resulting in fewer complications, decreased length of stay, and better clinical outcomes for patients. The use of music in pain management is an opportunity for future research. Physiological outcome indicators, such as blood pressure, heart rate, and respiratory rate, could be investigated with regard to the clinical benefits of music therapy. Further research needs to investigate the effect of music therapy on opiate administration. Studies to differentiate the benefits of a music intervention between procedures associated with minor pain, such as laceration repair, and procedures that elicit more severe pain, such as chest tube removal, also would be of clinical benefit.

Research to determine correlations between music therapy and the anxiety experienced by patients would be beneficial in various areas of clinical practice. For example, the introduction of music therapy in conjunction with patient teaching may facilitate improved patient learning and retention. Anxiety can inhibit the ability to learn new information. Prior to providing patient education, the nurse could offer music as an option, asking the patient if he or she believes music would be helpful in reducing anxiety or improving the learning experience (Evans, 2002). The intervention would be discussed with the patient and a mutual decision would be made to implement the use of music, therefore increasing the likelihood of success (Meleis, 2005). Furthermore, determining the most appropriate time to initiate music therapy and identifying the specific clinical areas of practice that could benefit from its use would be of interest to health care providers.

Patient satisfaction is a fundamental issue for nurses, physicians, and health care facilities. The possible relationships between music and patient satisfaction are another area for additional research. An instrument designed to measure patient satisfaction with music therapy would be necessary for accurate evaluation of the intervention.

Patient satisfaction responses were collected at WVUH in 2002 to evaluate patients’ responses to the therapeutic harp service. Two questions were asked and an opportunity for additional comments was provided to the patients. The survey was conducted by the hospital chaplains, and the following presentation was used:

Recently you had a visit from our hospital harpist, Howard Emerson. Would you please answer two questions about the value of listening to the music?
1. On a scale of one to five, how valuable was the music to you, with one being not valuable at all, and five being very valuable?
2. Would you recommend the experience of harp music to someone else in your situation? Yes or no?

Would you like to make any additional comments about your experience with the harpist?

Eighty-one patients voluntarily responded to this internal satisfaction survey. In response to the first question, “How valuable was the music to you?” 72 of the respondents (89%) gave a rating of 5 (very valuable). A rating of 4 (moderately valuable) was the response of eight patients (10%) and one patient gave a rating of 3 (neutral). The second question, “Would you recommend the experience of harp music to someone else in your situation?” received a recommendation of 96%, with 79 out of 81 responding “Yes.” One patient replied “No,” and one patient replied, “Not sure.” A patient on the orthopedic unit commented, “It eased my pain. If he had played ten more, I would have fallen asleep — something I don’t do much here.” A pediatric patient reported, “It was nice, sweet, classical — it helped me feel happy when my Mom wasn’t here.” An oncology patient said, “All the other patients on the floor turned their TVs off. When he left, it was silent.” Patients who experienced the individualized therapeutic music sessions report decreased pain and anxiety. Lowering of blood pressure and heart rate also has been demonstrated in some cases. Patients are able to express emotion, reporting a sense of spiritual fulfillment and increased satisfaction. Families also benefit in being allowed “emotional release” and spiritual support. One family member shared, “She loved it so much, she requested a second session. She smiled and attempted to sing along. In her last hours, she had a smile on her face and was waving goodbye. We were amazed at her countenance and her spirit.”
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http://www.musictherapy.org


**Suggested Readings**


**From AMSN**

Other resources, such as fact sheets for patients and families, are available for some of the interventions. The Spanish translations of these fact sheets are currently available for deployment of rapid response teams, preventing ADEs (medication reconciliation), improving care for acute myocardial improvement, preventing surgical site infections, preventing central line infections, and preventing ventilator-associate pneumonia.

Whether your hospital is participating in the 5 Million Lives Campaign or not, it is important to know what interventions are recommended to reduce the incidence of medical harm. Consider accessing the IHI Web site for helpful information that will be continually updated.

**Reference**
