

Relaxation and music to reduce postsurgical pain.

Good M, Stanton-Hicks M, Grass JA, Anderson GC, Lai HL, Roykulcharoen V, Adler PA.

Frances Payne Bolton School of Nursing, Case Western Reserve University, Cleveland, Ohio, USA. mpg@po.cwru.edu

AIMS: We investigated the effects of relaxation, music, and the combination of relaxation and music on postoperative pain, across and between two days and two activities (ambulation and rest) and across ambulation each day. This secondary analysis of a randomized controlled trial was conducted from 1995 to 1997. **BACKGROUND:** After surgery, patients do not always receive sufficient relief from opioids and may have undesired side-effects. More complete relief (10-30%) was found recently with adjuvant interventions of relaxation, music, and their combination. Comparison of effects between days and treatments have not been examined longitudinally. **METHODS:** With a repeated measures design, abdominal surgery patients (n = 468) in five US hospitals were assigned randomly to one of four groups; relaxation, music, their combination, and control. With institutional approval and written informed consent, subjects were interviewed and taught interventions preoperatively. Postoperative testing was at ambulation and rest on days 1 and 2 using visual analogue (VAS) sensation and distress of pain scales. **RESULTS:** Multivariate analysis indicated that although pain decreased by day 2, interventions were not different between days and activities. They were effective for pain across ambulation on each day, across ambulation and across rest over both days (all $P < 0.001$), and had similar effects by day and by activity. **CONCLUSION:** Nurses can safely recommend any of these interventions for pain on both postoperative days and at both ambulation and rest.

Publication Types:

Clinical trial

Multicenter study

Randomized controlled trial

PMID: 11168704 [PubMed - indexed for MEDLINE]

1: J Holist Nurs 2000 Dec;18(4):378-90

The lived experience of listening to music while recovering from surgery.

McCaffrey RG, Good M.

Francis Payne Bolton School of Nursing, Case Western Reserve University, USA.

Music has been shown to have positive physiological and psychological effects on patients in previous studies. In this study, the authors looked at the lived experience of listening to music and evaluated findings from a phenomenological perspective. Specifically, the authors described the following three themes that emerged from interview data with 8 participants who listened to music during postoperative recovery: (a) comfort from a discomforting condition, (b) familiarity in a strange environment, and (c) distraction from fear, pain, and anxiety. In addition, implications for the use of music by nurses are discussed.

PMID: 11847794 [PubMed - indexed for MEDLINE]

Effects of music therapy on anxiety in ventilator-dependent patients.

Wong HL, Lopez-Nahas V, Molassiotis A.

Intensive Care Unit, Prince of Wales Hospital, Hong Kong, China.

OBJECTIVE: The purpose of this study was to assess the effectiveness of music therapy in decreasing anxiety in ventilator-dependent patients. **DESIGN:** A crossover repeated measures design with random assignment was used. **SETTING:** The intensive care unit of a university hospital in Hong Kong was used as the setting for this study. **PATIENTS:** Twenty patients who were ventilator-dependent were recruited for the study. They were all Chinese with a mean age of 58.25 years (range, 19-84 y). Most (75%) were men. **Outcome Measures:** Physiologic measures of anxiety assessed in this study were mean blood pressure and respiratory rate. An additional measure was the Chinese version of the Spielberger State-Trait Anxiety Inventory. **INTERVENTION:** Patients were randomized to receive either 30 minutes of uninterrupted rest and then 30 minutes of music therapy or the music therapy first and then the uninterrupted rest period. Patients listened to relaxing music by using audiocassette players and headphones. Subjects selected the music of their choice from a selection including both Chinese and Western music. Subjects had physiologic measures taken immediately before the intervention (or rest period) and at 5-minute intervals throughout the intervention. The Chinese version of Spielberger's State-Trait Anxiety Inventory was completed before the intervention and immediately after the intervention. **RESULTS:** Findings indicated that music therapy was more effective in decreasing state anxiety than was an uninterrupted rest period ($P < .01$). As measured by analysis of variance with repeated measures, blood pressure and respiratory rate showed no significant differences in the 2 conditions over time. However, significant differences were observed at the end of the intervention (after 30 minutes) between the 2 conditions, with music therapy being superior to the rest period. **CONCLUSION:** Music therapy is an effective nursing intervention in decreasing anxiety in ventilator-dependent patients and its use should be incorporated into the care of mechanically ventilated patients. For the Chinese patients, culture and language were the predominant factors in their choice of music.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 11604980 [PubMed - indexed for MEDLINE]

1: J Holist Nurs 2000 Sep;18(3):245-60

Cultural differences in music chosen for pain relief.

Good M, Picot BL, Salem SG, Chin CC, Picot SF, Lane D.

Frances Payne Bolton School of Nursing, Case Western Reserve University,
USA.

Nurses use music therapeutically but often assume that all patients will equally appreciate the same type of music. Cultural differences in music preferences are compared across five pain studies. Music preferences for pain relief are described as the most frequently chosen type of music for each culture. Findings indicate that in four studies, musical choices were related to cultural background ($p = .002$ to $.049$). Although the majority in each group chose among the other types of music, Caucasians most frequently chose orchestra music, African Americans chose jazz, and Taiwanese chose harp music. For culturally congruent care, nurses should become aware of cultural differences in music preference and provide culturally specific selections among other music expected to have a therapeutic effect.

PMID: 11847812 [PubMed - indexed for MEDLINE]

: Prog Cardiovasc Nurs 2001 Winter;16(1):5-13 Related Articles, Books, LinkOut

The effects of music on cardiac patients on bed rest.

Cadigan ME, Caruso NA, Haldeman SM, McNamara ME, Noyes DA, Spadafora MA, Carroll DL.

Department of Nursing, Patient Care Services, Massachusetts General Hospital, Boston, MA 02114, USA.

Hospitalizations that require invasive cardiac procedures or support with an intra-aortic balloon pump can be unsettling. This study was undertaken to measure the effect of a music intervention on physiologic and psychological responses of patients on bed rest due to procedural sheaths or an intra-aortic balloon pump. A randomized, two-group, pretest/post-test design was utilized to measure the effect of a 30-minute music intervention on heart rate, blood pressure, respiratory rate, skin temperature, pain perception, and mood states. One hundred forty subjects participated, 65 in the control group and 75 in the treatment group. There were no significant differences between the groups in demographic, clinical, or baseline variables, except for respiratory rate. After the music intervention, there were reductions in blood pressure, respiratory rate, and psychological distress, as measured by the Profile of Mood States ($p < 0.05$). Music appeared to affect selected physiologic responses and reduce psychological distress in patients on bed rest.

Publication Types:

Clinical trial

Randomized controlled trial

PMID: 11252881 [PubMed - indexed for MEDLINE]

usic medicine. A neurobiological approach.

Hassler M.

Department of Clinical and Physiological Psychology, University of Tuebingen,
Germany.mariannehassler@snafu.de

Music medicine is a relatively new medical specialty for most countries in the world and a rediscovery of a discipline for some countries in Europe. In the scope of music medicine are health problems of musicians like stage fright and psychic stress, pain syndromes and motor disturbances. Specific demands of musicianship like performing before the public, performing under the constant critical scrutiny of conductors, being expected to perform perfectly, and the physical demands of performing on a musical instrument were seen as the determinants of the complaints, and treatment does usually not differ between musicians and non-musicians with comparable diseases. In the present article, growing neurobiological evidence will be summarized showing that musicians differ from non-musicians on brain structure and function and on some hormonal and immunological parameters. Musicians tend to have atypical brain organization for verbal and non-verbal materials, their auditory system tracks sound levels more accurately, musicians attend pre-consciously to musical material and they react to music as if it is a stressor, i.e. with increased activity of the autonomic nervous system and with an increase in stress hormone production. A musician is more likely than a non-musician to be non-righthanded and to be vulnerable to atopic diseases. Testosterone levels are assumed to be lower (male) and higher (female) than controls. Melatonin was found to be elevated, and ACTH was related to musical talent. His/her brain reflects early music practice by enlarged structures, like the anterior part of the corpus callosum and the representation for piano tones and for the left thumb and little finger in string players. In addition, the left planum temporale was found to be larger in musicians with absolute pitch. These differences between musicians and non-musicians may have implications for music medicine in theory and practice, and further research should help to improve treatment of musicians.

PMID: 11455337 [PubMed - as supplied by publisher]

[How does music affect the human body]?

[Article in Norwegian]

Myskja A, Lindbaek M.

Seksjon for allmenntmedisin, Universitetet i Oslo.

Music therapy has developed its practice and research approaches within a qualitative framework more related to humanistic traditions than to medical science. Music medicine has therefore developed as a separate discipline, endeavouring to incorporate the legitimate therapeutic use of music within a medical framework. This paper argues that more extensive communication and collaboration between the methods developed within the music therapy community, and research based on medical science, could lead to a better understanding of the place of music as a therapeutic tool, both as regards its efficacy and its limits. Research has shown that music may influence central physiological variables like blood pressure, heart rate, respiration, EEG measurements, body temperature and galvanic skin response. Music influences immune and endocrine function. The existing research literature shows growing knowledge of how music can ameliorate pain, anxiety, nausea, fatigue and depression. There is less research done on how music, and what type of music, is utilized and administered specifically for optimum effect in specific clinical situations.

Publication Types:

Review

Review, tutorial

PMID: 10863350 [PubMed - indexed for MEDLINE]

: J Burn Care Rehabil 2001 Jan-Feb;22(1):83-8; discussion 82-3 Related Articles, Books, LinkOut

Music therapy for assistance with pain and anxiety management in burn treatment.

Prensner JD, Yowler CJ, Smith LF, Steele AL, Fratianne RB.

Burn Center, MetroHealth Medical Center, Cleveland, Ohio 44109-1998, USA.

The management of pain is one of the primary issues in burn care. Pain is not only a physiologic experience, but a psychological one as well. With this in mind, the treatment of burned patients must incorporate a holistic view of pain management and healing. Cognitive, behavioral, and pharmacologic interventions all have a role in pain management. Studies, as well as clinical experience, have shown that musical intervention has been helpful in assisting patients with pain management in a variety of medical settings. Music is an element of normal life that can be easily adapted for the needs of individual patients and their current environment while providing a means for self expression and for normalizing the environment. This article examines the rationale for using music therapy with burned patients, describes several protocols that have been adapted to meet the specific needs of burned patients, and summarizes our preliminary findings, which demonstrate significant response to music therapy protocols employed on our patients.

PMID: 11227691 [PubMed - indexed for MEDLINE]

The charms of music. Step by step prescription for patients.

Alexander M.

Department of Family Medicine, CMC-Myers Park, Carolinas Medical Center, Charlotte, NC, USA. malexander@carolinas.org

Publication Types:

Review

Review, tutorial

PMID: 11270311 [PubMed - indexed for MEDLINE]

Music therapy results for ICU patients.

Updike P.

The following investigation studied the physiological and emotional responses to taped music programs of patients in coronary and surgical Intensive Care Units (ICU). Previous studies have investigated physiological or psychological impact individually, but rarely explored the effects simultaneously. The results of this study support music therapy as a nursing intervention which supports the holistic care of the critically ill patient. —

PMID: 2311487 [PubMed - indexed for MEDLINE]

: Health Serv Manager 1979 Oct;12(10):6-7, 10 Related Articles, Books, LinkOut

Helping the ICU nurse cope with stress: an educational program.

Huckabay LM.

PMID: 10244165 [PubMed - indexed for MEDLINE]

[How does music affect the human body]?

[Article in Norwegian]

Myskja A, Lindbaek M.

Seksjon for allmenmedisin, Universitetet i Oslo.

Music therapy has developed its practice and research approaches within a qualitative framework more related to humanistic traditions than to medical science. Music medicine has therefore developed as a separate discipline, endeavouring to incorporate the legitimate therapeutic use of music within a medical framework. This paper argues that more extensive communication and collaboration between the methods developed within the music therapy community, and research based on medical science, could lead to a better understanding of the place of music as a therapeutic tool, both as regards its efficacy and its limits. Research has shown that music may influence central physiological variables like blood pressure, heart rate, respiration, EEG measurements, body temperature and galvanic skin response. Music influences immune and endocrine function. The existing research literature shows growing knowledge of how music can ameliorate pain, anxiety, nausea, fatigue and depression. There is less research done on how music, and what type of music, is utilized and administered specifically for optimum effect in specific clinical situations.

Publication Types:

Review

Review, tutorial

PMID: 10863350 [PubMed - indexed for MEDLINE]

: J Burn Care Rehabil 2001 Jan-Feb;22(1):83-8; discussion 82-3 Related Articles, Books, LinkOut

Music therapy for assistance with pain and anxiety management in burn treatment.

Prensner JD, Yowler CJ, Smith LF, Steele AL, Fratianne RB.

Burn Center, MetroHealth Medical Center, Cleveland, Ohio 44109-1998, USA.

The management of pain is one of the primary issues in burn care. Pain is not only a physiologic experience, but a psychological one as well. With this in mind, the treatment of burned patients must incorporate a holistic view of pain management and healing. Cognitive, behavioral, and pharmacologic interventions all have a role in pain management. Studies, as well as clinical experience, have shown that musical intervention has been helpful in assisting patients with pain management in a variety of medical settings. Music is an element of normal life that can be easily adapted for the needs of individual patients and their current environment while providing a means for self expression and for normalizing the environment. This article examines the rationale for using music therapy with burned patients, describes several protocols that have been adapted to meet the specific needs of burned patients, and summarizes our preliminary findings, which demonstrate significant response to music therapy protocols employed on our patients.

PMID: 11227691 [PubMed - indexed for MEDLINE]

N C Med J 2001 Mar-Apr;62(2):91-4 Related Articles, Books, LinkOut

The charms of music. Step by step prescription for patients.

Alexander M.

Department of Family Medicine, CMC-Myers Park, Carolinas Medical Center, Charlotte, NC, USA. malexander@carolinas.org

Publication Types:

Review

Review, tutorial

PMID: 11270311 [PubMed - indexed for MEDLINE]

Dimens Crit Care Nurs 1990 Jan-Feb;9(1):39-45 Related Articles, Books, LinkOut

Music therapy results for ICU patients.

Updike P.

The following investigation studied the physiological and emotional responses to taped music programs of patients in coronary and surgical Intensive Care Units (ICU). Previous studies have investigated physiological or psychological impact individually, but rarely explored the effects simultaneously. The results of this study support music therapy as a nursing intervention which supports the holistic care of the critically ill patient.

PMID: 2311487 [PubMed - indexed for MEDLINE]

: Health Serv Manager 1979 Oct;12(10):6-7, 10 Related Articles, Books, LinkOut

Helping the ICU nurse cope with stress: an educational program.

Huckabay LM.

PMID: 10244165 [PubMed - indexed for MEDLINE]

Music decreases sedative requirements during spinal anesthesia.

Lepage C, Drolet P, Girard M, Grenier Y, DeGagne R.

Department of Anesthesia, Maisonneuve-Rosemont Hospital and University of Montreal, Montreal, Quebec, Canada.

Ambulatory surgery can create significant anxiety. This prospective study measured whether music can influence anxiety and perioperative sedative requirements in outpatients undergoing surgery with spinal anesthesia. We also evaluated the correlation between two anxiety measures, the State-Trait Anxiety Inventory test (STAI) and the 0- to 10-cm visual analog scale (VAS 0-10), with 0 meaning complete relaxation and 10 the worst feeling of anxiety possible. Fifty unpremedicated patients were randomly assigned to listen to music of their choice via headset during the perioperative period (Group I) or to have no music (Group II). All participants used patient-controlled IV midazolam sedation and underwent repeated evaluations of their anxiety level with the STAI and the VAS 0-10. Midazolam requirements during surgery (Group I, 0.6 +/- 0.7 versus Group II, 1.3 +/- 1.1 mg; $P < 0.05$) and for the whole perioperative period (Group I, 1.2 +/- 1.3 versus Group II, 2.5 +/- 2.0 mg; $P < 0.05$) were smaller in patients listening to music. Anxiety levels, measured with STAI or VAS 0-10, were similar in both groups. The Spearman's coefficient values between STAI and VAS 0-10 ranged from 0.532 to 0.687. We conclude that patients listening to music require less midazolam to achieve a similar degree of relaxation as controls and that measures of anxiety obtained from the STAI and the VAS 0-10 are positively, but only moderately, correlated. **IMPLICATIONS:** It is possible to decrease sedative requirements during surgery under spinal anesthesia by allowing patients to listen to music to reduce their anxiety.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 11574356 [PubMed - indexed for MEDLINE]

State of the science of music interventions. Critical care and perioperative practice.

White JM.

School of Nursing, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, USA.
jill@uwm.edu

Music therapy is an easy to administer, relatively inexpensive, noninvasive intervention that can reduce anxiety and pain in critical care and perioperative patients. Libraries of relaxing music selections need to be compiled, reflecting diverse musical tastes. Providing patients with the opportunity to partake in music therapy sessions, selecting their own music, and providing them with quiet, uninterrupted time to listen to the music provides patients with a sense of control and separation from the multiple environmental stressors they are experiencing. Although there is now an extensive empirical base for the therapeutic usefulness of music therapy, particularly with the myocardial infarction population, few hospitals have adopted music therapy programs. Patient satisfaction and outcomes clearly have improved after music therapy sessions have been implemented. Further study with more diverse samples with a wider variety of medical conditions is indicated. Most of these studies used only one or two music sessions. It is not known whether effectiveness of music therapy sessions improves with repeated exposures. Further, there are little data with respect to optimal time for implementation of music therapy, length of music therapy sessions, or types of music to use. The effects of cultural diversity have not been addressed. Music therapy can improve the quality of care that critical care and perioperative nurses deliver to their patients.

Publication Types:

Review

Review literature

PMID: 11249367 [PubMed - indexed for MEDLINE]

Music as a therapeutic intervention for anxiety in patients receiving radiation therapy.

Smith M, Casey L, Johnson D, Gwede C, Riggin OZ.

Geriatric Psychiatry Department, James A. Haley Veterans Affairs Medical Center, Tampa, USA.

PURPOSE/OBJECTIVES: To determine whether music moderates the level of anxiety that patients experience during radiation therapy. **DESIGN:** Experimental, longitudinal, random assignment to music or no music therapy. **SETTING:** Urban radiation oncology center in a Department of Veterans Affairs hospital in the southeastern United States. **SAMPLE:** Forty-two men (19 in the experimental group, 23 in the control group) aged 39-80 years (74% white, 12% African American, 12% Hispanic, and 2% other) receiving definitive external beam radiation therapy for pelvic or abdominal malignancies. **METHODS:** Patients in the experimental group listened to music of their choice provided via audiotapes and headphones before and during their simulation and daily treatments for the duration of the planned course of therapy. The control group received standard care. The State-Trait Anxiety Inventory was administered initially to participants in both groups at the time of evaluation (time 1), post-simulation (time 2), at the end of the first week (time 3), at the end of the third week (time 4), and at the end of the fifth week or end of radiation therapy (time 5). **MAIN RESEARCH VARIABLE:** State anxiety. **FINDINGS:** No significant difference existed between the two groups to suggest that music moderated the level of anxiety during radiotherapy. However, post-hoc analyses identified changes and trends in state anxiety scores, suggesting a possible benefit of music therapy during radiotherapy. **CONCLUSIONS:** Despite a lack of group differences, early intervention with music therapy for patients with high levels of anxiety may be beneficial. **IMPLICATIONS FOR NURSING PRACTICE:** Nurses and other clinicians may administer state anxiety scales at the initial visit or prior to pretreatment radiation planning (simulation). Individuals who have high state anxiety scores may receive nursing interventions tailored to reduce anxiety during simulation and the early part of radiotherapy.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 11421145 [PubMed - indexed for MEDLINE]