Music & Imagery Studies – Elder Care

Effect of music on chronic osteoarthritis pain in older people

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BACKGROUND: Osteoarthritis is the most common degenerative disease in humans. It usually begins in middle age and is progressive. Chronic pain in older people presents a significant obstacle in maintaining function and independence. Previous studies have shown that music can improve motivation, elevate mood, and increase feelings of control in older people.

PURPOSE: The purpose of this randomized clinical trial was to examine the influence of music as a nursing intervention on osteoarthritis pain in elders.

METHOD: Data were collected using the short form of the McGill Pain Questionnaire with 66 elders suffering from chronic osteoarthritis pain. Differences in perceptions of pain were measured over 14 days in an experimental group who listened to music for 20 minutes daily and a control group who sat quietly for 20 minutes daily. All participants completed the Short Form McGill Pain Questionnaire (SF-MPQ) on day 1, 7, and 14 of the study.

RESULTS: Results of t-tests indicated that those who listened to music had less pain on both the Pain Rating Index on day 1 (P = 0.001), day 7 (P = 0.001) and day 14 (P = 0.001) and on the Visual Analogue Scale on day 1 (P = 0.001), day 7 (P = 0.001) and day 14 (P = 0.001), when compared with those who sat quietly and did not listen to music. A repeated measure analysis of variance controlling for pretest measures demonstrated a significant decrease in pain among experimental group participants when compared with the control group on the pain descriptor section of the SF-MPQ (P = 0.001) and the visual analogue portion of the SF-MPQ (P = 0.001).

CONCLUSION: Listening to music was an effective nursing intervention for the reduction of chronic osteoarthritis pain in the community-dwelling elders in this study.
Individualized music—a different approach to the restraint issue

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Rehabilitation nurses who work with geriatric patients are concerned about reliance on physical restraints, as are all nurses. Controversy exists as to the benefits and risks, as well as the ethical and legal consequences, of their use. Nurses are ambivalent about using restraints, believing that they affect patients' freedom, self-respect, and self-reliance; they also often believe that there are no appropriate alternatives. This pilot study explored the use of music as a potential alternative to using physical restraints with hospitalized patients. The research question was: Will patients have more positive behaviors, as measured by the Restraint Music Response Instrument (RMRI), while out of restraints and listening to preferred music compared with the patients not listening to music who are out of restraints while being observed? Forty medical-surgical patients participated in the study and were randomized into either the experimental group (music) or the control group (no music). The mean age of the 21 males and 19 females was 76.6 years (range 56-94). A t test for equality of means was used to determine if there were differences in the number of positive and negative behaviors in the preintervention, intervention, and postintervention phases between the two groups. There was a significant difference \( p < .01 \) in behaviors during the intervention phase.

CONCLUSION: Patients who listened to music had more positive behaviors while out of restraints than patients who were out of restraints but not exposed to music

The effect of music listening on acute confusion and delirium in elders undergoing elective hip and knee surgery

J Clin Nurs. 2004 Sep; 13(6B):91-6.

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This study was undertaken to determine the effect of music on elders undergoing elective hip and knee surgery who experience acute confusion and delirium postoperatively. Postoperative confusion and delirium in elders often cause complications that negatively affect recovery. Music listening was introduced as an intervention to an experimental group. Nurses documented episodes of acute confusion and delirium experienced by elders postsurgically. Scores from a readiness-to-ambulate profile to determine if patients were cognitively ready for postoperative therapy were evaluated. There was a significant decrease in the number of episodes of postoperative confusion among those in the experimental group compared with those in the non-listening control group. In addition, the experimental group had significantly higher scores on the readiness-to-ambulate profile than the control group. These findings indicate that music listening
is an effective nursing intervention that can be used to decrease acute postoperative confusion and delirium in elders undergoing elective hip and knee surgery.

**Music therapy with Alzheimer's patients and their family caregivers: a pilot project**


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The purpose of this paper is to present the results of a pilot project sponsored by a private foundation in Spain ("Fundacio la Caixa"), in order to demonstrate some of the applications of music therapy, and to measure more systematically some of its effects on people with a probable diagnosis of Alzheimer's Disease and Related Disorders (ADRD) in early-moderate stages of the disease, and their family caregivers. Subjects for this project were 14 patients (5 women and 9 men) with a probable diagnosis of Alzheimer's disease, and 14 family caregivers (9 women and 5 men) from a rural area outside of Barcelona. Their age range was 70 to 80 years. Prior to the beginning of the project, a neuropsychologist specialized in gerontology administered a series of standardized tests to the participants. These same tests were administered again 2 days before the end of the project and 2 months later for follow-up purposes. The results of the satisfaction questionnaire showed that the caregivers perceived an improvement in the social and emotional areas of their patients, and statistical tests showed significant differences between pre and posttest scores in the following tests: (a) Dementia Scale ($X^2 = 12.29, p = .002$), (b) NPI ($X^2 = 17.72, p = .001$), (c) the Cohen-Mansfield agitation scale ($X^2 = 11.45, p = .003$), (d) Burden Interview ($X^2 = 9.19, p = .01$), (e) Memory and Behavior Problems Checklist (frequency subscale) ($X^2 = 11.09, p = .004$), (f) STAI-S ($X^2 = 14.72, p = .001$), and (g) Beck's Depression Inventory ($X^2 = 9.38, p = .009$). These results and their implications are discussed extensively.

**Effects of individualized versus classical "relaxation" music on the frequency of agitation in elderly persons with Alzheimer's disease and related disorders**


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Confusion and agitation in elderly patients are crucial problems. This study tested Gerdner's mid-range theory of individualized music intervention for agitation. An experimental repeated measures pretest-posttest crossover design compared the immediate and residual effects of individualized music to classical "relaxation" music relative to baseline on the frequency of agitated behaviors in elderly persons with Alzheimer's disease and related disorders (ADRD). Thirty-nine subjects were recruited from six long-term-care facilities in Iowa. The sample consisted of 30 women and 9 men (mean age 82 years) with severe cognitive impairment. Baseline data were collected for 3 weeks. Findings from the Modified Hartsock Music Preference Questionnaire guided the selection of individualized music. Group A ($n = 16$) received individualized music for 6 weeks followed by a 2-week "washout" period and 6 weeks of classical "relaxation" music. Group B ($n = 23$) received the same protocol but in reverse order. Music interventions were presented for 30 minutes, two times per week. The Modified Cohen-
Mansfield Agitation Inventory measured the dependent variable. A repeated measures analysis of variance with Bonferroni post hoc test showed a significant reduction in agitation during and following individualized music compared to classical music. This study expands science by testing and supporting a theoretically based intervention for agitation in persons with ADRD.

**Effects of relaxing music on agitation during meals among nursing home residents with severe cognitive impairment**


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Relaxing music was hypothesized to buffer the general noise level typically found in dining rooms of nursing homes, exert a calming effect, and thus reduce agitated behaviors among residents with severe cognitive impairment. Twenty-nine nursing home residents with severe cognitive deficits participated in a 4-week protocol in which, following baseline observations (week 1), relaxing music was introduced (week 2), removed (week 3), and reintroduced (week 4). Subjects were observed in terms of total number of behaviors of the Cohen-Mansfield Agitation Inventory present during a given week, and the number of behaviors present on the subscales of aggressive, physically nonaggressive, verbally agitated, and hiding/hoarding behaviors. Significant reductions were observed on the cumulative incidence of total agitated behaviors (63.4%); as well as the cumulative incidence of physically nonaggressive behaviors (56.3%) and verbally agitated behaviors (74.5%). No significant reductions were noted in terms of aggressive behaviors and hiding/hoarding behaviors. Where significant reductions were achieved, a distinct pattern was observed. Agitation decreased during week 2, increased again during week 3, only to decrease again in week 4. In addition, variance effects were noted as well, as ranges and standard deviations of agitated behaviors narrowed over time. These findings are interpreted within Hall and Buckwalter's (1988) model of a progressively lowered stress threshold among dementia patients.

**Music therapy with imminently dying hospice patients and their families: facilitating release near the time of death**


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Hospice care seeks to address the diverse needs of terminally ill patients in a number of physical, psychosocial, and spiritual areas. Family members of the patient often are included in the care and services provided by the hospice team, and hospice clinicians face a special challenge when working with families of patients who are imminently dying. When loved ones are anticipating the patient's impending death, they may find it difficult to express feelings, thoughts, and last wishes. Music therapy is a service modality that can help to facilitate such communication between the family and the patient who is actively dying, while also providing a comforting presence. Music therapy as a way to ease communication and sharing between dying patients and
their loved ones is discussed in this article. The ways in which music therapy can facilitate a means of release for both patients and family members in an acute care unit of a large US hospice organization are specifically described. Case descriptions illustrate how music therapy functioned to allow five patients and their families to both come together and let go near the time of death. Elements to consider when providing such services to imminently dying patients and their families are discussed.

**Music listening for maintaining attention of older adults with cognitive impairments**

J Music Ther. 2002 Winter;39(4):244-64.

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Twelve older adults with cognitive impairments who were participants in weekly community-based group music therapy sessions, 6 older adults in an Alzheimer's caregivers' group, and 6 college student volunteers listened to a 3.5 minute prepared audiotape of instrumental excerpts of patriotic selections. The tape consisted of 7 excerpts ranging from 18 s to 34 s in duration. Each music excerpt was followed by a 7-9 s period of silence, a "wait" excerpt. Listeners were instructed to move a Continuous Response Digital Interface (CRDI) to the name of the music excerpt depicted on the CRDI overlay when they heard a music excerpt. Likewise, they were instructed to move the dial to the word "WAIT" when there was no music. They were also instructed to maintain the dial position for the duration of each music or silence excerpt. Statistical analysis indicated no significant differences between the caregivers' and the college students' group means for total dial changes, correct and incorrect recognitions, correct and incorrect responses to silence excerpts, and reaction times. The mean scores of these 2 groups were combined and compared with the mean scores of the group of elderly adults with cognitive impairments. The mean total dial changes were significantly lower for the listeners with cognitive impairments, resulting in significant differences in all of the other response categories except incorrect recognitions. In addition, their mean absence of response to silence excerpts was significantly higher than their mean absence of responding to music excerpts. Their mean reaction time was significantly slower than the comparison group's reaction time. To evaluate training effects, 10 of the original 12 music therapy participants repeated the listening task with assistance from the therapist (treatment) immediately following the first listening (baseline). A week later the order was reversed for the 2 listening trials. Statistical and graphic analysis of responses between first and second baseline responses indicate significant improvement in responses to silence and music excerpts over the 2 sessions. Applications of the findings to music listening interventions for maintaining attention, eliciting social interaction between clients or caregivers and their patients, and evaluating this population's affective responses to music are discussed.

**The use of music to promote sleep in older women**


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Fifty-two women over the age of 70 participated in a study to investigate the use of an individualized music protocol to promote sleep onset and maintenance. They were recruited from the practices of physicians and nurse practitioners, and met the inclusion and exclusion criteria of the International Classification of Sleep Disorders (1990), and the Diagnostic and Statistical Manual of Mental Disorders (1994). Results indicated that the use of music decreased time to sleep onset and the number of nighttime awakenings. Consequently, it increased satisfaction with sleep. Nurses may wish to recommend the use of music at bedtime to older women with insomnia.

**Calming music and hand massage with agitated elderly**

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BACKGROUND: Agitated behavior is a widespread problem that adversely affects the health of nursing home residents and increases the cost of their care.

OBJECTIVE: To examine whether modifying environmental stimuli by the use of calming music and hand massage affects agitated behavior in persons with dementia.

METHOD: A four group, repeated measures experimental design was used to test the effect of a 10-minute exposure to either calming music, hand massage, or calming music and hand massage simultaneously, or no intervention (control) on the frequency and type of agitated behaviors in nursing home residents with dementia (N = 68). A modified version of the Cohen-Mansfield Agitation Inventory was used to record agitated behaviors.

RESULTS: Each of the experimental interventions reduced agitation more than no intervention. The benefit was sustained and increased up to one hour following the intervention (F = 6.47, p<.01). The increase in benefit over time was similar for each intervention group. When types of agitated behaviors were examined separately, none of the interventions significantly reduced physically aggressive behaviors (F = 1.93, p=.09), while physically nonaggressive behaviors decreased during each of the interventions (F = 3.78, p< .01). No additive benefit resulted from simultaneous exposure to calming music and hand massage. At one hour following any intervention, verbally agitated behavior decreased more than no intervention.

CONCLUSION: Calming music and hand massage alter the immediate environment of agitated nursing home residents to a calm structured surrounding, offsetting disturbing stimuli, but no additive benefit was found by combining interventions simultaneously.

**Sleep promotion**

Richards KC

The aging process introduces many changes that affect the whole person, including sleep. Age-
related changes in the nervous system, acute and chronic illnesses, medications, primary sleep disorders, and factors associated with hospitalization in the critical care unit are elements identified with sleep disturbance in the elderly patient hospitalized in the critical care unit. One of the most important challenges for critical care nurses is to promote a healing environment for elderly patients where they can obtain the sleep necessary for recovery. Potentially effective nursing interventions for sleep promotion are those caring interventions that focus on the body-mind connection, such as back massage, relaxing music, imagery, and muscle relaxation. Investigations of the effectiveness of nursing interventions for sleep promotion are needed.

**Dinner music for demented patients: analysis of video-recorded observations**

Ragneskog H, Kihlgren M, Karlsson I, Norberg A

At a nursing home ward for demented patients, selections of dinner music were played during three periods of 2 weeks. At the end of the study was a control period. The reactions of five patients to three different types of music were registered by video observations. This study showed that the patients were affected by music, particularly soothing music. For example, it was found that when music was played one of the study's restless patients became unusually calm whereas another fed herself more than usual. The patients spent more time with dinner when music was played. Dinner music made the patients eat more calmly. Music as a nursing tool is an intervention that is simple to realize and worth trying. A tentative conclusion of this study is that music can beneficially affect restless and agitated demented patients.

**Music and other strategies to improve the care of agitated patients with dementia. Interviews with experienced staff**

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Many patients with dementia symptoms display forms of agitation such as the repeating of words, restlessness and aggression. These forms of behaviour may inflict strain on the co-patients and the caregivers. In this study, 17 experienced formal caregivers from nursing homes and collective residential units were interviewed about their experiences of agitated patients with dementia and strategies to improve their care. The questions were open except for specific questions about sound, music, and opinions about pharmacological treatment. A calm atmosphere and a slow pace emerged as important strategies to control agitation. Fixed routines could develop this. The mixing of lucid and agitated dementia patients appeared as a major problem, because some lucid patients became angry when patients with dementia displayed agitation. Irritability in one patient could trigger agitation in other patients but was possible to stop at an early stage. Several responders had successfully used music to calm individual agitated patients. Music seemed to be an underestimated nursing intervention to control agitation in daily life, but uncontrolled sound could cause agitation in the patients and stress in the nursing staff.