



Relief of postoperative pain with jaw relaxation, music and their combination

Marion Good^{a,*}, Michael Stanton-Hicks^b, Jeffrey A. Grass^b, Gene Cranston Anderson^a,
Charles Choi^c, Laree J. Schoolmeesters^a, Ali Salman^a

^aFrances Payne Bolton School of Nursing, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106-4904, USA

^bThe Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44106, USA

^cFairview Health System, 18101 Lorain Avenue, Cleveland, OH 44111, USA

Received 11 September 1998; received in revised form 3 December 1998; accepted 24 December 1998

Abstract

The aim of this randomized controlled trial was to determine the effect of jaw relaxation, music and the combination of relaxation and music on postoperative pain after major abdominal surgery during ambulation and rest on postoperative days 1 and 2. Opioid medication provided for pain, following abdominal surgery, does not always give sufficient relief and can cause undesired side effects. Thus, additional interventions such as music and relaxation may provide more complete relief. Previous studies have found mixed results due to small sample sizes and other methodological problems. In a rigorous experimental design, 500 subjects aged 18–70 in five Midwestern hospitals were randomly assigned by minimization to a relaxation, music, relaxation plus music, or control group. Interventions were taught preoperatively and tested postoperatively. The same amount of time was spent with subjects in the control group. Pain was measured with the visual analogue sensation and distress of pain scales. Demographic and surgical variables, and milligrams of parenteral or oral opioids in effect at the time of testing were not significantly different between the groups, nor did they correlate with pain scores. Controlling for pretest sensation and distress, orthogonal a priori contrasts and multivariate analysis of covariance indicated that the three treatment groups had significantly less pain than the controls, ($P = 0.028–0.000$) which was confirmed by the univariate analysis of covariance ($P = 0.018–0.000$). Post hoc multivariate analysis revealed that the combination group had significantly less sensation and distress of pain than the control group on all post-tests ($P = 0.035–0.000$), and the relaxation and music groups had significantly less on all tests ($P = 0.022–0.000$) except after ambulation. At post ambulation those using relaxation did not have significantly less pain than the controls on both days and those using music did not on day 1, although there were some univariate effects. A corresponding significant decrease in mastery of the interventions from pre to post ambulation suggests the need for reminders to focus on the intervention during this increased activity. Physicians and nurses preparing patients for surgery and caring for them afterward, should encourage patients to use relaxation and music as adjuvants to medication for postoperative pain. © 1999 International Association for the Study of Pain. Published by Elsevier Science B.V.

Keywords: Pain; Music; Relaxation

1. Introduction

Each year in the United States, 23 million people undergo surgical operations and experience postoperative pain (Chapman, 1985). The pain increases stress responses, which in turn increase tissue breakdown metabolism, coagulation and fluid retention, with deleterious effects on recovery. Pain also interferes with appetite and sleep, and it can contribute to complications, prolonging hospitaliza-

tion (Acute Pain Management Guideline Panel, 1992; Miaszkowski, 1993).

Even with medication, most postoperative patients report moderate to severe pain at rest that increases during ambulation (Bonica, 1983; Weis et al., 1983). After activity ceases, pain may continue but more medication may be unavailable, since it can only be given at prescribed intervals. Some patients may be especially sensitive to pain, or have insufficient response to medication. Others may wish to avoid the side effects of increased doses of opioids.

Relaxation and music have been recommended as adjuvants to medication. Both act on pain by decreasing anxiety

* Corresponding author. Tel.: +1-216-368-5975; fax: +1-216-368-3542; e-mail: mpg@po.cwru.edu

(Borkovec and Sides, 1979; Hanser et al., 1983), lowering muscle tension and distracting attention (Good, 1995), thereby affecting the central control processes that modulate pain transmission. Relaxation directs the mind to concentrate on relaxing muscles, breathing evenly and reducing thoughts. Music is composed of auditory tones and rhythms that do not direct the mind but distract it, and they relax the body as well. Music can focus attention, facilitate breathing and stimulate the relaxation response (Livingston, 1979).

Some studies have found that relaxation and music reduced pain, but in others results have been mixed due to small samples and other methodological problems, including lack of random assignment, lack of control for pretest pain, and little practice or assurance that subjects had mastered the techniques (Blankfield, 1991; Henry, 1995; Stevenson, 1995; Good, 1996; Sears and Carroll, 1998). In some studies relaxation or music reduced reports of sensory and affective pain (Flaherty and Fitzpatrick, 1978; Lawlis et al., 1985; Levin et al., 1987; Mullooly et al., 1988; Miller and Perry, 1990), while in others they reduced only affective pain (Wells, 1982; Horowitz et al., 1984; Mogan et al., 1985), had different results on different measures of pain (Good and Chin, 1998), or on different postoperative days (Good, 1995; Good and Chin, 1998). In other studies relaxation or music had no effect on pain but reportedly, provided a relaxing and pleasant experience (Heitz et al., 1992; Zimmerman et al., 1996; Heiser et al., 1997).

As a result, the usefulness of these interventions remains unclear. In the randomized controlled trial reported here, jaw relaxation, music and the combination of relaxation and music were compared at ambulation and rest in a large sample with optimum control.

2. Methods

2.1. Sample

An experimental pretest–post-test design, was used to study 617 subjects recruited from three tertiary care medical centers and two suburban community hospitals in a large Midwestern city over a period of 29 months. All patients spoke English, were scheduled for major abdominal surgery, and were expected to use patient controlled analgesia (PCA), and to ambulate after surgery. Patients with laparoscopic or vaginal surgery, epidural analgesia, or a diagnosis of psychosis, mental retardation, or opioid dependence were excluded. The study was approved by the investigational review board of each institution and all patients provided informed written consent preoperatively.

A convenience sample of subjects was selected from the pre-admission testing appointment schedules of the five hospitals. After an interview, a computerized minimization program (Zeller et al., 1997) was used to randomly assign them to a control group receiving usual care, three experimental groups, relaxation, music and combination, and two

testing sequences, ambulation first or rest first. The program controlled for gender, surgical specialty, intestinal surgery, chronic pain, first surgery and antidepressant/benzodiazepine use. Of the total sample, 165 (27%) were assigned to the relaxation group, 151 (25%) to the music group, 149 (24%) to the combination group, and 152 (25%) to the control group. Half of the subjects were randomly assigned to be tested at ambulation first ($n = 318$, 52%) and half to be tested at rest first ($n = 299$, 49%). There were no significant differences in the number of subjects assigned to each treatment group, $X^2(3, N = 617) = 1.03$, $P = 0.79$, or to each testing sequence, $X^2(1, N = 617) = 0.21$, $P = 0.65$.

After surgery, 76 (12%) subjects no longer qualified for the study, and 33 (5%) withdrew. Reasons for disqualification were epidural anesthesia, surgery changed or canceled, and illness or other factors. Reasons for withdrawal were that patients did not feel well, did not want to use the treatment ($n = 8$), wanted to rest, or provided no reason. Thus there were 500 subjects in the final sample. The number of subjects withdrawing did not significantly differ in the four groups, $X^2(3, N = 33) = 4.21$, $P = 0.24$, or between the two testing sequences, $X^2(1, N = 33) = 3.67$, $P = 0.06$, or between sequences per group, $X^2(3, N = 33) = 1.09$, $P = 0.78$.

Two hundred twenty-one (44%) subjects in the final sample missed at least one test, and 28 (6%) missed more than one test. Reasons for a missed test were adverse symptoms ($n = 80$), condition at time of test ($n = 36$), refusal to ambulate ($n = 41$), early discharge ($n = 14$), too much pain ($n = 10$), did not like the music ($n = 31$), and miscellaneous or no reason given ($n = 37$). Those who had complete data for at least one of the four tests were included in the analysis (Everitt and Dunn, 1991). On Day 1, there were 340 subjects tested during ambulation, and 458 at rest; on Day 2, there were 401 were tested during ambulation and 443 at rest.

In the final sample, there were 87 (17%) men and 413 (83%) women; 350 (70%) were from the three tertiary care centers, and 150 (30%) from the two community hospitals. Their mean age was 45.37 (SD = 11.03), range 20 to 70 years and the majority were Caucasian (81%), Protestant (52%), married (61%), employed (69%), had completed a year or more of college (64%), and had a monthly household income of 3000 US \$ or less (57%). Over half smoked (52%), and most had previous surgery (94%), did not drink alcohol (86%), and did not have chronic pain (64%), or take benzodiazepines or antidepressants (85%), or steroids (89%). The mean body mass for the sample was 28.84 kg/m², SD = 7.94. The final sample underwent gynecological (50%), gastro-intestinal (28%), exploratory (18%) and urinary surgery (4%). Subjects spent an average of 3 h 15 min, (SD = 1 h 8 min) in surgery. During surgery, cancer was found in 19%. The majority of surgical incisions were in the lower abdomen (62%); with 54% vertical incisions, and 35% horizontal. Most subjects (93%) received initial postoperative orders for PCA with a lockout range of 5 to 10 min, but 4% received intramuscular analgesics as needed,

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات