Music and postoperative anxiety: A randomised controlled trial
(Wang, Kulkarni, Dolev & Kain, 2002)

The first study was a randomised controlled trial (RCT) exploring the effects of a 30-minute musical intervention on patient’s anxiety levels prior to their operation. The sample size was 93 with 48 listening to music (intervention) and 45 not (control). The patients were randomly assigned to either the control or intervention group. Each experimental session took half an hour and their anxiety levels were measured before and after the experiment. Following the experiment, Group 1 (intervention group) reported lower levels of stress and anxiety than Group 2, who reported no significant change. Therefore, the results of this study largely correlate with results of previous medical-music studies.

Music therapy to reduce pain and anxiety in children with cancer undergoing lumbar puncture: A randomized control trial (Thanh Hnin Nguyen, Nilsson, Hellström & Bengtson, 2010)

The second study investigated the effect of music therapy in children with leukemia undergoing lumbar puncture operations. It involved 40 children (7-12 years) who were randomly allocated to either the intervention group (n=20) where they listened to their choice of music through headphones for 10 minutes before their procedure; or the control group (n=20) where they had headphones on but did not listen to any music. Following the experiment, 10 children from each group were chosen for interviews during which it was established that music acted as a distractor in the experiment and helped the children endure the pain and anxiety they were feeling at the time of their procedure.

The effectiveness of music in relieving pain in cancer patients: A randomized controlled trial (Huang, Good & Zauszniewski, 2010)

The third study explored the use of music in relieving the pain levels of cancer patients. 126 patients who had been hospitalized for pain relating to cancer were randomly allocated to the intervention or control group (with 62 and 64 patients, respectively). The study found that after choosing their own music and listening to it for 30 minutes, 42% of the intervention group reported at least a 50% decrease in pain, whereas only 8% of the control reported the same relief. This concluded that music was a helpful aid in reducing pain experienced by these cancer patients.

The effect of music intervention in stress response to cardiac surgery in a randomized clinical trial (Nilsson, 2009)

This study was an RCT that examined how post-open heart surgery patients’ cortisol (stress hormone) levels were affected by being on bed rest for up to an hour with music playing. The study size was 58 patients who had all undergone either an open coronary artery bypass graft (CABG) surgery or an aortic valve replacement surgery. The level of cortisol was measured pre and post-experiment, revealing an average of 484.4nmol/L in the intervention group (who had listened to music), and 618.8nmol/L in the control group, a 24.4% difference. This study concludes in suggesting that music has both an analgesic and anxiolytic effect on patients following open heart surgery.

Hierarchy of Evidence

According to Polit & Beck’s (2010) hierarchy of evidence, the gold-standard of measuring the strength of scientific evidence is the systematic review. This identifies and synthesizes the information from a number of definitive randomized controlled trials (RCTs). Systematic reviews are Level I on the hierarchy of evidence, whereas RCTs (which have been explored in this presentation) are Level II. Due to the RCTs being Level II on this hierarchy, it can be said that they also provide very strong scientific evidence, similar to the systematic reviews. RCTs involve the participants being randomly allocated to intervention and control groups, essentially minimizing biases such as allocation and performance biases (that the hierarchy does not incorporate).

Using music as a therapy for patients is a very beneficial and health-promoting intervention. As stated above, music stimulates the production of cells that boosts the human body’s immune response (Novotny, 2013). The five studies that have been investigated in this presentation all suggest that music can aid in the reduction of pain and anxiety felt by a patient. For this reason, the use of music as a medical intervention should be continued.

Using music as a therapeutic intervention has many advantages: these include being non-invasive to the patient, cheap and relatively simply to implement (involving the use of a set of headphones and the patient being in the environment they expect to be in, therefore not needing to be transferred anyway or have any extra measures being taken) as well as being supportive of the patient’s autonomy and their involvement in the process. Many of the studies described involving the patient and allowing them to choose their own music to listen to: this means that the music played was familiar to them and perhaps more therapeutic than listening to a song that they did not recognize. Another advantage is the minimizing of unwanted side-effects: analgesics such as morphine or codeine can have negative side-effects associated with the reduction of pain. Using music as an alternative therapy would cause the patient no unwanted side-effects.
Search Strategy

The search for relative articles and resources started with the search for “Reducing stress in waiting rooms with music.” This provided a wide variety of methods of distraction and stress-relief used, but it also stressed the fact that it was not only used in waiting rooms. The search then became “music to reduce pain and stress.” This provided information and articles about music therapy being used in all scenarios (pre-operative, post-operative, during procedures and in patients with varying conditions (for example, Alzheimer’s, Parkinson’s, patients with chronic heart conditions and patients who had cancer and were undergoing procedures to treat it).

The Databases used in this presentation were:

◆ Google Scholar
◆ The Cochrane Library

Systematic reviews and meta-analyses were excluded from this research, aiming to focus primarily on randomised controlled trials. Extra filters on the search were the English language, and recent publication dates to ensure the information gathered was as relevant to current-day as possible.

References


