



KEY POINT SUMMARY

OBJECTIVES

This study investigates whether relaxing music reduces anxiety in patients receiving mechanical ventilatory support.

The effect of music therapy on physiological signs of anxiety in patients receiving mechanical ventilatory support

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Key Concepts/Context

Mechanical ventilatory support is commonly used in critical care units for treating patients with breathing difficulties. Although mechanical ventilation is a life-saving treatment, an estimated 70-80% of patients depending on the mechanical system for respiratory function can experience significant levels of anxiety during the treatment process. This can lead to several adverse health outcomes that may complicate and extend the healing process, creating significant difficulties for patients and critical care workers. Intravenous sedative medications frequently are given to patients experiencing anxiety; however, this method has been known to create further adverse health effects. Previous studies have shown that relaxing music can influence a person's emotions and physiological responses; however, there is a lack of research into the use of musical therapy on patients undergoing mechanical ventilation treatment.

Methods

Data were collected over a period of eight months.

60 patients receiving mechanical ventilatory support in an intensive care unit in Turkey were selected to participate. The range of patient age was 18-70. There were 32 males and 28 females. No patients had psychiatric or neurological illnesses, were receiving inotropic support, or had taken neuromuscular blockers or antihypersensitive drugs. All patients had haemodynamic stability, were on pressure support ventilation mode, were able to hear, and had Glasgow Coma Scale Point 9 or above.



Patients were divided into two groups. One group of patients received 60 minutes of music therapy while the other did not. Both groups stopped receiving intravenous anesthetics 30 minutes prior to the experiment.

Patients undergoing musical therapy listened to mp3s of classical music playing at a rate of 60-66 beats per minute using disposable headphones and a media player. A specific classical music piece used was chosen due to the emotional appeal of its rhythmic and polyphonic properties as noted in previous scientific studies.

A research nurse collected physiological data while remaining with the patients during the entire intervention period. Physiological data was collected from all subjects in both groups immediately before the intervention and 30 minutes after the intervention had finished.

Physiological indicators of anxiety gathered for the study were measured through systolic and diastolic blood pressure, pulse rate, respiratory rate, and oxygen saturation.

For data analysis, the Bonferroni correction was used for the time periods between the 0 and 30th, 0 and 60th, 0 and 90th, 30th and 60th, and 30th and 90th minutes of the experiment.

Findings

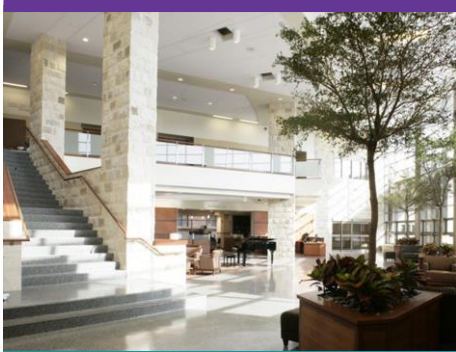
Diastolic and systolic blood pressure as well as respiratory rates decreased over time for the group of patients who underwent musical therapy. The group of patients who did not listen to music during the study showed varying patterns of decreasing physiological readings over time. Since decreases in these physiological readings indicate relaxation, these findings support the idea that musical therapy reduces patient anxiety and therefore reduces the necessity for sedation as well as the length of time spent on the ventilator.

Design Implications

Individual mp3 players for each mechanical ventilatory support system would give patients the choice of listening to music or undergoing treatment in silence. Further, individual music players could be used to allow patients or their caretakers to select specific pieces of music that are preferred by the patients, thereby potentially further reducing anxiety.

Limitations

The authors listed several limitations. Patients experienced their musical therapy sessions at different times during the day, and the time of day at which data were collected may affect anxiety levels. One specific piece of music was played throughout the whole experiment, so there is a strong possibility of noticeable



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variability in results depending on what music is played for the patients. The efficacy of music as a relaxing agent may also depend on the patient’s interest in music. This study observed patients at mixed levels of consciousness; some were conscious while others were unconscious or semi-conscious. The research nurses were not blinded with regard to the allocation of patients in the two groups during the experiment. No blinding techniques were used during the analysis of physiological readings.

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