SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

This study tests whether critically ill patients receiving mechanical ventilatory support can experience reduced anxiety by listening to self-initiated patient-directed music.

DESIGN IMPLICATIONS

MV systems could be renovated to hold individual audio players for patients. Noise-cancelling headphones could be most effective in emphasizing the music while minimizing other ICU noises. Since this study implies that listening to music decreases both anxiety and the need for sedative medication, any design measure that would maximize MV patient comfort while the patient is listening to music should be considered.

Effects of patient-directed music intervention on anxiety and sedative exposure in critically ill patients receiving mechanical ventilatory support

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Key Concepts/Context

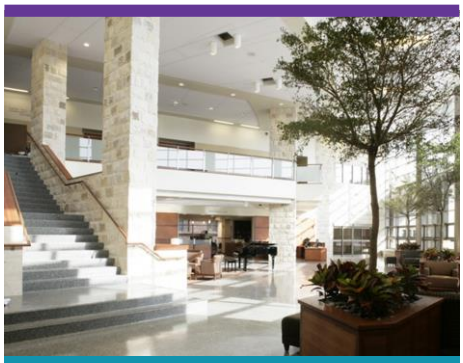
Critically ill patients receiving treatment through mechanical ventilation (MV) are often given intravenous sedative and analgesic medications in order to reduce anxiety and promote ventilator synchrony and comfort. However, since these medications are often administered at high doses for long periods of time, they are frequently associated with various adverse health effects that can complicate healing and ultimately create more anxiety in the patient. Interventions that reduce anxiety with minimal use of sedative medications are needed. Previous limited studies have shown that listening to relaxing music that is preferred by patients can reduce anxiety. More research is required to determine if patient-directed music (PDM) can reduce anxiety and sedative use in patients receiving MV treatment.

Methods

373 patients from 12 intensive care units (ICUs) at five American hospitals receiving MV support for respiratory failure between the years of 2006 and 2011 were enrolled in the study.

Participants were randomly divided into three groups: PDM intervention, active control with noise-canceling headphones (NCH), or normal ICU care. All patients remained on protocol for up to 30 days, so long as they were receiving ventilatory support.

Participants in the PDM group were allowed to choose from six different audio CDs and self-initiate playback through noise-cancelling headphones whenever they felt



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anxious. A system recorded data on listening time. Participants in the NCH group could use noise-cancelling headphones whenever they wished.

Exposure to sedatives was assessed 24 hours prior to enrollment in the study and each day during the study. Administration of sedatives was not directed by any specific study protocol. Aggregates of intensity and frequency of administration produced a sedative exposure score for each patient.

Findings

PDM patients listened to music for a mean of 79.8 minutes per day, while NCH patients wore their headphones for a mean of 34 minutes per day. More PDM patients were extubated at the end of the study. PDM produced a consistently lower VAS-A score by more than 19mm during the study when compared to the group that received normal MV care. By the fifth day of the study, the average PDM patient had a sedation intensity score of 2.8 while their normal MV counterparts had an average sedation intensity score of 4.4. In general, patients with higher sedation intensity scores had higher VAS-A scores. In summary, the PDM intervention decreased both sedative use and anxiety over time more effectively than NCH or normal MV care.

Limitations

A limited number of six CDs were available to patients, leaving a narrow range of patient choices in music for the study. Nurses were allowed to provide anonymous feedback on the study; however patients were not invited to do so. Author-identified limitations are as follows: Research nurses completed only one anxiety assessment per day. Patients sometimes deferred these assessments due to fatigue, sedation, or medical condition. Some PDM patients relied on bedside nurses to assist with music equipment, potentially affecting the frequency or length of music listening by patients or the relationship between anxiety and music listening time. ICU nurses were not blinded to the assignment groups, which could pose a potential bias. No data was collected from patients that were extubated or transferred from the ICU.

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