Will scheduled hours of quiet time decrease the incidence of ICU delirium in adult critical-care patients?

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Introduction

Patients in the intensive care unit (ICU) have an increased need for sleep, yet the ICU exposes them to high levels of noise, light, intrusion of staff and visitors, and patient care activites; all of which pose a significant challenge for sufficient sleep and rest. Current evidence suggests a link between sleep, delirium, and mortality. Delirium has been associated with extended hospital stays, higher medical costs, and increased risk for death. Although the link between sleep deprivation and delirium has yet to be proven, current knowledge that sleep deprivation affects cognitive function, points to a likely relationship between the two. The goal of this project is to explore if strict enforcement of scheduled hours of quiet time would decrease the incidence of ICU delirium in adult critical-care patients.

PICO Question

Population: Adult critical-care patients.

Intervention: Strict enforcement of scheduled quiet time on the unit.

Comparison: Daily unit activities without the implementation of quiet time.

Outcome: Decrease the incidence of delirium in ICU patients.

Question: Will strict enforcement of quiet time decrease the incidence of ICU delirium in adult critical-care patients?

Methods

A literature search was conducted using CINAHL, EBSCOhost, PubMed, and Lion Search databases.

Keywords: *ICU delirium, quiet time, delirium and sleep, enforced visitation, rest periods, patient outcomes*

Inclusion Criteria: Articles within 10 years, inpatient hospitals, adult critical-care patients.

The initial search yielded 80 articles, 7 were included for this project.

Results

ARTICLE	METHODS	RESULTS
Gardner, Collins, Osborne, Henderson, and Eastwood (2008)	Sample size of 299 participants. The study group were received a scheduled quiet time intervention, evaluating noise levels, inpatients' rest and sleep behaviors, and well-being.	The experimental group experienced half the sound of the control group, 94% reported they felt they had enough time with visitors, 54% were not annoyed by other patients' visitors, and 87% liked the intervention. Majority of surveyed nurses supported quiet time.
Maidl, Leske, and Garcia (2013)	Nonrandomized, uncontrolled quiet time trials were completed in critical care, dual-units. The sample included patients from the Neuroscience ICU and CVICU. Environmental stressors were reduced and patient rest promoted before the start of the trials, which involved 129 patients in 205 trials, some being repeated quiet times.	Although no significant statistical data, patients rated sleep higher and anxiety lower during the trials. 93% of patients reported the quiet time trials mattered to them. The lack of statistical evidence may have to do with the interventions put in place in the settings (i.e. BP medications controlling blood pressures), and therefore, it is not fully known how positive the quiet times were. Nursing staff reported quiet time gave them time to catch up on charting, reducing their stress and allowing better care to be given when it was over.
Olson, Borel, Laskowitz, Moore, and McConnell (2001)	Sample size of 239 patients and 2,975 observations. Patients in an intensive care unit were observed 8 times a day before and after a quiet time protocol was implemented in two phases that each lasted 2 months.	Quiet time was effective in reducing sound and light levels and patients were 1.6x more likely to be asleep during quiet time than those in the control group.
Richardson, Thompson, Coghill, Chambers, and Turnock (2009)	Aimed at decreasing noise levels through a noise reduction intervention program at three hospitals. Developed primarily nursing focused clinical guidelines in three phases consisting of pre-assessment, education, and implementation.	Average peak noise levels were significantly reduced from 96.48 dB to 77.52 dB.
Taylor (2008)	Aimed at determining best visiting practices, through a naturalistic research design, three questionnaires were given to patients, visitors, and staff in an oncology setting.	All groups favored set visiting times and felt positively about a quiet time.
Weinhouse et al. (2009)	Literature review of the clinical and neurobiologic effects of sleep deprivation along with the potential relationship between sleep deprivation and delirium in intensive care unit patients.	Sleep deprivation has been found to be clinically and experimentally similar to delirium and may play a role in the development of delirium. Similarities include attention and memory deficits, poor thought processing, and alterations in mental status.
Xie, Kang, and Mills (2009)	Clinical review aimed at answering the questions of whether noise is the most disruptive factor to sleep for ICU patients, what patients think the most disturbing noise source is, and how effective noise reduction strategies in the ICU are.	Noise is just one factor disrupting sleep, as patients view staff conversations and alarms are most disturbing, and sound masking appears to be the most effective method for improving sleep.

Discussion

Quiet time, dimming or turning off lights, reducing ambient noise levels, restricting visitors, intrusions, and procedures, positioning the patient comfortably, administering pain medications, posting a "do not disturb sign" on patient doors. These are some of the ways nursing can assist with quiet time, which can decrease the incidence of ICU delirium and improve overall outcomes.

Conclusions

Sleep deprivation is a major cause for concern among health professionals, with ICU patients being at highest risk. Nurses play a key role in developing, implementing, and leading changes to improve patient's sleep. Prevention and treatment of sleep deprivation may contribute to the prevention or improvement of ICU delirium and its negative consequences. The research shows a clear link between sleep deprivation and development of ICU delirium, which lead to impaired cognitive function and extended hospital stays.

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