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Effects of Noise Reduction and Care Clustering on Quality of Sleep in Critical Care Patients

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Effects of Noise Reduction and Care Clustering on Quality of Sleep in Critical Care Patients

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PATIENT CARE ISSUE

Background & Significance of Sleep in Critical Care Patients

- Extreme sleep deprivation in ICU patients has been a common problem over the past 30 years (Nesbitt & Goode, 2013).
- A lack of sleep can have many detrimental consequences on patients, including negative effects on multiple body systems, such as neurological, immune, cardiovascular, and respiratory (Tembo & Parker, 2009).
- Cognitive impairment is the most readily observable presentation of sleep deprivation (Cirelli, 2014).
- Reduced sleep can lead to mental status changes, resulting in depression, anxiety, poor mood, irritability, and poor judgment (Cirelli, 2014).
- A decrease in sleep can disrupt circadian rhythms, causing body temperature differences during wake and sleep cycles (Cirelli, 2014).

EVIDENCE-BASED PRACTICE QUESTION

Question: In critical care patients (P), how do reduced noise levels (I), compared to care clustering (C), affect the quality of sleep (O)?

P: Critical Care Patients

I: Reduced Noise Levels

C: Care Clustering

O: Quality of Sleep

REGISTERED NURSE INTERVIEW

Grandview Medical Center RN, Vernena Hibbitt, stated:

- Sleep deprivation is a problem on the unit where she currently works.
- Patients will often complain about noise disruptions during the day and night.
- Interventions are implemented to keep noise levels and nursing care interruptions to a minimum.
- Two hours are set aside each afternoon to enforce a time of quiet throughout the unit for the benefit of the patients and staff.
- Noise reduction and care clustering allow for better periods of rest, which she observes result in lower levels of anxiety and blood pressure.

METHODS

Databases: UpToDate, CINAHL, PubMed, PsycInfo, Proquest, and CCForum

Inclusion Criteria: Research published between 2009 and 2014 pertaining to the quality of sleep, effects of noise, and implementation of nurse care clustering on critical care populations.

Exclusion Criteria: Articles published more than 5 years ago, or articles that solely discussed specific interventions other than the topics of quality of sleep, noise reduction, and nurse care clustering in critical care populations.

Key Words: ICU patients, sleep deprivation, insomnia, health, nursing, care clustering, promoting sleep, delirium, interventions, noise.

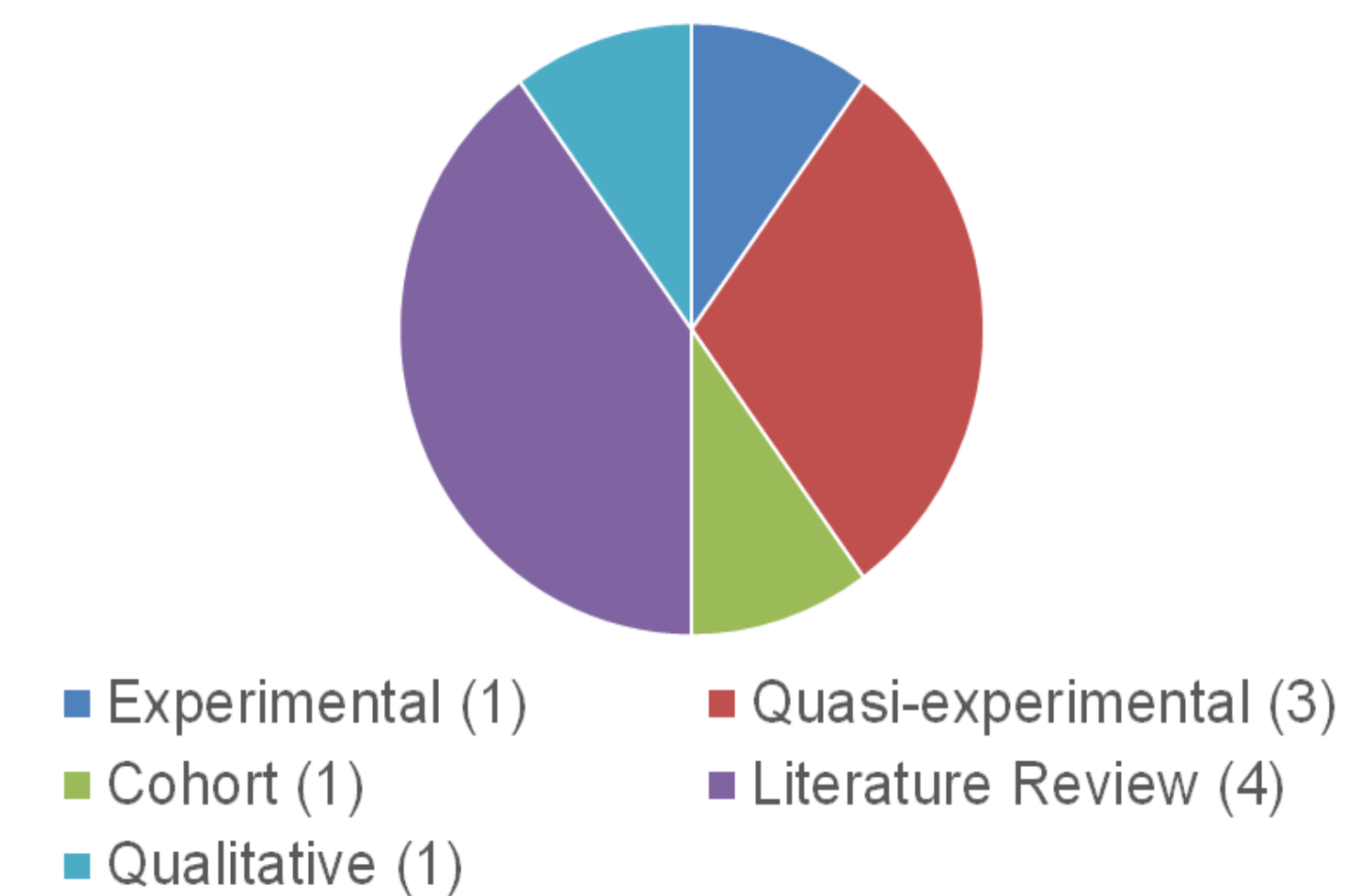
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RESULTS

Articles Examined	20
Articles Used	10

Levels of Evidence



SYNTHESIS OF EVIDENCE

- The best two ways to decrease fatigue are to sleep longer or to have fewer interruptions in sleep (Cirelli, 2014).
- Noise reduction evidence:
 - Higher noise levels increase the number of arousals/awakenings, which impair the restorative function of sleep, thus prolonging the healing process (Waye, Elmenhorst, Croy, & Pedersen, 2013).
 - The heart monitor alarm, IV pump alarm, nebulizer, and vital checks were reported as the most disrupting sources of noise (Li, Wang, Vivienne Wu, Liang, & Tung, 2011).
 - Simple interventions, such as distributing eye masks and earplugs, helped promote sleep (Jones & Dawson, 2012).
 - It is not unanimously agreed that noise is the most significant cause of sleep disturbance (Xie, Kang, & Mills, 2009).
- Care Clustering evidence:
 - Nurses appear to want to promote sleep, but do not always follow the evidence to do so (Eliassen & Hopstock, 2011).
 - Numerous nocturnal nursing interventions disrupt sleep, and 13.9% of them could be safely omitted (Le *et al.*, 2012).
 - Sleep promotion interventions are feasible, but are less likely to be performed because they require more time and effort on the part of the healthcare provider (Kamdar *et al.*, 2013).
- "Nursing education programmes and ICU introductory courses must be reviewed in order that nurses are educated to recognize the importance of sleep" (Nesbitt & Goode, 2013, p. 234).

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

- Noise reduction to encourage undisturbed sleep can be accomplished by minimizing the level of noise made by staff and by distributing earplugs.
- Clustering care, by postponing non-essential nighttime interactions and collectively prioritizing critical interventions, will limit sleep disturbances.
- Intensive care units should be given uniform sleep assessments to help nurses assess patients' sleep patterns correctly.

LIMITATIONS

- Higher levels of evidence are needed in order to make strong recommendations.
- There needs to be more research on how to practically implement sleep promotion into everyday nursing care.
- The evidence is inconclusive on whether noise reduction or care clustering interventions are more effective.

ACKNOWLEDGEMENTS

We would like to thank Vernena Hibbitt for her information regarding sleep in critical care patients.