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Eye Mask and Earplug Use to Improve Sleep Quality During Acute Hospitalizations

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Abstract

Sleep deprivation is a commonly shared issued among hospitalized patients. Current sleep promotion methods introduced in hospital settings include turning off lights and televisions after certain times, as well as reducing the time staff spend in patient rooms. This, however, does not address scenarios where necessary assessments and interventions need to be performed during the night in order to maintain adequate and quality care of patients. As a result, excessive noise and unwanted light exposure could occur and thus contribute to a patient's inability to get a quality night's sleep. Inexpensive non-pharmacological interventions such as eye masks and earplugs are currently available on units but are rarely utilized during a patient's stay. Based off an analysis of current research, the majority of study findings revealed that the use of eye masks and earplugs did improve the quality of sleep of patients in a hospitalized setting in comparison to standard sleep promotion methods. This indicates that current practices could seek to implement these devices as an additional resource for improving patient sleep.

Purpose

The purpose of this project was to systematically analyze existing literature on the use and effectiveness of eye masks and earplugs as compared to standard sleep promotion methods on improving the sleep quality of adults during their acute hospital stay.

Introduction

Patients report having significantly worse sleep duration in the hospital compared to at home as a result of noise (59%), nursing interruptions (30%), bright lights (16%), and unfamiliar surroundings (14%).[2] Sleep has been known to be an important factor in the recovery process for individuals. So, when patients experience poor sleep during their hospitalization, they can experience things such as delayed recovery times, increased risk of falling, and delirium.[3,8] While pharmacological interventions like melatonin and escopiclone are commonly prescribed for the treatment of insomnia, some of these medications can have prolonged sedative effects and confusion.[8] Nonpharmacological sleep promotion interventions like music therapy and sleep aid devices do not share the same lasting effects but are unfortunately not widely implemented.

Methods

Database: PubMed
Keywords: Sleep, hospitalization, eye masks, earplugs
Additional Filters: 'Clinical trial', 'Randomized Controlled Trial' (RCT), and 'Meta-analysis', 2014-now
Results: 22 articles met the above criteria and five were included due to their relevance to the proposed PICO(T) question.

Evidence Review Results

Author, date	Population and Intervention	Results	Level of Evidence/ Quality Rating
Khoddam et al., (2022)[4]	Adults with CHD (n=68) 3 IG and 1 CG Implemented and assessed on night 3 of hospitalization	All IG had significantly lower VAS sleep disturbance scores compared to the CG with Group 2 having the highest MD of 77.24 mm (p=0.001). All IG had improved sleep quality as well compared to the CG with Group 1 having the highest MD of 39.79 mm (p=0.001).	Level II, Quality B
Demoule et al., (2017)[1]	Adult in the ICU (n=64) 1 IG and 1 CG Implemented and assess from admission until ICU discharge	The proportion of REM sleep in the IG was 21 (7-28) % and 11 (3-23) % in the CG (p=0.09). Duration of REM sleep was 74min in the IG compared to 31min in the CG (p=0.039). The VAS was comparable among both groups (70[50-70] in the IG and 60[25-80] in the CG; p=0.63).	Level II, Quality B
Le Guen et al., (2014)[5]	Major surgery post-op adults (n=46) 1 IG and 1 CG Implemented and assessed first night post-op in PACU	Those in the IG had a higher Spiegel score (20) compared to the CG (15), p=0.006. The use of the sleep devices also reduced the need for a nap (50%) compared to the CG (95%), 95% CI, p<0.001.	Level II, Quality B
Leong et al., (2021)[6]	Major abdominal surgery post-op adults (n=100) 1 IG and 1 CG Implemented and assessed on nights 1-3 post-op	The median (IQR [range]) Richards-Campbell Sleep scores were 64 (38-74 [0-100]) for the CG and 60 (44-82 [18-100]) for the IG.	Level II, Quality B
Obanor et al., (2021)[7]	Breast free flap surgery post-op adult females (n=90) 1 IG and 1 CG Implemented and assessed during first night post-op in ICU	The average Richards-Campbell Sleep score was 47.3 (95% CI, 40.8-53.8) for the CG and 64.5 (95% CI, 58.3-70.7), p<0.001 for the IG.	Level II, Quality B

Note. n=Sample. VAS=Visual Analog Scale. MD=mean difference. IQR=interquartile range. CI=Confidence Interval. IG=Intervention group. CG=Control group.

Findings

- Three studies found that the use of eye masks and earplugs did improve the sleep quality of patients during their acute hospital stay in comparison to standard sleep promotion care [4,5,7]
- Two studies found that the use of the sleep devices did not improve hospitalized patients' quality of sleep [1,6]
- All five studies demonstrated that sleep quality was not reduced through the use of the sleep devices compared to the sleep gained with standard sleep promotion care

Conclusions

- Eye masks and earplugs use by patients may be an effective method to improving sleep quality during an acute hospital stay.
- Weaknesses of reviewed studies include few objective methods for collecting data, moderate study adherence, and inconsistent intervention implementation and data collection
- Future research should concentrate on focused outcomes, objective data collection and larger sample sizes.

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References

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