SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

The objective of this paper is to present a summary of how sleep in patients is affected by noise and light in hospitals.

DESIGN IMPLICATIONS

The paper does not indicate any specific implications for design. However, the findings show that sound levels in ICUs are higher than the recommended standard by the US Environmental Protection Agency and that light levels in the ICU affect patient sleep.

Sleep disorder in cardiac care units: A special look at noise and light effects

Sheikhi, M. A., Ebadi, A., & Rahmani, H. 2015 | *Journal of Bioassays*. Volume 4, Issue 01, Pages 3680-3685

Key Concepts/Context

Patients in hospitals sometimes experience disturbed sleep because of environmental factors. The lack of adequate sleep has many adverse effects, and these effects are particularly critical in the case of patients in intensive care units (ICUs). In this paper the authors present a summary of the factors that cause sleep deprivation in ICUs and elaborate on the effects of light and noise on sleep.

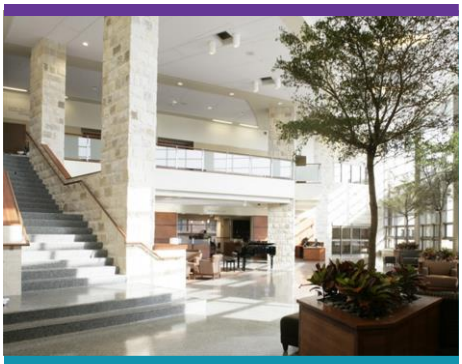
Methods

This is a literature review article in which the authors present the impact of noise and light on sleep deprivation in hospitals. No systematic method was used for the literature reviewed.

Findings

The following were the findings of the study:

- Environmental factors that contribute to sleep deprivation in hospitals include light, noise, activities pertaining to patient care like equipment use, assessments, nurse activities, and diagnostic tests.
- Noise:
    - The U.S. Environmental Protection Agency has recommended that sound levels for hospitals should not exceed 35 decibels. However, sound levels in hospitals are 15-40 decibels higher than that.
    - Noises affect the autonomic nervous system and the endocrine system, ultimately affecting the body's homeostasis. Sudden increases in noise levels can disrupt the body's metabolic function and aggravate chronic diseases like atherosclerosis and ischemic heart disease. Sleep modulates the body's cardiovascular system;



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disruption in sleep can potentially lead to the development of heart disease.

- Light:
    - Light suppresses the secretion of melatonin, consequently disrupting diurnal sleep rhythm and subsequently, sleep. In cardiac care units, light of different intensities is required day and night by the care providers; this prevents patients from getting adequate sleep and slows the process of recovery.

Limitations

The authors do not mention any limitation to their study.

This paper had the following limitations:

- It did not outline a clear objective – its title mentions sleep disorder in cardiac care units. The article refers to intensive care units throughout; cardiac care units are only mentioned once in connection with use of light.
- No systematic method was used for the literature reviewed.

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AIA Academy of Architecture for Health of the American Institute of Architects

ASHE American Society for Healthcare Engineering, A personal membership group of the American Hospital Association

AAHF Academy of Architecture for Health Foundation

FGI

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NIHD Nursing Institute for Healthcare Design – Leadership · Education · Advocacy

Research Design Connections