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Impact of Nightly Earplugs on Medical/Surgical Patients' Perceptions of Noise Level and Quality of Sleep

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Background

Sleep has been documented to be therapeutic for health, healing and recovery. External environmental factors such as light and noise play a major factor in relation to the quality and quantity of patients' sleep. At West Kendall Baptist Hospital, our Medical-Surgical/Telemetry floor (3 South) continues to tackle noise level and patient disruptions during night time. It has been documented that patient satisfaction goes up when the patients' ability to sleep improved as a direct consequence of lowered noise.

Purpose

The purpose of the study is to assess the impact of nightly earplugs on patients' perception of quality of sleep and noise level at night on a Medical/Surgical unit. The specific aim of the study is to compare pre and post implementations of nightly earplugs in determining patients' perception of quality of sleep and noise level in Medical/Surgical unit. The secondary aim of this study is to assess patients' perception of quality of sleep and noise level at night on a Medical/Surgical unit.

Methods

This is a quasi-experimental study using a pre-post researcher developed survey on perceptions of quality of sleep and noise level at night. Potential participants were identified through a screening process, approached about the study and then consented if they agreed to participate. The pre-survey was administered, earplugs provided to use that night, and the following day a post survey completed. Investigators were able to recruit a total of 50 patients but 4 of these patients dropped from the study with some of them voicing their discomfort with the use of the earplugs. This resulted in an acceptable attrition rate of 8%.

Table 1. Descriptive comparison of sleep quality and restfulness pre and post use of earplugs at night (n=46)

Questions	Pre-earplugs (n=50)	Post-earplugs (n=46)
Did you sleep well last night?		
Yes	28(56%)	42(91%)
No	22(44%)	4(9%)
Did you have problems falling asleep last night?		
Yes	23(46%)	9(20%)
No	27(54%)	37(80%)
Did your sleep get interrupted by noise last night?		
Yes	34(68%)	4(9%)
No	16(32%)	42(91%)
Do you feel rested?		
Yes	26(52%)	41(89%)
No	24(48%)	5(11%)

Table 2. Participants' paired pre and post perception comparison of noise level pre and post use of earplugs at night

	Pre-earplugs (n=50)	Post-earplugs (n=46)
Noise level during the night		
1(lowest)	9 (18%)	35 (76%)
2	20 (40%)	3 (7%)
3	13 (26%)	2 (4%)
4	6 (12%)	5 (11%)
5(highest)	2 (4%)	1 (2%)

Table 3. Post only earplugs satisfaction of use (n=46)

Questions	Mean±SD
How satisfied are you with the use of earplugs?	4.26±.905
How likely are you to use the earplugs at night if admitted again in the hospital?	3.89±1.45
How likely would you recommend the use of earplugs to friends and family members who are admitted to the hospital?	4.20±1.00

Results

- There was a clear increase in sleep quality post use of earplugs in all questions ranging from 80 to 90% reporting positive sleep quality and restfulness with earplugs compared to without earplugs which ranged from 32-54% with positive perceptions (Table 1).
- Furthermore, the one sample paired t-test showed that there was a statistically significant difference in participants' perception of noise level pre-earplugs (2.50+1.11) compared to post-earplugs (1.57+1.13) ($p<.001$) (Table 2).
- Moreover, participants have been highly satisfied with the earplugs use (4.26+.905) as shown in Table 3. In addition, the likelihood of the participants to use the earplugs if admitted again in the hospital (3.89+1.45) and to recommend earplugs use to friends and family (4.20+1.00) have shown a significant positive response.

Implications for Practice

Medical/Surgical units are capable of increasing patient satisfaction simply by improving patients' quality of sleep and decreasing noise level at bedtime which can easily be done through simple steps such as providing patients with foam ear plugs to filter the noise. Earplugs use can have a positive impact in the overall hospital's patient satisfaction score and patient recovery. Furthermore, it is an easy intervention to implement in any size hospital.

References

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