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Quality and Quantity of Patient Sleep in the Hospital: Perceptions and Measures

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Introduction

Inadequate sleep may result in physical and cognitive dysfunction. During hospitalization, interruptions from excessive noise, lights, and interruptions contribute to poor quality sleep. Patient and nurse reports of perception of sleep quality differ, with few studies comparing perception to measured quality and quantity of sleep. This non-experimental study compared patient and nurse perception, quality, and quantity of hospitalized medical patient's sleep.

Research Questions

- What is the perceived sleep quality of adult inpatients on a medical unit?
- What do nurses perceive as the quality of sleep of adult inpatients on a medical unit?
- What is the difference between nurse and patient perception of quality of sleep?
- What is the relationship between patient perception of sleep (RCSQ overall) and sleep efficiency (quantity) as measured by wrist actigraphy with a Fitbit®?
- What is the relationship between patient perception of sleep quality (RCSQ item 5) and sleep quality as measured by wrist actigraphy with a Fitbit®?

Methodology

Perception of the patient subject's sleep was assessed by subject nurses and subject patients through the Richards-Campbell Sleep Questionnaire (RCSQ). Actigraphy through use of a Fitbit® measured quality and quantity of sleep. Hospitalized medical patients with a length of stay greater than 1 day and night were randomly selected.

Analysis/Results

		Patient Subject	Nurse Subject
1. My sleep last night was:	n=91	91	93
0 = Light Sleep	Mean	47.52	55.52
100 = Deep Sleep	Standard Error Mean	2.90	2.68
2. Last night, the first time I got to sleep, I:	n=91	91	91
0 = Just Never Could Fall Asleep	Mean	61.02	60.47
100 = Almost Immediately	Standard Error Mean	2.98	2.46
3. Last night I was:	n=91	91	93
0 = Awake All Night Long	Mean	57.35	59.24
100 = Awake Very Little	Standard Error Mean	2.77	2.88
4. Last night, when I woke up or was awakened, I:	n=91	91	93
0 = Couldn't Get Back to Sleep	Mean	54.84	60.89
100 = Got Back to Sleep Immediately	Standard Error Mean	3.07	2.64
5. I would describe my sleep last night as:	n=91	91	93
0 = A Bad Night's Sleep	Mean	55.30	57.74
100 = A Good Night's Sleep	Standard Error Mean	3.14	2.76
6. I would describe the noise level last night as:	n=91	91	93
0 = Very Noisy	Mean	77.65	74.04
100 = Very Quiet	Standard Error Mean	2.51	1.80
Overall RCSQ Score	n=91	91	91
(first 5 questions)	Mean	276.04	293.85
0 - 500	Standard Error Mean	11.78	12.41

T-Test – equal pair, 95% confidence interval, * significance at .05 (2-tailed)

1. My sleep last night was:	n=90	p=.018*
2. Last night, the first time I got to sleep, I:	n=90	p=.976
3. Last night I was:	n=90	p=.437
4. Last night, when I woke up or was awakened, I:	n=90	p=.074
5. I would describe my sleep last night as:	n=90	p=.338
6. I would describe the noise level last night as:	n=90	p=.317
Overall RCSQ Score	n=90	p=.095
(first 5 questions)		

Pearson Correlation * significance at .05 (2-tailed)

What is the relationship between patient perception of sleep (RCSQ overall) and sleep efficiency (quantity) as measured by wrist actigraphy with a Fitbit®?	n=90	p=.308
What is the relationship between patient perception of sleep quality (RCSQ item 5) and sleep quality as measured by wrist actigraphy with a Fitbit®?	n=90	p=.073
What is the relationship between patient perception of number of awakenings (RCSQ item 3) and times awake as measured by wrist actigraphy with a Fitbit®?	n=90	p=.045*

Perceived quality and quantity of sleep was statistically similar between patients and nurses ($p=.095$). There was also no difference between patients perceived quality and quantity of sleep and wrist actigraphy ($p=.308$). Patients perceived they were awake more frequently than as measured by wrist actigraphy ($p=.045$).

Conclusions/Implications

Subject patients perceived quality of sleep as 276 on a 0-500 RCSQ scale compared to subject nurses perception of subject patients to be 294. Paired T-Tests indicated no statistical difference ($p=.095$). No statistical relationship was found between the subject patient perception of sleep (RCSQ overall) and sleep efficiency (quantity) ($p=.308$). No statistical relationship was found between the subject patient perception of sleep quality (RCSQ item 5) and sleep quality as measured by wrist actigraphy with a Fitbit® ($p=.073$). There was a statistical correlation found between patient perception of number of awakenings (RCSQ item 3) and times awake as measured by wrist actigraphy with a Fitbit® ($p=.045$).

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