

# Sleepy Nurses Make More Slip-Ups

## Background

Sleeping too little can inhibit your productivity and ability to remember information and lead to serious health consequences and jeopardize your safety and the safety of individuals around you.

Sleep deprivation can negatively affect a person's alertness, physical and cognitive performance.

## Aim

### Purpose:

Study will replicate clinical scenarios developed by the Montgomery College Nursing School in Maryland, to see effects of sleep deprivation.

### Research Question:

Will sleep deprivation have a significant effect on nurse's error rates in a simulated clinical environment?

## Methods

### Subjects:

- 34 Registered Nurses, 17 Males and 17 Females.
- Age range 28 to 33.
- From John Hopkins Hospital Baltimore, Maryland.
- No current symptoms of medical, neurological, psychiatric or sleeping disorder conditions.
- Average caffeine levels 10 to 12 milligrams from urinalysis.
- Average heart rate 70 - 80 beats per minutes from electrocardiogram.

### Experiment:

- Experimental Group: 17 Sleep deprived nurses. (SD)
- Control Group: 17 Non-sleep deprived nurses. (NSD)
- 48 hour wake period.
- 3 clinical simulation tests. 1<sup>st</sup>, 24<sup>th</sup>, 48<sup>th</sup> hour.
- Groups will test separately to ensure a full SD and NSD group then take Stanford Sleepiness Scale (SSS) test.

### Analysis

- Averages of the total number of treatment and medication errors and the average SSS rating from the 3 simulations of each group.
- Medication error- any error in the delivery of medical care, whether harmful or trivial.
- Treatment error- serious medical error related to performance of a procedure.
- Compare average of treatment and medication errors with SSS rating average from each group.
- Data for error rates will be recorded on Table A.
- Data for average SSS rates will be recorded on Table B.

Table A

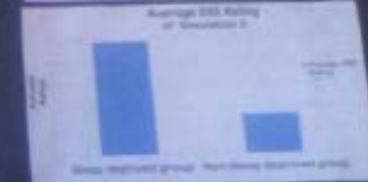
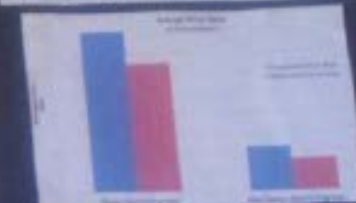
Simulation Test #	Medication Errors	Treatment Errors
1 <sup>st</sup> Simulation		
2 <sup>nd</sup> Simulation		
3 <sup>rd</sup> Simulation		
Average of errors		

Table B

Subject	Sleep Deprived (SD)	Non-Sleep Deprived (NSD)
Subject 1		
Subject 2		
Subject 3		
Subject 4		
Subject 5		
Subject 6		
Subject 7		
Subject 8		
Subject 9		
Subject 10		
Subject 11		
Subject 12		
Subject 13		
Subject 14		
Subject 15		
Subject 16		
Subject 17		
Average		

## Results

Predicted outcome for the study will be the treatment and medication errors in the sleep deprived group will increase compared to control group - Bar Graphs A and B show an example of the results.



## Conclusion

Previous studies have demonstrated that all results came to a similar conclusion, that sleep deprivation does have an effect on specific functions.

If all is done correctly and the proper procedures will be taken, the results will defend that sleep deprived registered nurses will have increased error rates.