

Assessment of Quality of Sleep in Nurses: A Cross Sectional Study

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Abstract

Shift-work is common in healthcare professionals and has been associated with sleep problems. Decrease in the sleep quality results in increase in stress level which negatively impacts the health and quality of life. Objective: To assess the of quality of sleep among nurses

Method: Design A Cross-sectional comparative study was conducted on a group of 100 nurses who work during morning, afternoon, night shifts in different department of Saveetha Medical college hospital from January 2019 to March 2019. Healthy nurses aged 23-35 were included in the study after obtaining Ethical approval. The Pittsburgh Sleep Quality Index (PSQI) was used to measure of sleep quality.

Results: This study revealed that there was a significant sleep disturbances in 16% and the sleep duration was less than 6 hrs in 12%, also the Subjective sleep quality was bad in 11%, the Sleep latency was more than 31 min in 11% and the habitual sleep efficiency was less than 84% in 21%. The PSQI scores which were poor in 39% of the studied population.

Conclusion: In our study we found that there was significant sleep disturbances among the nurses which would contribute to stress and stress related disorders.

Keywords: Sleep quality, Nurses, Pittsburgh Sleep Quality Index (PSQI), Thandalam.

Introduction

Sleep is a naturally recurring state characterized by reduced or absent consciousness, relatively suspended sensory activity and inactivity of nearly all voluntary muscles. Sleep is also a heightened anabolic state which helps in the growth of the immune, nervous, skeletal and muscular systems. Sleep also helps in the consolidation of memory.

Sleep wake cycle is controlled by circadian clock and the circadian rhythm determines the timing of structured and restorative sleep episodes. Human sleep needs vary by age and among individuals and sleep is considered to be adequate when there is no daytime sleepiness or dysfunction.

Nursing is the main force at hospitals. Nurses compromise their own health for promoting the health of others by working long 12 hours shift that are typically extended because nursing duties do not have a clock in or out time. In most of the hospital workers the major stress contributors are over work, under-staffing, tight schedules, paper work, demanding patients and patient deaths. Family commitments (household chores, childcare etc. in addition to the work strain can cause difficulty falling asleep, frequent awakening, premature

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awakening, unhealthy behavior, such as taking sleep medications and mood disturbance.

Shift-work is very common in healthcare and has been associated with sleep problems and decrease in the sleep quality results in further increase in stress level. Everyone experiences stress and chronic stress had become a mainstay in modern life and people who are stressed end up eating more, indulge in smoking and drinking. They also tend to sleep and exercise less. These habits further worsen the problem. Thus shift work and the poor sleep quality causes negative impact on health and quality of life. This study is aimed at assessing of quality of sleep and its association with stress level among nurses.

Methodology

Study design A Cross-sectional comparative study was conducted on a group of 100 nurses who work during morning, afternoon, night shifts in different department of Saveetha Medical college hospital from January 2019 to March 2019. Healthy nurses aged 23-35 were included in the study after obtaining Ethical approval from the Institutional Ethics Board, Saveetha Medical college and Hospital. Prior written informed consent was obtained from all the participants. Nurses with systemic illness such as diabetes, hypertension, nurses who consumed

antidepressant drugs and participants with defect in adrenal cortex that rises cortisol level in blood were excluded from the study. The Pittsburgh Sleep Quality Index (PSQI) was used to measure of sleep quality.

The Pittsburgh Sleep Quality Index (PSQI) was developed by Buysse and colleagues to provide a standardized measure of sleep quality. The PSQI is based on eighteen self reported questions; measuring the components of: subjective sleep quality, sleep latency, habitual sleep efficiency, use of sleeping medication, sleep duration, sleep disturbances and daytime dysfunction. The score from each category is added to achieve a global score that ranges from 0 - 21 . A cutoff score of 5 or above is indicative of a sleep disturbance.

Statistical analysis: Then the data was entered in database Statistical Package for the Social Sciences (SPSS) software version 21. Statistical analysis of the data was done using Data analysis was done using Fisher's exact test and P value < 0.05 was considered as significant.

Results

The study was conducted on a group of 100 nurses who work in different department of Saveetha Medical college hospital using PSQI and the results are tabulated below.

Table 1: Distribution of Study Participants Based On Their Subjective Sleep Patterns (N=100)

Characteristics	Categories	Frequency (n=100)	Percent
Subjective sleep quality	Very good	39	39%
	Fairly good	50	50%
	Fairly bad	8	8%
	Very bad	3	3%
Sleep latency	< 15 mins	68	68%
	16- 30 mins	21	21%
	31- 60 mins	9	9%
	> 60 mins	2	2%
Sleep duration (hours)	>7	71	71%
	6-7	17	17%
	5-6	9	9%
	<5	3	3%
Habitual sleep efficiency (score)	>85%	79	79%
	75- 84%	20	20%
	65- 74%	1	1%

Table 1 shows that the Subjective sleep quality was bad in 11%, the Sleep latency was more than 31 min in 11%, sleep duration was less than 6 hrs in 12% and the habitual sleep efficiency was less than 84% in 21%.

Table 2: Sleep Quality (PSQI scores)

Sleep Quality	Number	Percent
Good	61	61%
Poor	39	39%
Total	100	100%

Table 2 shows the PSQI scores which were poor in 39% of the studied population.

Table 3: Association between subjective characteristics and quality of sleep

Characteristics	Categories	Quality of Sleep			Fisher's Exact Test	P value
		Good	Poor	Total		
Sleep Disturbances	No Disturbances	0	1	1	6.621	<0.05
	Mild	55	28	83		
	Moderate	6	9	15		
	Severe	0	1	1		
Hours of Sleep	> 7	53	18	71	19.78	<0.05
	6-7	6	11	17		
	5-6	2	7	9		
	<5	0	3	3		
	Total	61	39	100		

Table 3 shows that 16% had sleep disturbances and the sleep duration was less than 6 hrs in 12%

Discussion

The goal of this study was to assess sleep quality nurses who work in different department of Saveetha Medical college hospital. This study revealed that there was a significant sleep disturbances in 16% and the sleep duration was less than 6 hrs in 12%, also the Subjective sleep quality was bad in 11%, the Sleep latency was more than 31 min in 11% and the habitual sleep efficiency was less than 84% in 21%. The PSQI scores which were poor in 39% of the studied population.

Shift-work is common in healthcare professionals and has been associated with sleep problems. Decrease in the sleep quality results in increase in stress level which negatively impacts the health and quality of life. Studies by other researchers on sleep quality shows how shift work and stress affects health and quality of life. In 2006 Gangwisch and colleagues studied the effect that sleep duration had on the risk factors for diabetes. There was a noted increase in the risk for diabetes for the subjects who slept < 5 or > 9 hours per night.¹

In 2007 Stamatakis and Brown examined the correlation between sleep duration and obesity-related risk factors and found that the subjects that had short sleep duration had more risk factors for obesity.² Also in a study by Baker & Driver in 2007 it was found that sleep disturbances in nurses exposed them to physical, emotional, mental and social stress. Sleep changes in women affects the different phases of the menstrual cycle, Pregnancy, postpartum recovery and menopause.³

Furthermore, sleep difficulties are also closely associated with psychiatric disorders such as depression, alcoholism and bipolar disorder and up to 90% of adults with depression are found to have sleep difficulties. Lack of sleep contributes to reduced concentration, short-term memory, learning ability and behavioral self control. Additionally, researchers at the National Institute of Health have reported that decreased sleeping may lead to a decrease in total lifespan.⁴

In a study by Labyak et al in nurses, it was found that poor sleep quality tends to increase rates of cancer,

cardiovascular diseases, digestive diseases and irregular menstrual cycles.⁵ Poor sleep has also been positively associated with nurses' medical errors and with driving accidents which affect public safety.⁶ Consequently, medical errors by nurses are significantly associated with poor mental health.⁷

Chung et al in their study found that persistent day-night rotating shift work, smoking and baseline metabolic syndrome components associate with the progression toward metabolic syndrome for middle-aged female workers. Johnson AL and Brown K Studied the relationship between Sleep deprivation and psychomotor performance among night-shift nurses and found A significant ($p < .001$) relationship was found between psychomotor performance and hours of sleep.

Conclusion

Critical care nurses are trained to provide specialized nursing care, to make rapid decisions and to perform advanced assessments and motor skills. Night shift work can lead to sleep deprivation, which in turn can threaten the health and safety of both patients and nurses

The findings of the study can help the nurses to increase the awareness of how the nurses to increase the awareness of how they stressed. So this will them to plan healthy intervention to improve quality of life and practice simple strategies to cope with their stress

Limitations of the Study: The sample size is less so, Similar study can be repeated in other intensive care units and by increasing the size of the sample.

Source of Funding: Self

Conflict of Interest: Nil

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