

Conference Paper

Relationship of Sleep Quality and Perceived Fatigue Among Nurses at the Cibinong Regional Public Hospital, 2017

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Abstract

Fatigue is a critical issue for nurses that may lead to medical errors, degradation in performance, decreased mental acuity and social problems. Poor sleep quality is also a contributing factor in fatigue that nurses experience. Shift work and high workloads are two factors that caused poor sleep quality of nurses. The aim of the present study was to investigate the relationship between sleep quality and perceived fatigue among nurses at the Cibinong Regional Public Hospital, Bogor District. Cross-sectional study was conducted from January 1, 2017 to April 30, 2017 using a self-reported questionnaire of the Pittsburgh Sleep Quality Index (PSQI) and Subjective Self Rating Test from Industrial Fatigue Research Committee (IFRC) of nurses at Cibinong Regional Public Hospital with 179 nurses. The chi-square test was used to analyze the relationship between sleep quality and perceived fatigue. The results showed that 57 percent of nurses had poor sleep quality. Perceived fatigue measured by subjective self-rating test showed that the majority of nurses had low levels of perceived fatigue (47.5%). Only 8.9 percent of nurses had high levels of perceived fatigue. The chi-square test showed a significant relationship between sleep quality and level of perceived fatigue (p -value = 0.001). Analysis of Odd Ratio showed that nurses who had poor sleep quality had a risk about 2.9 times to experience fatigue, compared with nurses who had good sleep quality. It can be concluded that poor sleep quality has a greater risk of causing fatigue in the nurses. So, the effort of setting the time and shift work is very important to improve the sleep quality of nurses and reduce the risk of work fatigue.

Keywords: sleep quality, perceived fatigue, nurse, hospital

1. Introduction

Fatigue is a critical issue for nurses that may lead to medical errors, degradation in performance, decreased mental acuity and social problems [9]. Fatigue affects all nurses,

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no matter where they work, 50–55 percent of nurses always or almost always experience fatigue during work and 80 percent experience after work [1]. According to PPNI survey in 2006, 50.9 percent of nurses working in 4 provinces in Indonesia experience stress, dizzy, tired and unable to rest because the work load too high [4].

Fatigue is caused by many factors. One of the factors that can affect fatigue is sleep quality due to shift work, thus affecting circadian [16]. Workers who underwent shift work over the last 6 months significantly have poor sleep quality [17]. Besides that, poor sleep quality significantly increases the risk of fatigue in the nurse [6].

RSUD Cibinong is one of the referral hospital located in Bogor District. In 2015, the number of patient visits in the outpatient and inpatient is increasing (Bed Occupancy Rate: 75–85%) and now has been applied Professional Practice Model of Nursing. It affects the mobility and workload, so nurses may difficult to rest and increase the risk of fatigue due to poor sleep quality.

2. Methods

This study conducted from January to April 2017. A cross-sectional survey method was used to assess the prevalence of fatigue and sleep quality among nurses at the Cibinong Regional Public Hospital. One hundred and seventy – nine subject from the hospital were selected. Data were collected using Pittsburgh Sleep Quality Index Questionnaire and Subjective Self Rating Test from Industrial Fatigue Research Committee. The data were processed by using a computer-assisted statistical program to calculate the frequency distribution of all variables. The bivariate analyze was conducted using chi square test to assess the relationship of sleep quality and perceived fatigue (confidence level 95%).

3. Results

As shown in Table 1, the majority of subjects are female. About 41.9 percent subjects, among 17–25 years old. More than 50 percent subjects are non-government employee. Level of education subjects is Diploma III. More than 50 percent subjects are married.

Table 2 shows that the fatigue level of the subjects is in the low to moderate fatigue level. Only a small percentage of subject's experience high levels of fatigue.

As shown in Table 3, more than 50 percent subjects have poor sleep quality. Only a small percentage of subjects have good sleep quality.

TABLE 1: Frequency distribution of subject characteristics (N = 179).

Characteristics	Frequency	Percentage (%)
Sex		
- Male	64	35.8
- Female	115	64.2
Age		
- 17-25 years old	75	41.9
- 25-35 years old	70	39.1
- 36-45 years old	21	11.7
- 46-55 years old	12	6.7
- > 55 years old	1	0.6
Employment Status		
- Government employee	47	26.3
- Non-government Employee	132	73.7
Level of Education		
- School of Nursing Education	5	2.8
- Diploma III	131	73.2
- Diploma IV	2	1.1
- Bachelor	41	22.9
Marital Status		
- Single	77	43
- Married	98	54.7
- Widow/doubts	4	2.2

TABLE 2: Frequency distribution of perceived fatigue (N = 179).

Fatigue	Frequency	Percentage (%)
Low	85	47.5
Moderate	78	43.6
High	16	8.9

TABLE 3: Frequency distribution of sleep quality (N = 179).

Sleep Quality	Frequency	Percentage (%)
Good	77	43.0
Poor	102	57.0

TABLE 4: Relationship of sleep quality and perceived fatigue (N = 179).

Sleep Quality	Perceived Fatigue				Total		OR (95%CI)	P-value*
	Not Fatigue		Fatigue		N	%		
	n	%	N	%				
- Good	48	62.3	29	37.7	77	100	2.908	0.001
- Poor	37	36.3	65	63.7	102	100	(1.576–5.366)	

Note: *based on chi-square test.

The relationship between sleep quality and fatigue was found that there were 29 (37.7%) subjects with good sleep quality, experiencing fatigue. While among the subjects with poor sleep quality, there were 65 (63.7%) of subjects who experienced fatigue. Chi square test results obtained p -value = 0.001, it can be concluded there is a significant relationship between sleep quality and fatigue. From the analysis known that sleep quality variable is a risk factor (OR = 2.908 with 95% CI: 1.576–5.366), meaning that subjects with poor sleep quality have 2.908 times higher risk to experience fatigue compared with respondents who have good sleep quality.

4. Discussion

The result of this study showed more than 50 percent subjects experienced low to moderate fatigue. This study also showed a significant relationship between sleep quality and perceived fatigue (p -value < 0.05). Sleep quality is a fatigue risk factor marked by Odd Ratio = 2.908 with 95 percent CI: 1.576–5.366. Subjects with poor sleep quality have 2.908 times higher risk to experience fatigue compared with subjects who have good sleep quality.

Fatigue occurs in all nurses no matter where they work, 50–55 percent of nurses always or almost experience fatigue during work and 80 percent experience after work [1]. Nurse is a profession that provides constant and continuous service (24 hours) for the patient every day [5], besides that so many tasks can be a stressor for nurses, sometimes nurses also must deal with the emotional attitudes of the patient [13]. In addition, nurses also do not have a fixed break, so the body is required to always adaptation and can affect the quality of sleep, the process of recovery is not optimal. Another factor is the allegation that with the policy of the BPJS program issued by the central government to all Indonesian citizens, thus increasing the number of patients seeking treatment or requiring hospitalization, which must be served by a fixed number of nurses. Fatigue is a factor that can affect the ability of nurses in

providing services to patients. The symptoms of fatigue are anxiety, decreased short-term memory, decreased reaction time, decreased work efficiency, to negligence [8]. Fatigue in nurses can trigger or improve medical errors, decreased work performance, decreased mental capacity and social problems [9].

Trisnawati states there is a relationship between sleep quality with fatigue [15]. Majority subjects have poor sleep quality (57.0%). The quality of a person's sleep depends not only on the number or length of sleep a person has, but also how to fulfill the person's sleeping needs [10]. The nurse's sleeping time may be insufficient, because of working in long hours and work rotation, while sleeping for 7–8 hours, especially at night, has a positive relationship with reduced risk of obesity, diabetes, high blood pressure, myocardial infarction and reduce the risk of accidents and errors. In addition, work patterns nurse shift work can interfere circadian rhythm, so it has possible interfered the cycle of sleep rhythm and wake rhythm [7].

Poor sleep quality not only cause health problems to the nurse itself, but also the patient's safety, such as in taking action and giving medication (medication error) [3]. Muscle fatigue can be restored with rest while the brain can only be restored by sleep. The most profitable sleep is without interruption in a single time period. When a person experiences less sleep a day, then there will be accumulated fatigue levels due to no improvement phase, thus increasing the risk of fatigue [14]. A day sleepless at night, has the same effect on someone who drank too much alcohol [12].

Poor sleep quality can increase risk 2,098 times higher to experience fatigue.. It is caused by insufficient sleep, thus disrupting the recovery process [11]. Data showed that 67.7 percent of nurses admitted experiencing sleep deprivation [2]. Someone who works at night and shift rotation rarely reaches the optimal amount of sleep. The fact is that many studies show that night shift workers experience sleep deprivation, 1 to 4 hours compared to normal people, when they work at night [11]. Night shift is the most shift causing the nurse to experience sleep disturbance, equal to 75,8 percent, due to disruption of circadian rhythm of the body work shift night [1].

5. Conclusion

Nurses at Cibinong Regional Public mostly experienced low to moderate fatigue, only a small percentage experienced high levels of fatigue. In addition, majority nurses have poor sleep quality (57.0%). Bivariate analysis showed that there was a significant correlation between sleep quality and perceived fatigue (p -value = 0.001). Nurses with

poor sleep quality had 2,908 times risk higher to experience fatigue compared with nurse who have good sleep quality.

Cibinong Regional Public Hospitals need to apply the fatigue management program. In addition, need to consider and review the placement of nursing personnel, based on the competence and needs of patients in the room. Head of the room can supervise the implementation of shift schedules. For nurses themselves, it is expected to apply good time management while working and at home. The results of study can be used as a basic data for the next researcher, related to further research on factors that influence the quality of sleep in nurses

Conflict of Interest

The author declares that this study has no competing interest.

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