

RELATIONS SLEEP QUALITY WITH THE POWER OF CONCENTRATION STUDY ON MEDICAL STUDENTS OF 2014 FACULTY OF MEDICINE AND HEALTH UNIVERSITY OF MUHAMMADIYAH JAKARTA

Grisel Nandecya¹, Slamet Sudi Santoso²

^{1,2}University of Muhammadiyah Jakarta, ¹ Hassanudin University, ²University of Indonesia
^{1,2}K.H. Ahmad Dahlan Street, Cirendeu Ciputat, South Tangerang, Banten Province, Indonesia 15419

santohope@gmail.com

Abstract

Sleep is a basic need that is needed by everyone. Every adult requires needs rest and sleep about 6-8 hours for the body to function normally. Lack of sleep needs will decrease the ability to concentrate, make decisions, and participate in daily activities. The purpose of this research is knowing the relationship between sleep quality by studying the concentration of the Force 2014 Student Education Program of Medicine, University of Muhammadiyah Jakarta. This research using a cross-sectional study with a questionnaire and carry out a test sheet by students PSPD alpha army forces in 2014 at the Faculty of Medicine, University of Muhammadiyah Jakarta with the sampling method used is Slovin. The relationship quality of sleep in descriptive illustrated in Table 4:3 : from 53% of respondents who have a good quality sleep, there are about 19,7% the power of concentration is less good. Conversely though 36% of respondents sleep quality is not good, but there are about 22,7% power concentration is still quite good. No association was demonstrated that the absolute quality of sleep related to the concentration of respondents.

Keywords: *sleep quality, concentration power*

INTRODUCTION

Sleeping is a basic need which is needed by every person. Everyone needs both sleep and time to have a rest. Therefore, the function of the body could normally perform. During the condition both sleep and rest, the body will regenerate and heal to getting back the stamina into peak performance.¹

The data from The National Sleep Foundation, United State of America, told that adult person should have a sleep approximately 30% from 24 hours, or 6-8 hours are used for sleep.² There are lot of bad impact caused by lack of sleep quality. Some traffic accidents which caused of dead are proven happened due to driver's condition who were sleepy. This was shown that every occupation which highly concentration need should supported by peak body's condition, that determined by sleep quality. Beside the physically activity, other activities which need peak body's condition is lecturing process or study. It is a common thing that the number of credit hours which applied at this moment contribute to study load for student. In addition, the

¹ Guyton, Arthur C. Hall, John E. *Buku Ajar Fisiologi Kedokteran*. Edisi 11. Alih Bahasa: Setiawan I, Santoso A, Jakarta. Penerbit Buku Kedokteran EGC. 2007.

² Purnama, Pande Putu. *Hubungan Tingkatan Kecemasan dan Gangguan Pola Tidur pada Pasien Pertama Kali Dirawat Inap di Ruang Perawatan Umum Rumah Sakit PUSAT Angkatan Darat Gatot Subroto Jakarta*. Jakarta.2009.

over load in study, sometime, influences to the lack of both sleep duration and sleep quality of student. It affects to the high number of student who had either tiredness or sleepy during the lecture process.

The lack of sleep will cause to the decreasing of ability to concentrate, make a decision, and participate during daily routines. Moreover, some students have some obstacles during the study like sleepy and tiredness caused by lack of sleep, and led to reduction of concentration, memorizing, and emotional health. With highly concentration, will effect to optimal result, like get remarkable result in study.

At Faculty of Medicine and Health University of Muhammadiyah Jakarta which had already used Problem Based Learning method, the student are facing with some real problem and issue. Student are required to have good knowledge and ability in critical thinking, as well as skill in solving the problems. Therefore, to have those ability, student should have strong determination in study from various references and explore information actively.

The high intensity of lecturing process and high load of study need perfect body condition. However, sometime, during the study found that student was sleepy and passive in tutorial, arriving late, and miss the class at the morning class caused by sleepy. Therefore, they were reproved by lecturer. This complaint can influence to the lack of student concentration, and will effect to student achievement, which will decrease as the further effect.

The symptoms like tiredness, sleepy, and lack of concentration during the lecturing process on student were caused by the healing process of the body through the lack of sleep. The cause is differ, either the total hours of sleep or the lack of quality in sleep.

The background of problem of this research was there is relationship between sleep quality with concentration in study on Medical student, class of 2014 Study Program of Medicine, Faculty of Medicine and Health, University of Muhammadiyah Jakarta. The aim of this research is knowing the description of sleep quality and power of concentration of student, and the relationship of sleep quality to student's concentration in study as well.

THEORY

This research is focused to factors which related with sleep quality and concentration in study on Medical Student, class of 2014 Faculty of Medicine and Health, University of Muhammadiyah Jakarta. In addition, the research used descriptive analysis with cross sectional method. Furthermore, the independent variable was sleep quality and power of concentration as dependent variable. Eventually, the good sleep quality will influences power of concentration to the student.^{3,4,5,6}

RESEARCH METHODOLOGY

Research was conducted at Study Program of Medicine, Faculty of Medicine and Health, University of Muhammadiyah Jakarta during September until November 2015. The framework of this research was using analytic descriptive with cross sectional method. In addition, the research population was student of Medicine at Faculty of Medicine and Health-UMJ, class of 2014 with total number was 99 students.

³ DeLaune, SC., Ladner, PK. *Fundamentals of nursing: Standards and practice* (2nd ed.). Clifton Park, NY: Delmar. 2002.

⁴ Potter, Patricia A, and Perry, Anne. G. *Buku Ajar Fundamental Keperawatan: Konsep, Proses dan Praktik*. Ed. 4. Jakarta:EGC. 2006.

⁵ Kozier, B. et al. (2004). *Fundamental of Nursing: Concept Theory and Practices (7thod)*. Upper sad les piver. Pearson Education, Inc

⁵ Kozier, B. et al. (2004). *Fundamental of Nursing: Concept Theory and Practices (7thod)*. Upper sad les piver. Pearson Education, Inc.

⁶ Sunaryo. *Psikologi untuk keperawatan*. Jakarta: Penerbit Buku Kedokteran EGC. 2002.

Moreover, the number of sample was 89 students which calculated by Slovin formula with random sampling method.⁷

The primary data about the quality of sleep was collected by filled questionnaire from students as respondent. Besides, respondent was also tested of their power of concentration using Army Alpha Test. Moreover, the tool which is used to compile and tested the data of quality of sleep was questionnaire, led by Pittsburgh Sleep Quality Index. Whereas, the variable of concentration power of study was collected by Army Alpha Test.

The questionnaire of PSQI created by D.J. Bussye Professor of Psychiatry and Clinical (1989) and translated into Bahasa. Researcher has got permission from D.J. Buysse through the email for using PSQI and translated to Bahasa as well.⁸

RESULT AND DISCUSSION

This research has a limitation due to the number of sample was only from one class, which is 2014 and held with one tested only. Therefore, the result would be more accurate if using sample from another classes. Moreover, other factors as the proponents such as; student background, the environment where they are living, age, gender, dietary-habit, and others which used as the support data was not explored. Furthermore, sample was concluded have similar background, therefore, it would lead to the refraction in this research. Besides, the respondents who did not fully understand to using Army Alpha Test was still exist.

According to the data, here is the result of sleep quality to power of concentration, medical students class of 2014, Faculty of Medicine and Health, University of Muhammadiyah Jakarta.

Table 1.
 Description of sleep quality to power of concentration
 Medical Students Class of 2014 Faculty of Medicine and Health
 University of Muhammadiyah Jakarta

Variable	n	%
Sleep Quality		
- Good	53	59,6
- Less	36	40,4
Power of Concentration		
- Good	56	62,9
- Less	33	37,1

According to the analysis, shown that sleep quality was normally good, with the percentage was 59,6%, which means good. Whereas, only 40,4% was less, none which shown poor. The 40,4% was also shown that workload, lectures, and other factors which will lead to the lack of sleep quality. In addition, someone with either less or poor sleep quality will influence to their physique at noon and mentally as well, which can help to solving the problem which need high concentration.

As we know, the sleep quality of every each person will influenced by some variables. Pittsburgh Sleep Quality Index (PSQI) which used in measuring the sleep quality of respondents, therefore all other variable which influence sleep quality can well-measured. Those variables are sleep subjectivity, sleep latency, sleep duration, sleep efficiency, sleep-disruption, utilization of sleeping pills, and disfunction at noon.

⁷ Prasetyo, Bambang, Lina Miftahul Jannah, Metode Penelitian Kuantitatif: Teori dan Aplikasi, Jakarta: PT Raja Grafindo Persada, 2008.

⁸ Daniel J. Buysse, Charles F. Reynolds III, Timothy H. Monk, Susan R. Berman, David J. Kupfer. The Pittsburgh Sleep Quality Index: A New Instrument for Psychiatric Practice and Research. *Psychiatry Research*. 1989 May; 28(2), 193-213.

Subjectively, the analysis of table 1 shown that the sleep quality of respondent was good, with 59,6% from 89 students. It means, generally, respondents have good enough time for sleep duration, approximately 7-8 hours a day.

This result matches with theory from The National Sleep Foundation, United State of America, that adult people should sleep approximately 30% of 24 hours, or 6-8 hours a day, therefore, the energy is well saved into a body and give some hours for the brains to have a rest and regenerate.²

Moreover, according to Kozier et al, the ideal of the total of sleep hour for every person is different. Age is one factor which determine this. The number of sleep hour which needed for every person determine to phase of human growth, from early born until grown.⁵

On the other hand, the result also shown the less of sleep quality with percentage was 40,4% from 89 students. It means there were some respondents who did not agree that sleep quality is important, instead of ignore it. Moreover, less sleep quality of student was often appear during the lecture process. It matches to the theory of (Hidayat, 2006) who told that sleep with good quality will influence to the whole condition of human body, they do not tired, pale and anxiety as well. Physically, a person who less in sleep would shown with puffy eyelid, conjunctiva, yawn, and sleepy.⁹

This problem are getting worse with some factors which effect to sleep quality, such as ; psychology factor, physiology, environment, lighting, noise, temperatures, physically condition, and life style. Therefore, either rest of sleep with enough time was important to body stability and avoid some cause which appear due to less of sleep duration. Besides, the less of sleep quality will influence to the ability of someone to solve problems which need high concentration, include of understanding the topic of lectures.

From the table 1, appeared that approximately 37,1% of respondent with lack of concentration due to less sleep quality, for further will impact to the lack of ability in receiving the information at noon, include of topic of lectures, and lead to achievement of student which will decrease. This result was similar with theory from Guyton, 2007, who told that concentration is the ability of someone who can give attention in long duration. Whereas, student who told that they are concerned, if they focus to what they are been learning, therefore they can't easily change their focus to other subject.¹

Power of concentration was influenced by physique quality which produced by favorable sleep quality. Otherwise, lack of concentration due to the less of sleep quality, will impact to ability of respondent in responding the information at noon, include of topic of lectures, and lead to achievement of student which will decrease. It is similar with theory from Slameto, 2006¹⁰, that young adult who have obstacle in lecture process is caused by tired and sleepy condition due to less of sleep. Furthermore, eventhought the power of concentration has tight relationship with sleep quality, there are also some other factor which did not appear. Hendra Surya said that concentration is also influenced by internal factor, such as physically condition during the study, age, modality of study, psychology, as well as external factors as if environment and lifestyle.¹¹

The relationship between sleep quality as independent variable with power of concentration as dependent appears on table 2 below :

⁹ Hidayat, A.A. Pengantar kebutuhan dasar manusia aplikasi konsep dan proses keperawatan. Jakarta : Salemba Medika. 2006

¹⁰ Slameto. Belajar dan Faktor-Faktor yang Mempengaruhinya. Jakarta: PT. Rineka Cipta. 2006.

¹¹ Surya Hendra. Menjadi Manusia Pembelajar. Jakarta: Elex Media Komputindo. 2009.

Table 2.
 Relationship between Sleep Quality and Power of Concentration

Sleep Quality	Power of Concentration				Total		OR(95% CI)	p-value
	Good		Less		n	%		
	n	%	n	%	n	%		
Good	32	33,3	21	19,7	53	53,0	0,762 (0,314-1,846)	0,547
Less	24	22,7	12	13,3	36	36,0		

From table 2 shown that respondents with good sleep quality have high power of concentration as well. From 53 respondents who had good sleep quality, there were 21 respondents who has low power of concentration. On the other hand, from 36 respondents who had less sleep quality, there were 24 respondents who has high power of concentration. In addition, the result of *chi-square* test with p-value 0,547 ($p > \alpha$), therefore, H_0 was rejected. It means there was no relationship between sleep quality with power of concentration on Medical Student, class of 2014, Study Program of Medicine, Faculty of Medicine and Health, University of Muhammadiyah Jakarta. It is similar with the theory form Mellissa Cyintia William with the title "Relationship of Sleep Quality with Concentration on Student, class of 2009, Faculty of Medicine, University of Sumatra Utara" with the result was there is no significant relationship between sleep quality with power concentration with $p > 0,575$.¹²

Those information shown that the sleep quality generally has no relationship with the ability of concentration. In addition, this research proven, eventhought there were some student who shown sleepy condition at noon, however, it was not too dominant. Whereas, the dominant effect from lack of sleep quality was the lack of enthusiastic do soma activities at noon. On the other hand, related with concentration and receiving the information from lectures process, sometime, student have some strategies and ability in facing some pressure including to respond the tight of lectures schedule, therefore, they can successfully complete their chores and had enough time for rest as well. Moreover, power of concentration was not affected to their achievement directly.

CONCLUSION

Based on the result of research was led to Medical student Faculty of Medicine and Health University of Muhammadiyah Jakarta, class of 2014, it can concluded that the sleep quality of respondent was good, as well as the power of concentration was favorable also. In addition, there was no relationship which shown that the less of sleep quality will influence to less power of concentration, otherwise, there is no relationship which shown that good sleep quality will impact to high power of concentration.

Suggestion

According to this research, the suggestion is doing another further research to know the relationship between sleep quality with student concentration with adding other proponent factors.

¹² William, MC. Hubungan Kualitas Tidur dengan Konsentrasi pada Mahasiswa Angkatan 2009 Fakultas Kedokteran Universitas Sumatera Utara. Skripsi. Medan: USU. 2012.

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