Research

THE ASSOCIATION OF INSOMNIA DEGREE WITH GRADE POINT AVERAGE PREDICATE IN STUDENTS OF THE FACULTY OF MEDICINE DUTA WACANA CHRISTIAN UNIVERSITY, YOGYAKARTA

Yulius Dennis Ariel[1], Venny Pungus[1], Ida Ayu Triastuti[1]

[1]Faculty of Medicine, Universitas Kristen Duta Wacana Yogyakarta

Corresponding Author: dennisariel008@gmail.com

ABSTRACT

Background Insomnia is the most common sleep disorder in the world. The incidence of insomnia in some medical students in Indonesia can also reach half of the population. Meanwhile, sleep is the phase where oxygen transport and neuron performance occur optimally.

Objective This study aims to determine the association between the degree of insomnia and the grade point average predicate for Duta Wacana Christian University, Yogyakarta medical students.

Methods The analytical study with a cross-sectional design was conducted in this research. The number of participants were 213 medical students from 2016, 2017, and 2018 batches who were taken randomly. The degree of insomnia data was taken by the insomnia severity index questionnaire.

Results Through the questionnaire, 47.83% of male students and 39.67% of female students experienced sub-threshold insomnia, 7.6% of male students and 7.44% of female students experienced moderate-severity insomnia, and 0.82. % of female students have severe insomnia. Data were analyzed using Chi-square statistical test. Based on the results of the Chi-square analysis, the p-value obtained is 0.058 (p-value > 0.05) so the results are not in accordance with the hypothesis

Conclusion It can be concluded from these results that the degree of insomnia does not associate with the grade point average predicate for medical students of Duta Wacana Christian University, Yogyakarta.

Keywords: *degree of insomnia, grade point average predicate, medical students*

INTRODUCTION

Insomnia is the most common sleep disorder in the world. There are 10% of the world's total population experience insomnia at risk of decreased quality of life and psychological disorders.[1] In addition, based on research by the Indonesian Family Life Survey (IFLS) of 31,431 Indonesians aged 15 years or over, there are 11% of people have clinical symptoms of insomnia and 33.3% have symptoms of threshold insomnia.[2]

Based on several studies, the condition of insomnia has several impacts related to academic problems. In a study conducted by students at the University of North Texas, it was found that students with insomnia mostly had difficulty achieving their academic,[3] while another study conducted by King Abdulaziz University medical students showed that students who slept on average less than 8 hours per day performed better than low academics of students who spend more sleep.[4] In a study made by medical students, several figures show the prevalence of insomnia, such as in a study conducted at Udayana University, it was found that 56% of students had clinical insomnia and 4% of students had severe insomnia.[5] Research on insomnia in Yogyakarta has also been conducted at the medical faculty of Gadjah Mada University. In this study, 14% of male students experienced sub-threshold insomnia, 2% had moderate

insomnia and 0.6% experienced severe insomnia. Meanwhile, female students found 3% had an insomnia threshold, 5% had moderate insomnia and 0.6% had severe insomnia.[6] Research that analyzed the relationship between insomnia and learning achievement has also been conducted, among others, at the University of Syiah Kuala, Aceh, there were 51.79% of students had minor insomnia and 14.73% of students had moderate insomnia, and based on this study found a relationship between insomnia and achievement study (p = 0.000).[7] 28% of Andalas University students who had slept less than 6 hours also had a relationship between sleep quality and academic achievement of university medical students. The frequency of insomnia severity in various classes and genders of medical students of Duta Wacana Christian University will be discussed in this study, also any associations with the student grade point average.

METHODS

This research is an analytical study with a cross-sectional approach. The population in this study were students of the Faculty of Medicine, Duta Wacana Christian University, Yogyakarta class of 2016, 2017, and 2018, men and women. Sampling with the method of proportionate stratified random sampling. Respondents in this study were 213 respondents who were divided into 36 female students of class 2016, 38 female students of class 2017, 47 female students of class 2018 as well as 31 male students of 2016, 34 male students of 2017, and 27 male students of 2018. The data was collected by filling in the Insomnia Severity Index questionnaire to obtain the degree of insomnia in the respondents, while the cumulative grade point data were obtained from the academic administration bureau of Duta Wacana Christian University after the respondents approved informed consent and submit a letter of approval from the Dean of the Medical Faculty of Duta Wacana Christian University. The data in this study were analyzed using univariate and bivariate methods. The data obtained is processed using statistical software, namely SPSS Statistics. Univariate data, namely table data describing the frequency distribution of the variables studied and bivariate data, to see the association between the degree of insomnia and the predicate of the student's cumulative achievement index, which was analyzed using the chi-square formula. Ethical Clearance of this study was approved by the health research ethics committee of the Faculty of Medicine Duta Wacana Christian University number: 1171/C.16/FK/2020

RESULTS

The results of the study have arranged the distribution of students based on the male and female gender. The results of the frequency distribution of respondents' insomnia degrees are shown in Table 1 below. Based on data from 213 respondents (Table 1), students with non-insomnia significantly had the greatest rate (17.4%) in the 2017 class with the highest frequency, 57.9%, discovered in the female student in the 2017 class also.

Table 1. Distribution of respondents by the degree of insomnia

| | AMOUNT (N=213) | | | | | |
| | Women | | Men | | Total | |
	N	%	N	%	N	%
Non-insomnia significant						
2016	16	44,44	15	48,39	31	14,55
2017	22	57,90	15	44,12	37	17,40
2018	25	53,19	11	40,74	36	16,90
Insomnia threshold						
2016	15	41,67	14	45,16	29	13,61
2017	14	36,84	16	47,06	30	14,08
2018	19	40,43	14	51,85	33	15,50
Insomnia moderate severity						
2016	4	11,11	2	6,45	6	2,81
2017	2	5,26	3	8,82	5	2,34
2018	3	6,38	2	7,41	5	2,34
Severe Insomnia						
2016	1	2,78	0	0	1	0,47
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
TOTAL					213	100

Table 2 is the degree of insomnia of male students compared to female students. The highest frequency in the male category was the insomnia threshold, which was 47.83%, while the highest frequency for women was not insomnia which was 52.07%. In addition to the degree of insomnia, the frequency was proportionally divided by a cumulative grade point index.

Table 2. The Distribution Degree of insomnia in male and female students

Insomnia Degree	Men		Women	
	f	%	F	%
Non-insomnia significant	41	44,57	63	52,07
Insomnia threshold	44	47,83	48	39,67
Insomnia Moderate Severity	7	7,60	9	7,44
Severe Insomnia	0	0	1	0,82
TOTAL	92	100	121	100

Female and male respondents' cumulative grade point predicate frequency showed in Table 3 below. The highest predicate is 31%, which is in the very satisfactory category. In this predicate, the 2018 class has the most frequency compared to the 2016 and 2017 generations.

Table 3. The Distribution of respondents based on Grade Point Average predicate

	AMOUNT N=213					
	Women		Men		Total	
	N	%	N	%	N	%
Less than Satisfactory						
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
Good Enough						
2016	2	0.90	2	0.90	4	1.87
2017	0	0	6	2.80	6	2.81
2018	1	0.46	0	0	`1	0.47
Satisfactory						
2016	12	5.60	15	7.04	27	12.70
2017	4	1.87	6	2.81	10	4.70
2018	0	0	2	0.93	2	0.9
Very Satisfactory						
2016	20	9.38	14	6.57	34	16.00
2017	34	15.00	21	9.85	55	25.82
2018	41	19.24	25	11.7	66	31
Cumlaude						
2016	2	0.90	0	0	2	0.93
2017	0	0	1	0.46	1	0.46
2018	5	2.34	0	0	5	2.34
TOTAL					213	100

The highest frequency of predicate of the cumulative achievement index among men and women was very satisfying (Table 4). The percentage of very satisfactory for men was 65.22% while for women it was 78.51%.

Table 4. Description of the cumulative achievement index predicate for men and women students

	Men		Women	
	f	%	f	%
Less	0	0	0	0
Enough	8	8,7	3	2,48
Satisfactory	23	25	16	13,22
Very Satisfactory	60	65,22	95	78,51
Cumlaude	1	1,08	7	5,79
TOTAL	92	100	121	100

Cross-tabulation data of students who received praise and very satisfying achievement indexes were more dominant without insomnia. Meanwhile, students who have a satisfactory and more dominant achievement index have a threshold degree of insomnia. Based on Table 5, it is found that the result of cross-tabulation analysis was significant with a p-value is 0.058. It can be concluded that the degree of insomnia does not associate with the cumulative achievement index predicate (p value> 0.05).

Table 5. Cross-tabulation of cumulative achievement index predicates based on the degree of insomnia

		Insomnia Degree				
		Severe Insomnia	Insomnia Moderate Severity	Insomnia threshold	Non-Insomnia	Total
Predicate Grade Point Average	Less	0	0	0	0	0
	Enough	0	2	6	3	11
	Satisfactory	1	3	22	13	39
	Very Satisfactory	0	11	63	81	155
	Cumlaude	0	0	1	7	8
	TOTAL	1	16	92	104	213

DISCUSSION

Following the univariate and bivariate results, much is known about the insomnia degree and the cumulative achievement index predicates of medical students of Duta Wacana Christian University. Female students in the 2016 class were found to have a greater percentage of moderately severe and severe insomnia than those in the 2017 and 2018 courses. This matches the findings of Ariantini and Hariyadi's study. The participants in his study were in their last year of college, writing theses, and meeting the DSM-IV criteria for insomnia. According to this study, stress might contribute to the symptoms of sleeplessness. Having to complete final papers on time, parental pressure, and a desire to graduate from school are common sources of stress.[9]

In male respondents, there was a difference in trends where students from class 2016 as final year students had a lower degree of moderate insomnia than students in class 2017. A study by Kumara and I Nyoman Andika[19] showed the same result where final-year students had lower degrees of insomnia than senior years. First because of the adaptations they have made. First-year students tend to have complaints about the many assignments given, while last year students feel that they are familiar with the education system they have been through.[10] Although men and women students in the final year have the same responsibility for completing their final project. however, according to Kelly, Megan M there are different strategies between men and women in coping. Men are more focused on

instruments that can relieve their stress, but women are more likely to do less positive reframing.[20] The grade point average variable between men and women has the highest percentage in the predicate very satisfying and they are not found for respondents with a less cumulative grade point average. Another result is that male and female students of class 2016 have a lower achievement index predicate than students of 2017 and 2018. Identification of factors that affect learning achievement is complex. There are several things that can affect their lifestyle, learning environment and teaching activities.[10] However, the factor that influences students' academic progress was their thesis total score grade, which is rated "E" since they can complete their thesis in the next semester on average. Another factor that can influence is the Academic Regulation of the Faculty of Medicine, Duta Wacana Christian University, chapter 34 which state—the achievement of students. Students who have an achievement of less than 3.00 are not allowed to take part in the Yudisium.[11]

In the bivariate data, it is found that the Chi-square result is 0.058, which means that if the null hypothesis is accepted more than 0.05 or equivalent, there is a 95% probability that it does not reach the hypothesis requirements. So, if the degree of insomnia is higher, it does not significantly affect the achievement of the student cumulative index predicate. However, it should be noted that 0.058 is still below 0.010, which means that there is a 90% probability that it reaches hypothesis.[12] Although at the 0.05 limit the probability

value fulfills the null hypothesis, other factors such as stress, mood disorders, depression, social problems, and other symptoms according to ICSD are signs and symptoms of insomnia and are related to cognition. Research with similar results was conducted by Safriyanda et al. It has been found that there is no relationship between sleep quality and learning achievement.[13] Rashid who conducted research on medical students also found that there was no significant relationship between sleep quantity and their memory.[14] There are several scientific reasons that insomnia does not affect their learning achievement. One of them is caused by changes in human circadian physiology that have adapted. Circadian rhythms will continue to adapt 23.5 to 24.5 hours each day based on the light exposure respondents receive.[15] Humans spend a lot of time outdoors and get natural sunlight, but because humans switch to a job, they get more exposure to artificial light from lights, computer light or device light. These changes make retinal photoreceptors adapt and affect the decrease in melatonin.[16] The decrease in melatonin will make dopamine, vasopressin and oxytocin freely regulated. Where the three hormones are hormones that can increase performance cognitive, memory, attention, and intelligence.[17,18]

CONCLUSION

Based on the results and discussion of the research that has been done, it can be concluded that the high degree of insomnia experienced by medical students of Duta Wacana Christian University does not associate significantly with the predicate of the student's cumulative grade point index.

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CONFLICT OF INTEREST AND FUNDING RESOURCES

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