The Relationship of the Insomnia Degree With Smoking Habit Overtraining

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ABSTRACT
Smoking habits become common in students and affect their quality of life. Also, heavy exercise habits can have an impact on performance. This study reviews the relationship between insomnia and smoking habits and overtraining in Sports Science Faculty students at Makassar State University. This research was an observational analytic with a cross-sectional perspective conducted with a total sample of 100 students. Variables used were insomnia, smoking behavior intensity, and overtraining syndromes. This research found the characteristics of 100 samples that have insomnia problems and the age between 20-22 years old. There is a positive correlation between smoking behavior and the degree of insomnia, i.e., the heavier the intensity of smoking behavior, the more substantial the degree of insomnia. Nevertheless, there is no correlation between overtraining and the degree of insomnia.

Keywords: Insomnia, smoking, overtraining

1. INTRODUCTION

Sleep problems may cause many life problems, such as health, stress, and working performance. Insomnia indicated difficulty in falling asleep or waking up earlier and not being able to go back to sleep. The sleep patterns of insomniacs differ from the general rhythm of sleep, making it difficult to wake up in the morning and have an impact on social life. Insomnia as a health disorder is usually caused by several factors, such as stress, tension, depression, smoking (nicotine), caffeine, and other causes related to specific conditions such as old age. Long-term insomnia has an impact on work productivity due to decreased physical health, decreasing the ability to concentrate, and endurance. Even worse, insomnia can cause a risk of death [1][2].

Some previous studies describe the relationship between smoking habits and insomnia. The nicotine contained in the brain can trigger addiction and interfere with smoker's sleep habits. Active smokers have a more significant risk of insomnia compared to nonsmokers. This risk also occurs with students, where most students who smoke experience sleep disorders. [3]. Another disorder caused by smoking is the intensity of drowsiness during the day is higher in female and male smokers. Sleep disorders among smokers are related to the effects of nicotine stimulants on psychological disorders. [4]

On the other hand, insomnia is also thought to be related to overtraining. This syndrome is characterized by complaints of persistent fatigue, poor performance, mood swings due to neuroendocrine, insomnia, depression, and often pain. Overtraining is also often regarded as pathologies fatigue due to exercise. Overtraining is a condition that occurs when the body experiences excessive physical exercise beyond natural ability. Fatigue requires time and rhythm to recover. Athletes who experience overtraining often complain of defeat even while resting. Also, due to this syndrome, athletes feel psychological disorders such as feeling helpless and unstable emotions.

This study reviews the effect of smoking and overtraining on insomnia disorders in Sports Science faculty students at Makassar State University. Students are required to produce an improved performance in their studies. However, this condition is not achieved due to insomnia disorders marked by difficulty getting up early. The fact shows that the number of smoker students in this faculty is quite significant. Furthermore, the risk of overtraining is also high due to a dense exercise training schedule. The continuous training schedule without adequate rest breaks can result in overtraining. Discusses that prolonged insomnia can cause a decrease in learning achievement and affect the duration of study completion.

2. METHODOLOGY

The study was conducted at the Faculty of Sports Science, Universitas Negeri Makassar in January 2019 – May 2019. The study involved 100 students who had insomnia. The criterion for insomnia degree was measured by the Insomnia Rating Scale, where a score of <8 means no insomnia, a score of 8-13 mild insomnia, a score of 13-18 moderate insomnia, and a score above 18 is severe insomnia. For smoking behavior, the number of cigarettes smoked more than 15 cigarettes a day is heavy smokers, 4-15 cigarettes are moderate smokers, and 1-4 cigarettes a day are light smokers. As for overtraining, a person can be said to experience overtraining if he has done excessive physical activity and experience, one of the symptoms contained in overtraining syndrome.

Quantitative data analysis uses the Cross tabulation method to find the relationship between variables. Meanwhile, researchers assessed the relationship between variables by the Spearman correlation.

3. RESULT AND DISCUSSION

3.1. Incidence of Insomnia based on sample characteristics

Insomnia is very influential in student learning and training patterns, especially in some physical exercises that must be undertaken by students of Sport Science. The results of the study found that at the age of 20-22 years, there were the most insomnia conditions as many as 62 people, and there were 38 people who did not experience insomnia. The description of the incidence of insomnia is illustrated in the chart below.
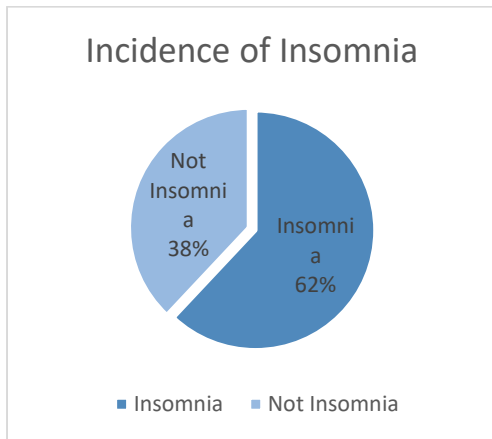

Figure 1 Incidence of Insomnia

3.2. The relationship between insomnia and smoking habit

The researcher divides insomnia into four levels, namely not Insomnia, mild Insomnia, moderate Insomnia, severe Insomnia. The description of smoking habits in each type of insomnia is presented in table 1.

Table 1. The relationship between insomnia and smoking habit

Type of Insomnia	Smoking habit	Sample	Percentage	Total
Not insomnia	Non	20	(100%)	20
	Light smoker	0	(0%)	
	Moderate	0	(0%)	
	Heavy	0	(0%)	
Mild insomnia	Non	7	(15.9%)	44
	Light	16	(36.3%)	
	Moderate	20	(45.5%)	
	Heavy	1	(2.3%)	
Moderate insomnia	Non	1	(5.6%)	18
	Light	3	(16.7%)	
	Moderate	8	(44.4%)	
	Heavy	6	(33.3%)	
Severe insomnia	Non	0	(0%)	18
	Light	1	(5.6%)	
	Moderate	7	(38.9%)	
	Heavy	10	(55.5%)	

From table 1, it can be seen that all samples that did not experience insomnia did not have a smoking habit. Most of the samples that experienced mild insomnia had a moderate smoking habit. From 100 samples, 18 people experienced moderate insomnia who were 44.4% moderate smokers, and 33.3% heavy smokers. Furthermore, samples that often experience insomnia have heavy smoking habits. In the correlation test using Pearson Chi-Square, the results obtained 0,000 so that it can be said that there is a relationship between smoking behavior with the degree of insomnia.

3.3. Relationship between the degree of insomnia and overtraining

In the case of overtraining, the number of samples that experienced overtraining was 64, and the samples that did not overtrain were 36. The details can be seen in table 2.

From the results, it was found that overtraining cases dominated every sample that did not experience Insomnia (75%), moderate Insomnia (72%), and severe Insomnia (77.7%). Whereas in mild insomnia, the number of overtraining and not overtraining amounts to the same, as many as 22 people. In the correlation test using Pearson Chi-Square, the results obtained 0.161. So it can be said that there is no relationship between overtraining with insomnia.

Table 2. Relationship between the degree of insomnia and overtraining

Insomnia	Overtraining	Sample	Percentage	Total
Not Insomnia	Not Overtraining	5	25%	20
	Overtraining	15	75%	
Mild Insomnia	Not Overtraining	22	50%	44
	Overtraining	22	50%	
Moderate insomnia	Not Overtraining	5	27.8%	18
	Overtraining	13	72.2%	
Severe insomnia	Not Overtraining	4	22.2%	18
	Overtraining	14	77.7%	

4. DISCUSSION

This research shows that there is a relationship between insomnia with smoking behavior and overtraining. The smokers indicated that the incidence of insomnia would be more. The mechanism of the effect of nicotine on insomnia is obtained by reference. From the recording of brain waves in the sleep laboratory, it was found that smokers get more light sleep than deep sleep, especially during the early hours of sleep [5]. Other researchers write that the smoker's sleep quality is lower, which is indicated by shorter periods of sleep compared to nonsmokers. The smoker's faster eye movement and more sleep apnea and leg movements in sleep. Due to the low quality of sleep, the number of people who reported feeling not fresh or still sleepy in smokers is four times compared to people who have no smokers [6].

Overtraining syndrome reflects the body's inability to adapt to the buildup due to fatigue every day, intense exercise that is not balanced with enough rest. Overtraining syndrome has several similarities with chronic fatigue syndrome and clinical depression, especially excessive fatigue, mood disorders, insomnia, and muscle soreness [7]. This study resulted in no correlation between insomnia and overtraining. In contrast to previous expectations, the results of this analysis are related to the age of the respondents between 20 – 22 years. Younger intestines make it possible to release fatigue and not experience long-term mental stress. The limitation of this study is that other factors that influence insomnia are not taken into account, namely the habit of drinking coffee (caffeine). Most smokers have the habit of drinking coffee. This can affect the risk of insomnia.

5. CONCLUSION

In this study, it can be concluded that there is a positive correlation between smoking behavior and the degree of insomnia. The heavier the intensity of smoking behavior increase the degree of insomnia. But there is no correlation between overtraining and the degree of insomnia. From the research results obtained, it is necessary for counseling and guidance to students about the consequences of smoking behavior, so that they can leave these habits slowly. Besides, this research can be developed with a larger number of samples and consider confounding factors that can be minimized.

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