



Sleep Quality in Sports Students: a Study Research of Screen Time, Coffee Consumption, and Smoking Habits

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Abstract. The study aimed to determine the correlation of screen time habits, coffee, and cigarette consumption to the quality of sleep of sports coaching students. The sample used was students of the Sports Coaching Education study program totaling 105 samples with used Simple Random Sampling technique. The method used in the study used a questionnaire question, namely the Sleep Quality Scale (SQS) to measure of sleep quality. The results stated if there was a positive relationship between the amount of screen time, coffee, and cigarette consumption to students' sleep quality. This study concluded that the more screen time, coffee, and cigarette consumption in students, the worse their sleep quality would be.

Keywords: sports student, daily habit, rest, health, gadget, college student.

1 Introductions

Sleep is the body's need to carry out daily activities properly. Even so, many people ignore sleep to complete their work, including students. The busyness of students often makes it difficult for them to get enough sleep [1] and experience sleep disorders [2]. Some of the activities they have are related to academic assignments, organizations, or lecture times, and some who do additional work make it difficult for them to manage their sleep time.

Not getting enough time to sleep is not something good to do for a long time. This is because sleep time can affect academic performance [3,4]. Research shows that sufficient and regular sleep time makes academic performance better [5]. In addition to reducing sleep and rest time, this busyness can increase stress in students and affect decreased control and temperament [6]. Research has shown that most student stress is related to academics [7,8], and factors such as relationships with people around [9], family [10], self-confidence [11], and competition between friends [12]. Adequate rest time will help them reduce stress. The recommended amount of sleep for ages 18-60 is at least 7 hours per night [13].

Several factors cause someone to experience sleep disorders, including depression [14,15], social anxiety [16], pain, fatigue [17] age, and obesity [18,19]. In addition, several ways can be done to improve sleep quality that can help someone to sleep well, including regulating diet [20,21], sleeping during the day [22], and doing self-relaxation

[23]. In addition, research also suggests consuming less than three cups of coffee each day, notably before bed for better sleep quality [24]. Significant influence also found on smoking [25] and screen time on quality of sleep [26]. By having good sleep quality, students will have a positive sense of satisfaction with the life they live [27].

Several studies have examined sleep quality in students. One study showed > 60% of students experience bad sleep [28]. This is related to gender, length of study, bed hygiene, and good time management [29]. Another study revealed that most students realize that they need more sleep, contrary to the fact that their sleep time decreases over time [30].

Research conducted on medical students also said the majority of students have bad quality of sleep [31, 32, 33, 34, 35, 36], as well as in nursing students [37, 38, 39]. In pharmacy, poor sleep quality is often found in low GPA (grade point average) students [40].

Even though there are several research that studying the sleep quality of students, most of them only study medical students and there has been no study examining sports students. Based on this, the researcher wants to conduct a study of the quality of sleep in sports students and relate it to various habits that are often done by students. By conducting this research, it hopes can be used to find out how the sleep quality of sports students is and what good habits are to improve sleep quality.

2 Results and Discussions

This is a quantitative research with quantitative descriptive analysis using instruments for data collection with the SQS (Sleep Quality Scale) questionnaire developed by Hyeryeon Yi, Kyungrim Shin, and Chol Shin in their research [41]. The questionnaire was chosen because it is appropriate and valid for measuring sleep quality in individuals aged 18-59 years, where the age of students is included in it. Simple Random Sampling was used in 105 people from the Sports Coaching Education study program, Faculty of Sports and Health Sciences, Surabaya State University.

The questionnaire was shared online via Google form to reach the research subjects for data collection. Meanwhile, for measuring the length of screen time, coffee, and cigarette consumption, questions with a scale filled in by the respondents were used, which would show their intensity in using screen time, and coffee and cigarette consumption. Data obtained analyzed with Spearman correlation test to be able to analyze the significant relationship of the existing data.

The measurement scale used for the amount of screen time, coffee consumption, and cigarettes is as follows:

1. Screen Time Amount
Measurement Result
 - High : >6 hours/day
 - Medium : 3-6 hours/day
 - Low : <3 hours/day
2. Coffee Consumption
Measurement Result
 - No Coffee Consumption
 - Coffee Consumption:

- High : >3 cups/day
 - Medium : 2-3 cups/day
 - Light : 1 cup/day
3. Smoking
- Measurement Result
- Non-Smoker
 - Smoker
 - Light : 1-5 cigarettes/day
 - Medium : 5-9 cigarettes/day
 - Heavy : > 10 cigarettes.

3 Results and Discussion

This is a quantitative research using quantitative descriptive analysis for instruments with the SQS (Sleep Quality Scale) questionnaire.

Table 1. Sample Description

Variable		Annotation
Age	18-20	75%
	>20	25%
Gender	Male	67%
	Female	33%

Table 1 shows that the overage of samples in the research were males aged 18-20.

Table 2. Sleep Quality Scale Questionnaire Score

No.	Variable	N	Minimum	Maximum	Mean	Std Deviation
1.	Sleep Quality Score	105	11	66	32.581	10.476

The average score for students' sleep quality is 32.5 out of a maximum total score of 84. These results indicate that the amount of sleep disturbance experienced by students is 38.7%. This figure shows that the quality of their sleep is quite good, considering that the number of scores indicating sleep disturbance does not reach 50% of the total.

Table 3. Spearman Correlation Test Results

No.	Variable	Spearman Correlation Test		
		Sleep Quality		
		Correlation Coefficient	Sig. (2-tailed)	N

1.	Screen Time	0.241	0.013	105
2.	Coffee Consumption	0.031	0.753	105
3.	Smoking	0.021	0.834	105

The correlation coefficient shows a positive relationship between sleep quality and the amount of screen time, coffee consumption, and cigarettes. A significant relationship ($t < 0.05$) was also found in sleep quality and screen time. Meanwhile, sleep quality, coffee consumption, and cigarettes do not show a significant relationship ($t > 0.05$).

These results explain that the more screen time, coffee consumption, and cigarettes a person does, will make them having worse quality of sleep. A significant correlation was also found in sleep quality and screen time. This means that the time they spend on the screen greatly affects a person's quality of sleep.

Previous studies also show a positive relationship among screen time and sleep quality [42, 43, 44]. Smartphones are very popular with adults and young people, where they can spend as much as 4-8 hours per day using smartphones [45]. Spending more time in front of gadgets will make a person have a less active and less mobile lifestyle [46]. This is highly discouraged considering the many risks that can arise in addition to poor sleep quality [47] such as obesity [48], psychological disorders, depression [49], cardiovascular disease [50], and high blood pressure [51]. Given this reality, someone should limit the amount of time they use gadgets every day to improve their sleep quality and avoid various risks of disease that can occur.

Other results obtained in this study are also the same as previous studies which stated significant relationship in coffee and quality of sleep in students [52] was not found. However, higher consumption of caffeine is often related to poor sleep quality in adults [53]. A positive relationship of sleep quality and coffee consumption was also found in this research. This means that the more coffee someone consumes, the greater their sleep disorders will be. These results supporting previous studies that stated that the more coffee a person consumes, the less sleep time they have or less than 6 hours [54], and the quality of sleep will also be worse [55]. This can happen because the caffeine in coffee can increase awareness by inhibiting adenosine A1 and A2 in the brain receptors [56], which have an important role in sleep [57], and lower melatonin secretion, which has the responsibility for sleep patterns controls [58]. Given this reality, students should limit the amount of coffee they consume per day to have better sleep quality.

Smoking habits also have a positive correlation with students' quality of sleep. These results are in line with previous studies which state that smoking habits can increase the risk of sleep disorders [59, 60]. This can happen because the nicotine content in cigarettes can be quickly distributed throughout the brain through the blood [61]. In addition, nicotine can stimulate the release of neurotransmitters from nicotinic receptors that regulate the sleep cycle, which will ultimately worsen sleep disorders and can affect the quality of sleep [62, 63]. In addition to disorders such as insomnia [64], apnea, parasomnia, arousal, and bruxism, smoking also affects health in such as cardiovascular, respiratory, neurological, psychiatric, gynecological, pediatric, inflammatory, and metabolic [65]. Given the negative effects on sleep quality and health, it is highly recommended for students to avoid smoking.

After this research, it is hoped to be used as a guideline that can help students improve their sleep quality. Considering that sports students tend to have more outdoor physical activity than other students, good sleep quality will be able to prevent them from feeling excessively tired so that they can achieve better academic performance. The type of sample used in this study is still limited to sports students without considering the sample's gender and age. Further research also recommended increasing the variation of samples both in terms of gender and different student groups for the wider social groups.

4 Conclusion

This research stated a positive correlation was found in screen time, coffee, and cigarette consumption to students' sleep quality. With this fact, it is recommended that students reduce the amount of screen time, coffee consumption, and cigarettes to have better sleep quality.

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