

A Research on the Relationship between Sleeping time and Concentration in class

Yuchao Huang(Tony), Yushun Chen(Jerry)
G11 AP Statistics

Beijing National Day School, Beijing China

Proposal

1, Research Question

The group will investigate whether there is a relationship between sleeping time and concentration in class. We have noticed that each student has a different level of concentration and mental state in class, which is probably related to their sleeping time the night before. Therefore, we are trying to investigate whether sleeping time will influence students' focus on learning.

2, Background research

There is a common belief that people who get enough sleep will have better energy levels the next day. However, due to academic stress and work pressure, many students and workers burn the midnight oil and still wake up early the next morning.

Sleeping is one of the most important physiological activities for humans as it is the golden hour for replenishing energy and growth. However, students who stay up late also behave differently in class the next day. Some are very energetic, some are very tired, and some show no significant changes from their normal sleep patterns. The reason for this may be twofold. First, when the brain is overworked, it can become highly stimulated and less tiring. Second, because students are required to attend class on time, this external constraint can force a high degree of concentration.

Because the effect of sleep on mental state varies from person to person, we aim to explore whether the amount of sleep one gets affects their mental state the following day.

3, Sampling and Experimental design

- (1), Variables: Sleeping time and The number of times student fell asleep in class.
- (2), Type of study: This is an observational study, since we need to ask students how much time they slept last night and their concentration in class. We will set up a questionnaire to collect the data.

(3),After collecting the data, we will use the to determine whether there is a relationship between to variables.

4,Data set

We designed a sleepiness level(ESS) and sleep duration questionnaire, and analyzed the sleepiness scores obtained from different sleep fluids to see if there was a direct relationship between the two.

For each question in the questionnaire, each selection have its special marks. After the volunteer finish it, we will sum up the whole score to estimate their lethargy.

21:34 5月17日周三

ESS分析

94%

*2. 坐着读书时

☐ 从不打瞌睡

☐ 轻度可能打瞌睡

☐ 中度可能打瞌睡

☐ 很可能打瞌睡

*3. 看电视

☐ 从不打瞌睡

☐ 轻度可能打瞌睡

☐ 中度可能打瞌睡

☐ 很可能打瞌睡

*4. 在公共场合坐着（如开会或者剧院）

☐ 从不打瞌睡

☐ 轻度可能打瞌睡

☐ 中度可能打瞌睡

☐ 很可能打瞌睡

Then, we will make a table with sleep time on the horizontal axis and ESS score distribution on the vertical axis. The data is the number of people.

ESS score	0-5	5-8	8-11	11+
Sleeping Time				
5h				

6h				
7h				
8h				
9h				

5,Reference

[1]Johns MW: A new method for measuring daytime sleepiness: the Epworth sleepiness scale. Sleep. 1991, 14 (6): 540-5.