



The Effects of Sleep on Mood

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INTRODUCTION

Question: How does the amount of sleep affect mood in high school students?

An observational study was conducted on how the amount of sleep a teenager receives affects their mood. A sample size of fifteen students ages 14-18 from our community was asked to record their amount of sleep followed by a daily mood survey. The moods tested include concentration, conscientiousness, patience, calmness, and happiness. The mood states selected are critical to teen's health and academic success.

BACKGROUND AND SIGNIFICANCE

Most research done on this topic includes human test subjects that undergo sleep studies. One study by Patrick Finn at Johns Hopkins University School of Medicine revealed that people with interrupted sleep spent less time in the phase of sleep known as deep sleep, which resulted in a higher drop of positive mood (Whiteman). However, this study took a slightly different approach in which the amount of sleep rather than the type of sleep was looked at.

Sleep is important because it is essential for a person's health and wellbeing. Yet millions of people do not get enough sleep and suffer from lack of sleep (Hall). According to the National sleep foundation recommendations, teenagers (14-17) should get 8-10 hours of sleep each night ("Teens And Sleep"). Not getting enough sleep can impact our health. For example, sleep deprivation often causes us to be moody or sluggish (Fryer). With this in mind, it can be easier to determine why this happens and adjust the amount of sleep one gets.

RESEARCH METHODOLOGIES

The subjects kept a log of what time they go to sleep and what time they wake up. They rated their 5 mood types on a scale of 1-4, where 1 represents not at all, 2 represents somewhat, 3 represents moderately so, and 4 represents very much. The subjects were asked to answer the questionnaire in the evening, right before going to bed, so that they could reflect on how they felt that day.

Mood Questionnaire				
	Not At All	Somewhat	Moderately	Very Much
Were you able to concentrate today?	1	2	3	4
How conscientious (not impulsive) were you today?	1	2	3	4
How patient (not irritable) were you today?	1	2	3	4
How happy (not sad) were you today?	1	2	3	4
How calm (not anxious) were you today?	1	2	3	4

RESULTS

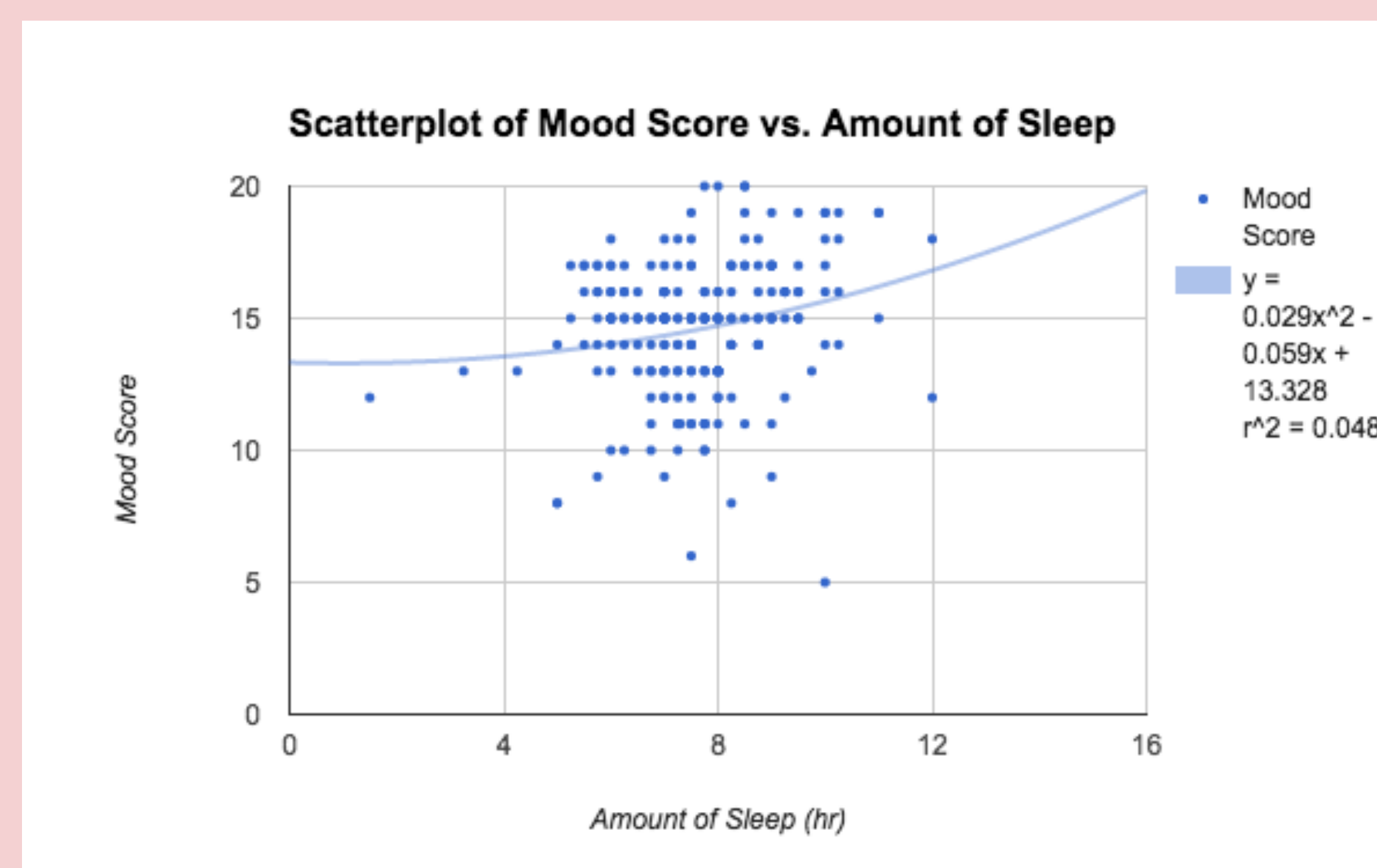


Figure 1. Scatterplot shows the relationship between total mood score and amount of sleep.

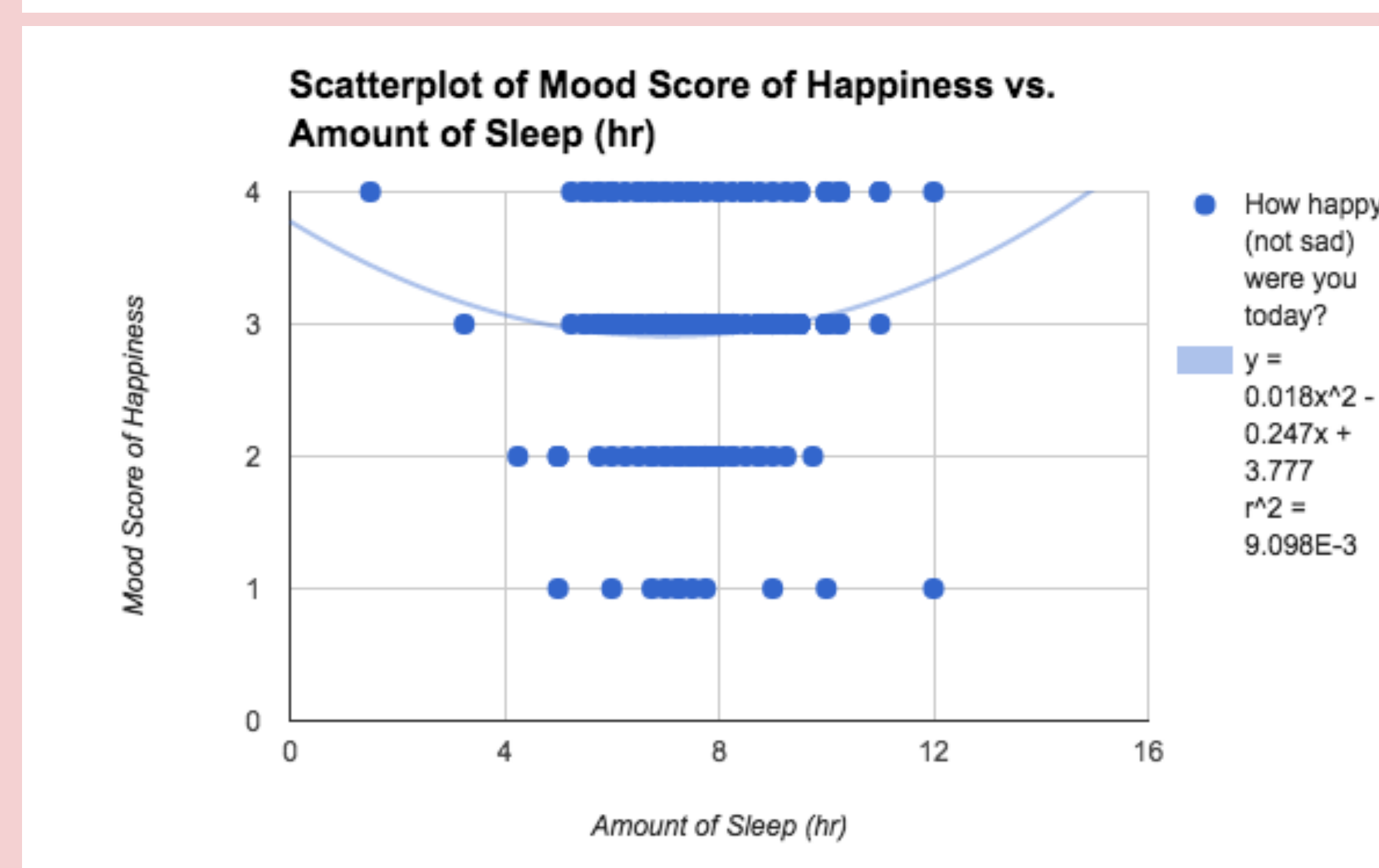


Figure 2. Scatterplot shows the relationship between happiness mood score and amount of sleep.

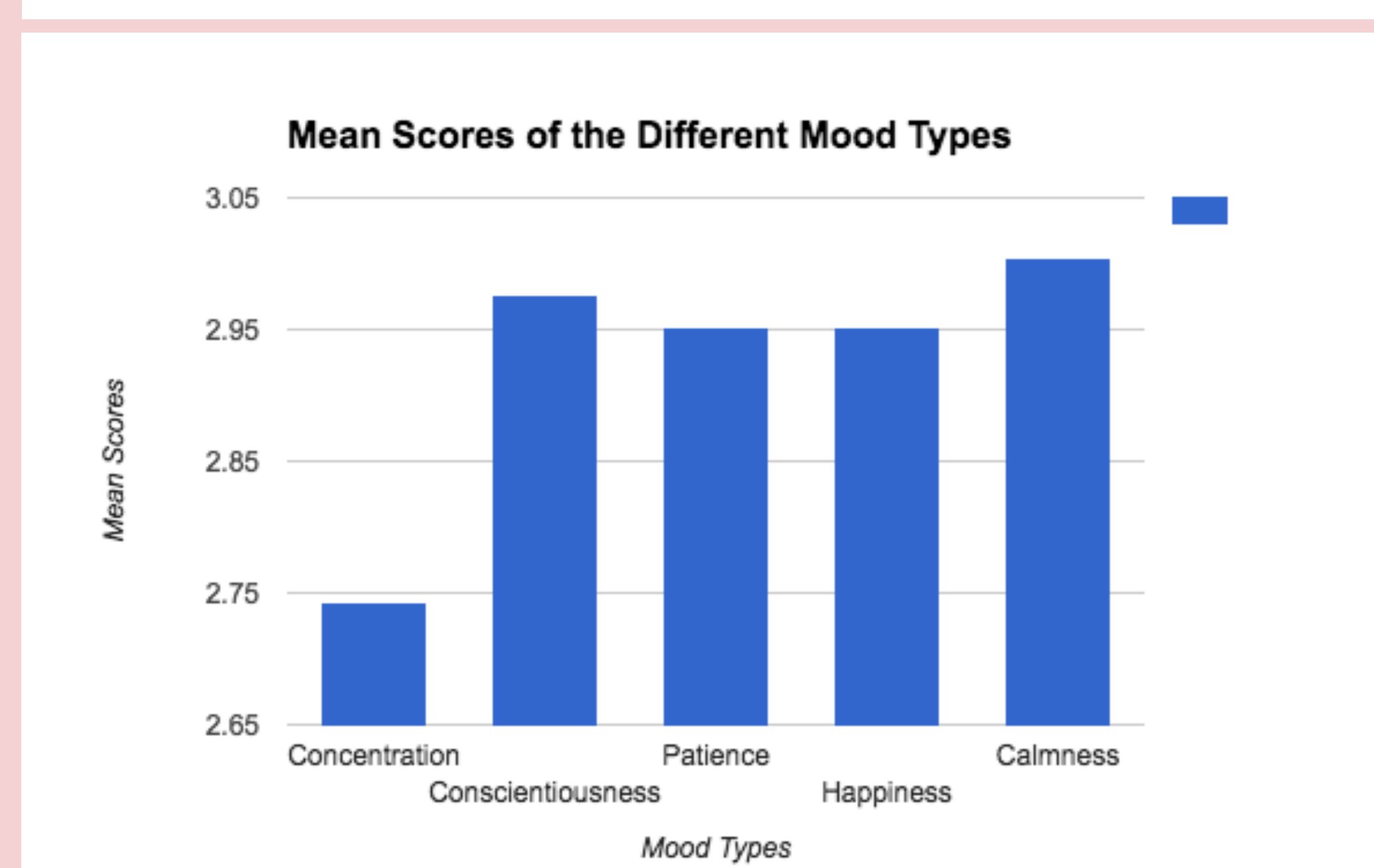


Figure 3. Bar graph shows the mean scores of the different mood types.

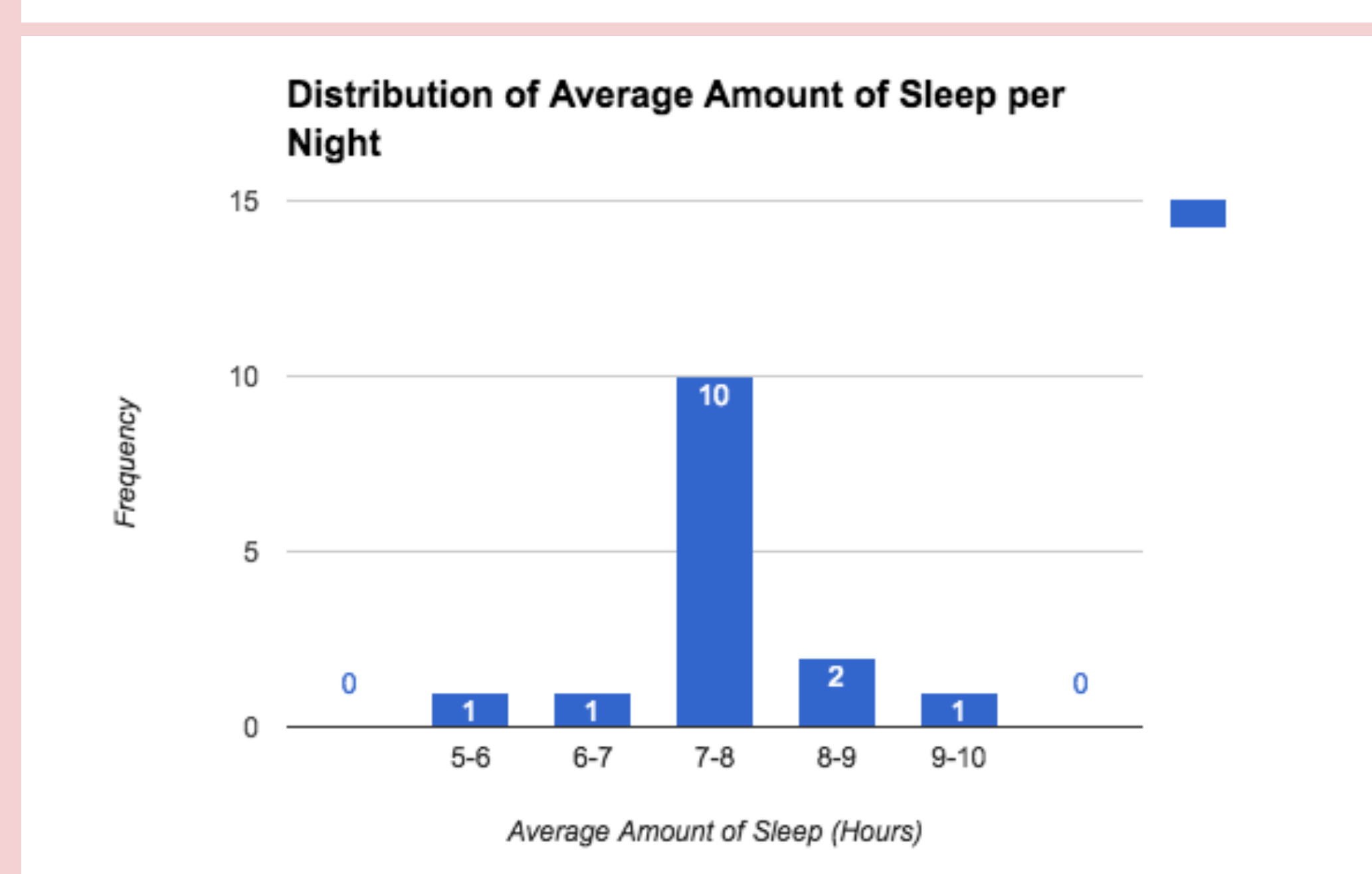


Figure 4. Bar graph shows the distribution of the average amount of sleep our participants receive per night.

CONCLUSION

Based on the data, there is **very little correlation** between total mood score and amount of sleep. However, the small sample size is not representative of the true population of high school students because of its lack of variability. Our sample is a **very skewed population**; a participant in our study stated that in Palo Alto schools, it is "normal" to **feel highly pressured**. Students sleep less due to a variety of factors: social media, the demands of high school, the desire to do well academically, and social pressures.

Most students, on average, get 7-8 hours of sleep per night and not a single participant averaged above the recommended amount. This means that the majority of our subjects on any given night were getting **less than the recommended amount of sleep** for their age group, which is 8-10 hours per night according to the National Sleep Foundation.

Despite the weak correlation between sleep and mood in this study, sleep is still important to the development of a young mind. The data shows that students tended to **go to bed late yet wake up early**. One possible solution to the issue of low amounts of sleep may be later start times for school, resulting in greater sleep amounts. Another solution could be the addition of sleep deficit education to science classes.

The average **mood** for participants was **very low**. While this may be attributable to adolescence or environmental factors, it establishes that students in our community tend to have less than optimal moods. This raises the obvious question of why? **If there is no correlation with sleep, what might be causing these low mood scores, and is it preventable?**

ACKNOWLEDGEMENTS / REFERENCES

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