

The Straight A Student Counts Sheep: Quantity of Sleep and Effects on Academic Performance

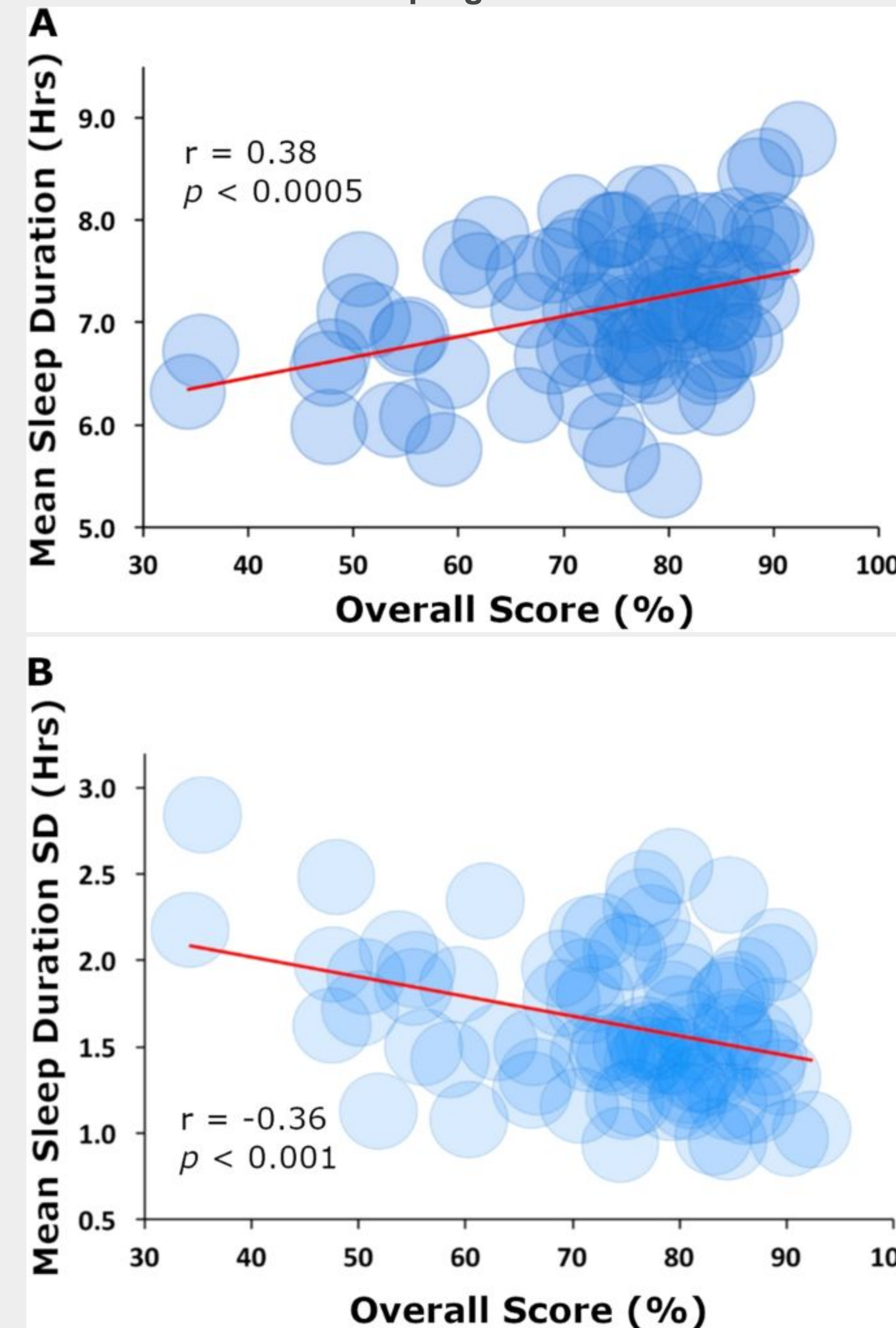
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ABSTRACT:

- Purpose of sleep: recuperate from stressors (muscles relax, growth and repair, brains process the information from the previous day)
- CDC sleep recommendations:
 - Children: 9 and 12 hours
 - Teenagers: 8 and 10 hours
- Symptoms of lack of sleep:
 - Increased stress, difficulty concentrating, and lower recall
- The point of this project is to do a research review to see if the effects of sleep (or lack thereof) in school-age people correlated to a decrease in academic performance.

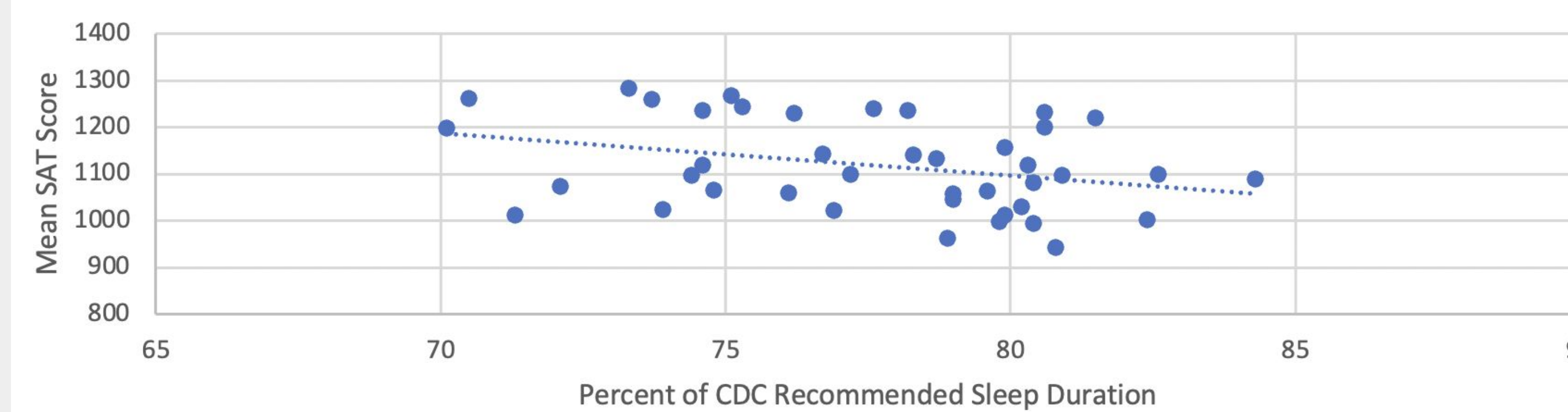
RESULTS:

Report card grades before and after a school-based sleep intervention program



Graph A shows the correlation between the average daily hours of sleep students would get
Graph B depicts the Standard Deviation of the Average Daily hours of sleep (which was defined how inconsistent students slept, even with exams just around the corner)
(1)

Percent of Recommended Sleep vs Mean SAT Score (by state)



Seemingly no correlation between obtained percent of CDC recommended sleep and mean SAT score. Each data point represents the mean of both variables from each state.
(3, 4)

LIMITATIONS:

- Lack of a control group → no control over what data was recovered as subjects were not in standard conditions
- Small sample size
- Use of self-assessments regarding academic performance

CONCLUSION:

- When looking at daily tasks/schoolwork: less sleep has a direct correlation to poor academic performance, regardless of age. (elementary, middle, high school, and university students).
- Less sleep (HS) does not correlate with lower scores on SAT
- Implications: short term vs long term academic performance
- Lack of sleep is also correlated with impaired motor skills, lower verbal fluency and creativity, inattentiveness, decreased higher cognitive functions (ie attention, memory, and problem-solving)

BACKGROUND:



Centers for Disease Control and Prevention (CDC)

RESEARCH QUESTION / HYPOTHESIS:

Will lack of sleep/amount of sleep have a major impact on one's academic performance?

We hypothesize that lack of sleep would negatively affect one's academic performance



REFERENCES:

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3. "High School Students Sleep Data." Centers for Disease Control and Prevention, September 14, 2022. <https://www.cdc.gov/sleep/data-and-statistics/high-school-students.html>.