

# Effects of Sleep on Academic Performance in College Students

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## Introduction

- Poor sleep is associated with negative cognitive, physical, and psychological outcomes (Grandner, 2014).
- Research shows that women tend to have worse sleep health due to hormone fluctuations (Jehan et al., 2016).
- Students who sleep 7-8 hours per night on average have a higher GPA than those who sleep 6 hours or less (2023).
- 1 in 4 students indicated that their academic performance has been affected by lack of sleep (2023).



Figure 1. 60% of college students have poor quality sleep (Smith, 2023).

## Research Objectives

- To investigate the relationship between sleep and overall GPA
- Hypothesis: Quality sleep has a direct impact on undergraduate students' academic performance.

## Methods

- Observational secondary analysis using cross-sectional data from the 2021 Pioneer Student and Well-being Survey
- The data sets included data on self-reported sleep quality and overall GPA
- Exposure variable: Groningen Sleep Quality Scale (GSQS).
  - GSQS  $\geq 6$  indicates disturbed sleep
- Outcome variable: Overall GPA
- A total of 396 CHP students completed the survey.
- Our analytic sample comprised of 211 students who had complete exposure and outcome data.

## Results

Participant Characteristics	Frequency (%)
Age (Mean, SD)	22.6 (4.1)
Gender	
Man	40 (18.9)
Woman	171 (81.0)
Year in School	
Freshman	14 (6.6)
Sophomore	40 (18.9)
Junior	56 (26.5)
Senior	47 (22.3)
Graduate/Professional	50 (23.7)
Not Seeking Degree/Other	4 (1.9)
Race	
White	176 (83.4)
Hispanic/Latino	10 (4.7)
Asian	8 (3.8)
Black/African American	6 (2.8)
American Indian/Alaska Native	6 (2.8)
Two or More Races	5 (2.4)
Sleep Quality Score (Mean, SD)	6.1 (4.1)
Overall GPA (Mean, SD)	3.5 (0.3)

Table 1. Frequency of participant characteristics

## Results (cont.)

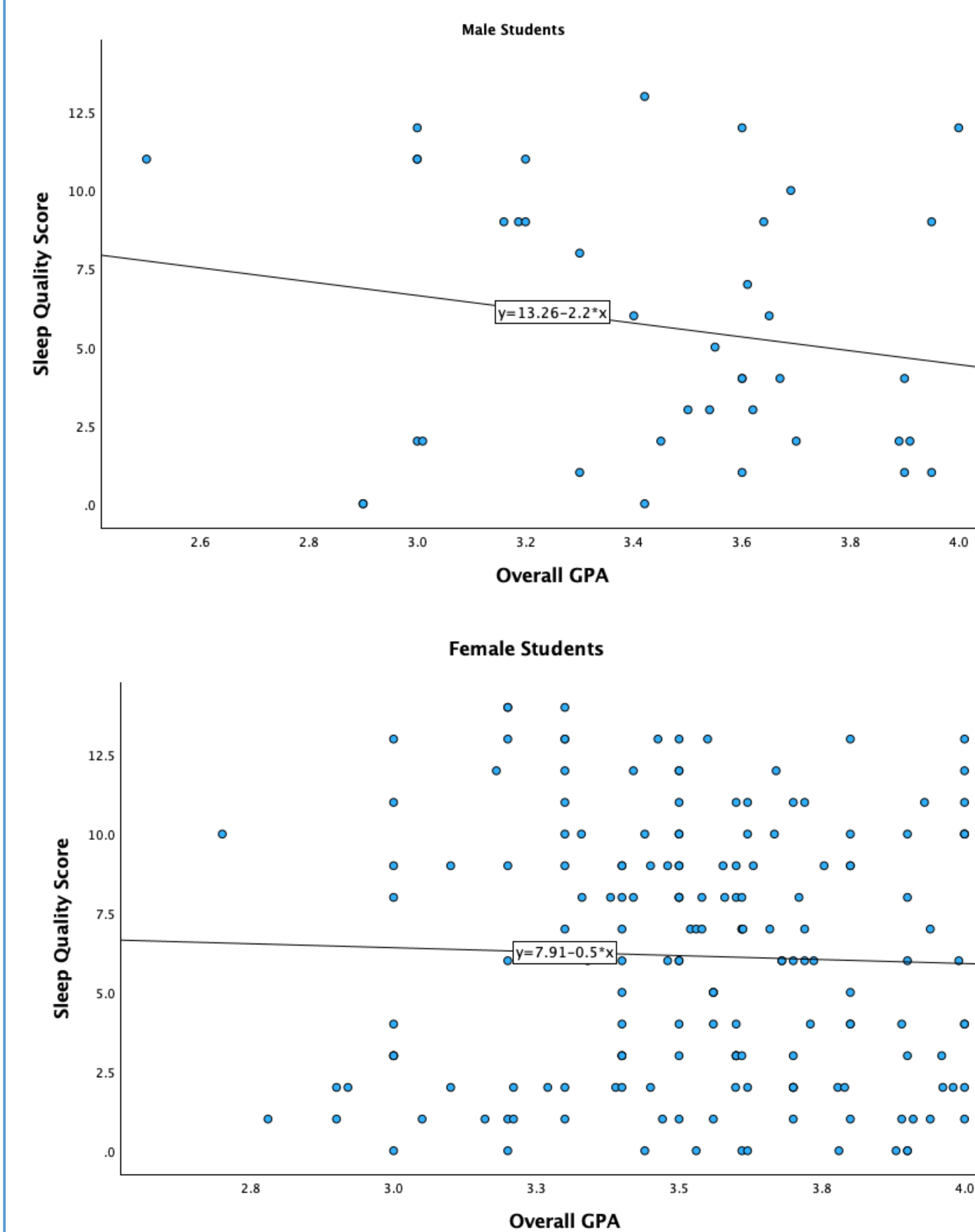


Figure 2. Scatter plot showing the correlation between sleep quality and overall GPA by gender

### Key Findings:

- The mean overall GPA is similar for female students (3.45) and male students (3.44)
- The mean GSQS score indicated greater sleep disturbance in female students (6.15) than in male students (5.68)
- An increase in sleep disturbance was weakly associated with a decrease in overall GPA, for both male and female students.
- The observed inverse association between sleep quality and overall GPA was not statistically significant.
  - Female: Pearson correlation coefficient:  $-0.036$  ( $p=0.643$ )
  - Male: Pearson correlation coefficient:  $-0.189$  ( $p=0.242$ )

## Conclusions

- We found a weak inverse relationship between sleep quality and academic performance
- However, the relationship was not statistically significant.
- Future research should consider examining:
  - A more diverse sample in terms of race, gender, and age.
  - How factors such as stress, study habits, environment, and past medical history may impact sleep quality and academic performance.
  - How academic tasks may affect sleep quality and, in turn, affect overall GPA.
- Researching the impact of sleep quality on student GPA can inform tailored interventions for future research, aiding in the development of effective strategies.

## References

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