

# In college students, how is quality of sleep associated with grade point average?

By: Kelsey Althoff, Kendra Babbitt, Ashley Dooley, Erika Gamble, Emily Long, Austin Popp, & Sarah Sherk

## Purpose

Simply put, the purpose of conducting this study was to determine how the quality of sleep of college students is associated with their grade-point averages. As nursing students, we understand that sometimes, in order to achieve the grade that we want in classes, that quality sleep must be sacrificed in order to complete assignments, study for exams, or anything else of the like. So, in order to truly evaluate if there is a positive correlation between better quality of sleep, and better grades, we decided to further investigate our peers in order to determine if this presumed association is true or not. We hoped that by conducting this study, we would be able to provide our fellow peers and nursing students with valuable information regarding how to most effectively achieve the grades that we want, all while achieving the most efficient amount and quality of sleep.

## Methods

This is a preliminary study that looked for a relationship between quality of sleep and grades. This project consisted of a weekly survey that participants filled out regarding the quality and quantity of the sleep they had on average from the week before. In the case that the participant forgot to submit information via survey for any

of the weeks of the study, the information for that week will not be included in the study and will, therefore, be void. Participants also were asked to anonymously submit their midterm GPA at the end of the study. The software Qualtrics was used to administer the survey to the participants. This study used a modified Pittsburgh sleep quality index (PSQI) survey to conduct our analysis. The responses will be analyzed with the Pittsburg Sleep Quality Index, to turn the qualitative responses into quantitative and measurable data. The quantitative value of the semester's midterm GPA will then be compared with the PSQI. The PSQI value points will be our independent variable and the GPA values will be the dependent variable which will be graphed on an XY axis to observe for an association (which can be seen on the bottom left of the poster). Only the investigators will have access to the information regarding identity and pilot study information/results. Participants entered their own self-identifying participant ID at the start of each survey that maintained consistent through the whole study, in order to maintain anonymous, Pilot study information will be stored on a password-protected computer of an investigator, for a period of 1 year. The informed consents of the participants will be stored until 3 years from the completion of the study. This study was conducted from two weeks prior to midterms, through the week of.

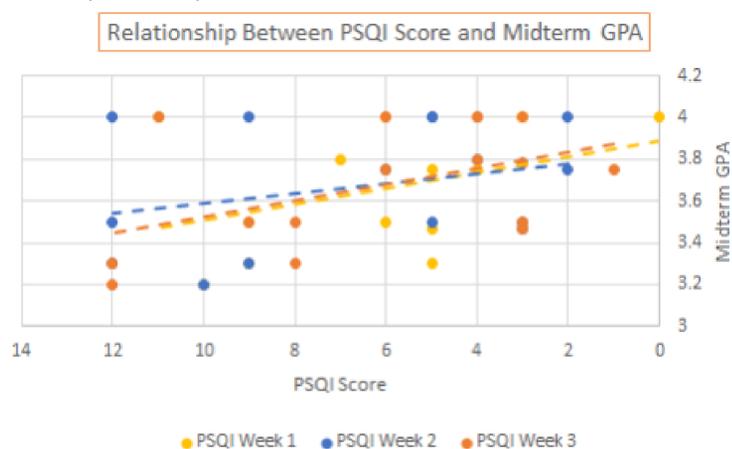
## Results & Data Analysis

There was a 62% completion rate of the study. The average midterm GPA was 3.678 with a standard deviation of +/- 0.275. The highest GPA was 4.0 and the lowest was a 3.2. The PSQI survey was used to measure PSQI scores of each participants for three weeks. PSQI week one measured sleep quality and quantity two weeks prior to midterms. The lowest PSQI score for week one was 0 and the high was 11. The average PSQI score was 5.733 with a standard deviation of +/- 2.932. The average PSQI score for week two (one week before midterm week) was 6.375 with a standard deviation of +/- 3.586. This was an increase from the week before, which was expected considering it is coined "hell week". The high was 12 and the low was 2. The final week average was 6.063 with a standard deviation of +/- 3.418. The lowest was a 1 and the high was 12. The PSQI scores over the three consecutive weeks of the study were compared to the final midterm GPA scores of each participant. Each survey participant was asked to provide a non-identifiable code at the start of each survey. Due to this, data for each participant was linked and allowed for comparison of data. No reputable association was found between GPA and quality of

sleep. It was hypothesized that a higher PSQI score would be associated with a lower GPA. The scores for each survey participant were charted onto a graph placing the PSQI scores on the X axis and the GPA scores on the Y axis in hopes of showing a proper inverse relationship between the two scores.

## Discussion, Limitations, & Conclusions

Overall, the results from the study do not exactly prove that a lower PSQI score is associated with a higher midterm GPA. The research shows that most the participants have over a 3.0 GPA regardless of their sleep quality. Possibly, if there were more participants, then the results may show more of an association in sleep quality and GPA but at this time it is hard to determine. An idea for future studies is to focus solely on more difficult undergraduate programs specifically, rather than just any type of college major. In conclusion, the original hypothesis is inconclusive because there were less than twenty participants and the results showed that they all had relatively high GPAs regardless of sleep quality.



Participant ID	PSQI Week 1	PSQI Week 2	PSQI Week 3	Midterm GPA
Mango	3	9	3	4
1234	6	5	4	4
2000213634	9	12	9	3.5
Fudgeballs	11	12	11	4
5647	6	5	8	3.5
2299	5	6	6	3.75
1128	5	9	8	3.3
Reigns69	3	5	6	4
92587	4	2	1	3.75
330	3	3	3	3.78
2000222898	7	4	4	3.8
214295	9	12	12	3.3
User1234	3	3	3	3.5
1228	0	2	4	4
404	10	10	12	3.2
1817	5	3	3	3.47

Completion rate: 0.61538461538