Sleep deprivation is an issue that affects students today. While some students may resort to caffeine or substance use to increase productivity, others forego sleep and consequently suffer from sleep deprivation. Increased stress and screen time both aggravate this issue. We hypothesize that there is a relationship between work demands related to a student’s choice of major and poor sleep quantity and quality. A 10-question survey was administered to 70 college students at Philadelphia University in March 2017 using Typeform, an online survey tool. Average response time was six minutes. The majority of the respondents were female (74%) and were either freshmen or sophomores (60%). Questions measured sleep quantity and quality, screen time before sleep, substance use and a rating of stress level, motivation, and satisfaction with academic performance. Incomplete surveys and students with diagnosed sleep disorders were excluded from analysis (n = 5). Demographic information such as major, year in college, and gender were used to compare sleep behavior. Each student’s answers were scored based on the Pittsburgh Sleep Quality Index (PSQI) in which any value over 5 is categorized as poor sleep quality. Results indicated that students studying in the architecture program had statistically higher scores compared to those in the Physician Assistant Program (t(31) = 1.713, p = 0.031587). In addition, design majors sleep significantly fewer hours per night compared to science majors (t(49) = 1.671093, p = 0.022712). While this is a small survey in proportion to the total student population of 2,798, it indicates that outreach to improve sleep strategies tailored to specific majors may be worth exploring further.

Materials and Methods

Seventy-one undergraduate students enrolled in Philadelphia University participated in a 35-question sleep survey through an online survey generator, Typeform. The survey consisted of three main parts: the Pittsburgh Sleep Quality Assessment (PSQI), quality of life, and demographics. The PSQI questions, which focused on sleep habits, were asked in reference to the past month. The participants scaled each question from 0-3. Subjects then answered questions regarding their level of stress, substance intake, and the use of screens before sleep. Participants gender, ethnicity, major and year in college was collected.

Results

- A total of 70 students were administered the survey designed for this study which included both the PSQI and many original questions designed by the researchers.
- The survey included 35 questions and took the respondents an average of approximately 6 minutes to complete.
- Of the respondents, 74% were female while 26% were male. The respondents reported their race as White/Caucasian (73%), Asian/Pacific Islander (3%), Black/African American (1%), and Hispanic/Latino (4%).
- The majority of the respondents were freshmen (43%), while sophomores accounted for 17%, juniors accounted for 27%, and seniors accounted for only 10% of all those surveyed.
- Thirty-six of the 70 students were enrolled in science majors while the remaining thirty-four were enrolled in design majors. The most common majors were reported by respondents to be Physician Assistant with 26% and Architecture 14%.
- The disparity between hours of sleep per night was statistically significant in showing that science majors attain more sleep than design majors on average. Using the Pittsburgh Sleep Quality Index (PSQI), it was found that architecture majors attain a lower quality of sleep compared to Physician Assistant majors.
- A total PSQI score of 5 or greater is considered poor quality sleep. 89% of the architecture and Physician Assistant students reported to have poor quality sleep.
- The results yielded from our study directly supported the hypothesis that design and architecture majors, on average, sleep less or are exposed to more stress than science majors.
- The data obtained from survey questions regarding the effects of caffeine use, time spent before bed, and drug use did not show any disparity between the majors or grade levels. These factors are already scientifically proven to negatively affect sleep quality and the majority of the respondents reported to have partaken in at least one, if not more, of the listed sleep inhibiting activities or substances. In a sleep study that compared the correlation between college students’ sleep quality and alcohol intake it was concluded that the higher weekly alcohol intake, the lower quality of sleep for the student (Kowey, Fayed, Gimrod, & Laddie, 2014). In a sleep study done by Hershey and Cheen it was found that caffeine and stimulants affect students’ quality of sleep. Students utilizing caffeine before bed reported feeling extremely drowsy and only 71% reported sleeping between 7-9 hours. Those who did not consume caffeine reported feeling less drowsy and actually slept 5-7 hours (Hershey & Cheen, 2014).

Discussion and Conclusion

The disparity between hours of sleep per night was statistically significant in showing that science majors attain more sleep than design majors, almost all of the respondents to the survey at large were classified to have "poor sleep quality" according to the criteria of the Pittsburgh Sleep Quality Index (PSQI).

The majority of the respondents to the survey reported to have partaken in at least one, if not more, of the listed sleep inhibiting activities or substances. This disparity between hours of sleep per night was statistically significant in showing that science majors attain more sleep than design majors, almost all of the respondents to the survey at large were classified to have "poor sleep quality" according to the criteria of the Pittsburgh Sleep Quality Index (PSQI).

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