



Background

- As technology becomes more prevalent in academic settings, college students are exposed to prolonged periods of screen time¹
- Increased screen time usage correlates with:
 - poorer health
 - shorter amount of sleep
 - worsened sleep quality²
- Regular, good-quality sleep is associated with:
 - better academic performance
 - better physical and mental health
 - overall better well-being³
- Studies have shown a relationship between screen time and poor sleep quality, but do not address different ways to engage on the screen

Objective

To determine how screen time spent on different media platforms can influence the quality and duration of sleep in college students at the University of California, San Diego (UCSD).

Methods

- A questionnaire addressing social media usage and sleep quality was developed based on the exposures/outcomes and the Pittsburgh Sleep Quality Index (PSQI)⁴
- The Qualtrics survey was distributed through social media platforms and mass email to public health students at UCSD for 3-4 weeks (n=162)
- Exposure: total screen time and screen time spent on different media platforms
 - Social media, entertainment, games, productivity/studying**
- Outcome: students' sleep quality
 - Measured in duration, time to fall asleep, ability to stay awake**
- Kendall Tau statistical test was used to find the p-value for statistical significance

Results

Table 1: Collected Demographics

Gender:	%
Male	23.91
Female	72.46
Non-binary/ non-conforming:	2.9
Prefer not to respond	0.72
Age:	
18 and under	1.45
19-21	56.52
22-24	37.68
25-27	0.72
28 and over	3.62
Grade Level:	
1st year	4.29
2nd year	10.71
3rd year	25
4th year	49.29
5th year	3.57
Graduate or Professional Level	7.14
Race:	
White	16.89
Hispanic, Latino, or Spanish	22.3
Black or African American	1.35
American Indian or Alaska Native	0.68
Asian or Asian American	56.76
Native Hawaiian or other Pacific Islander	0.68
Some other race or ethnicity	1.35

Figure 1: Distribution of Screen Time Use

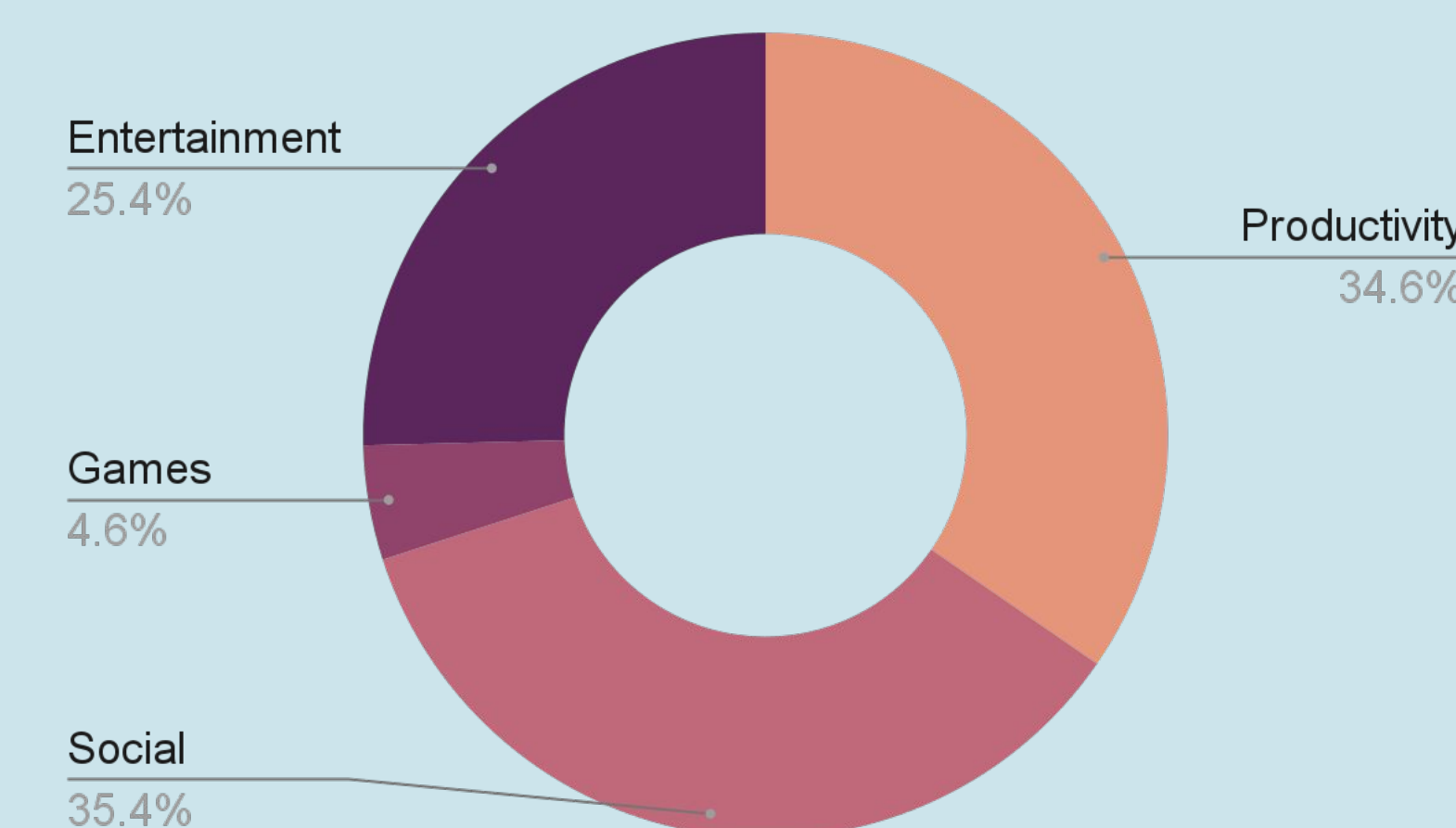


Figure 2: Most Reported Screen Time

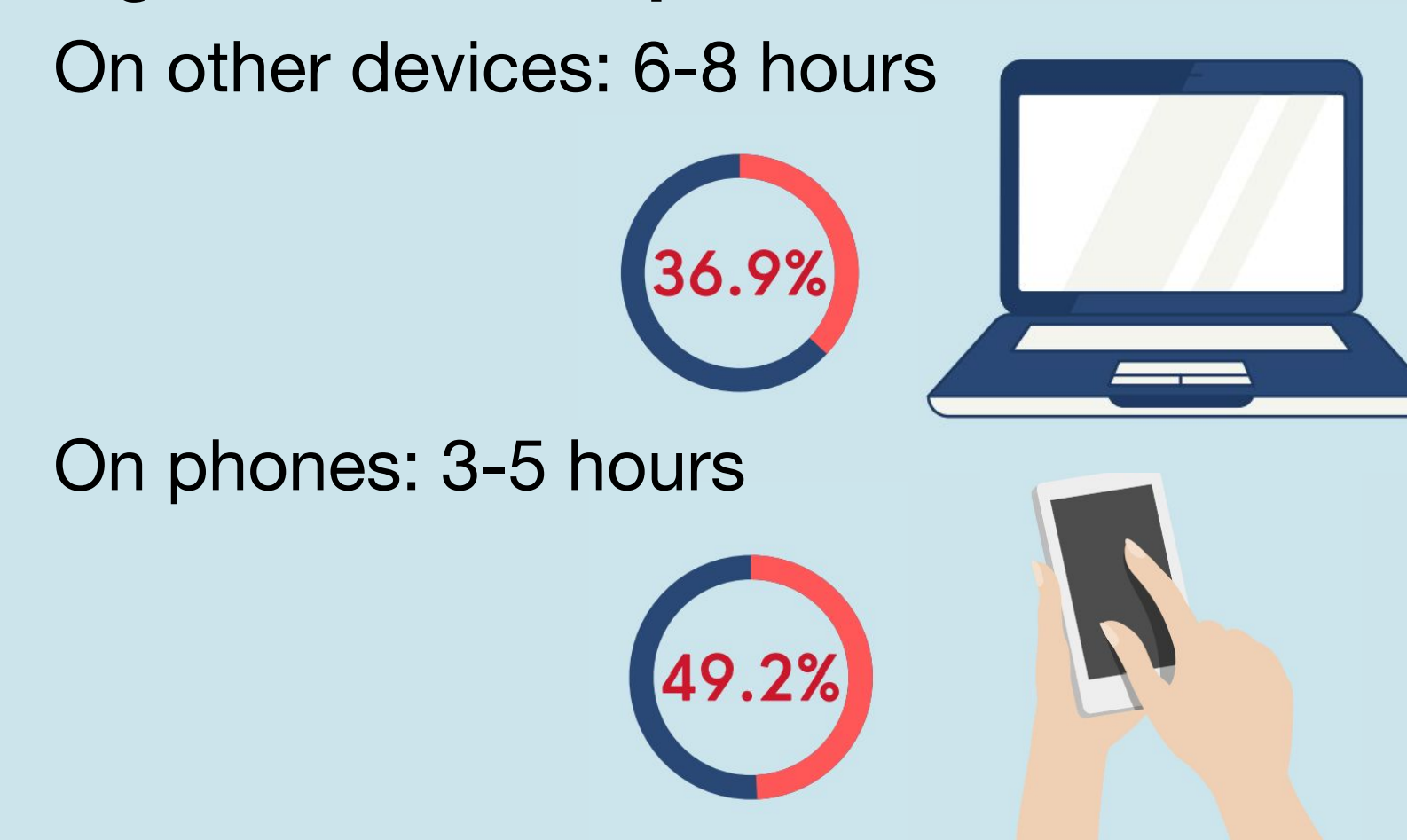


Figure 3: Screen Time on Phone

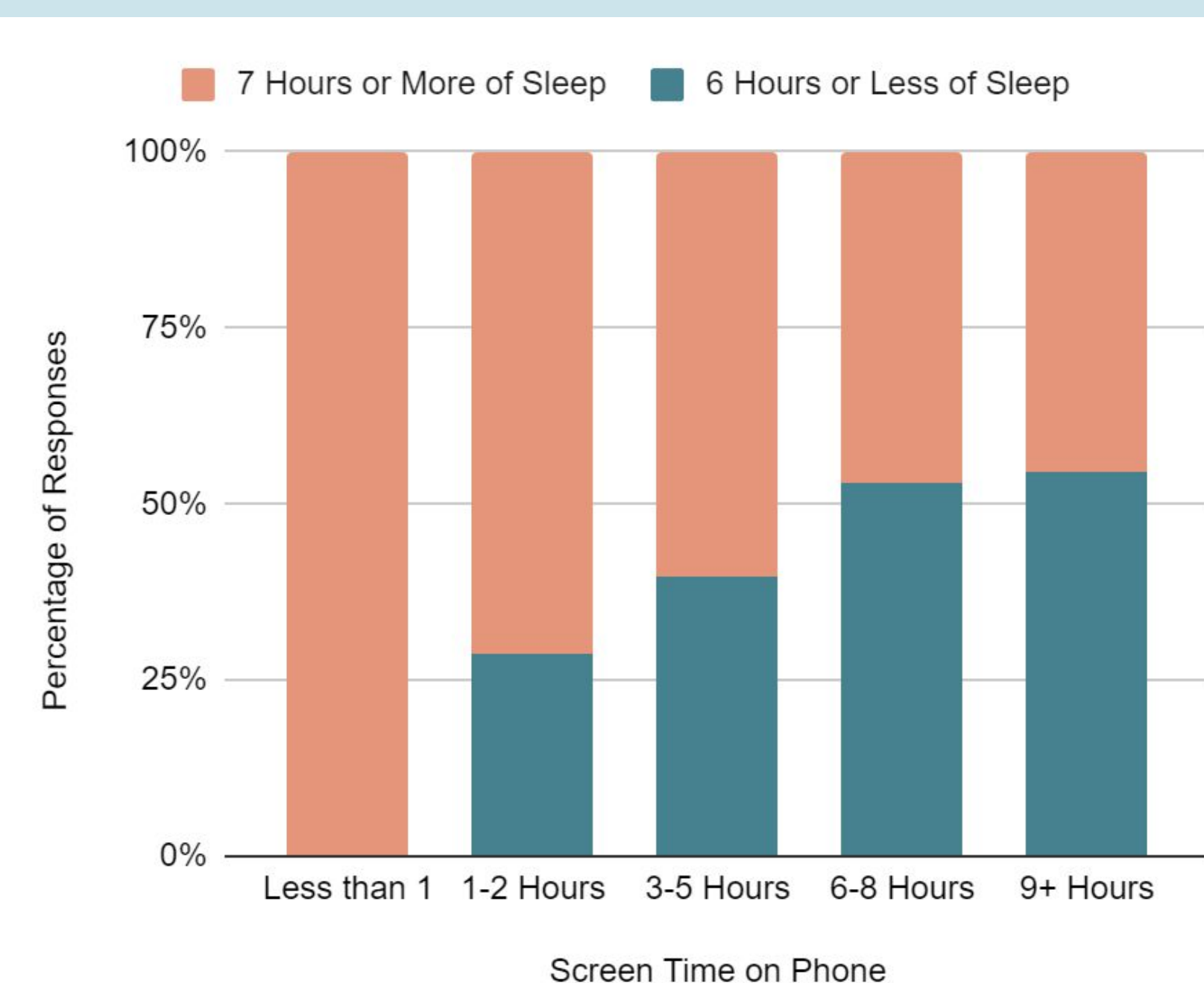
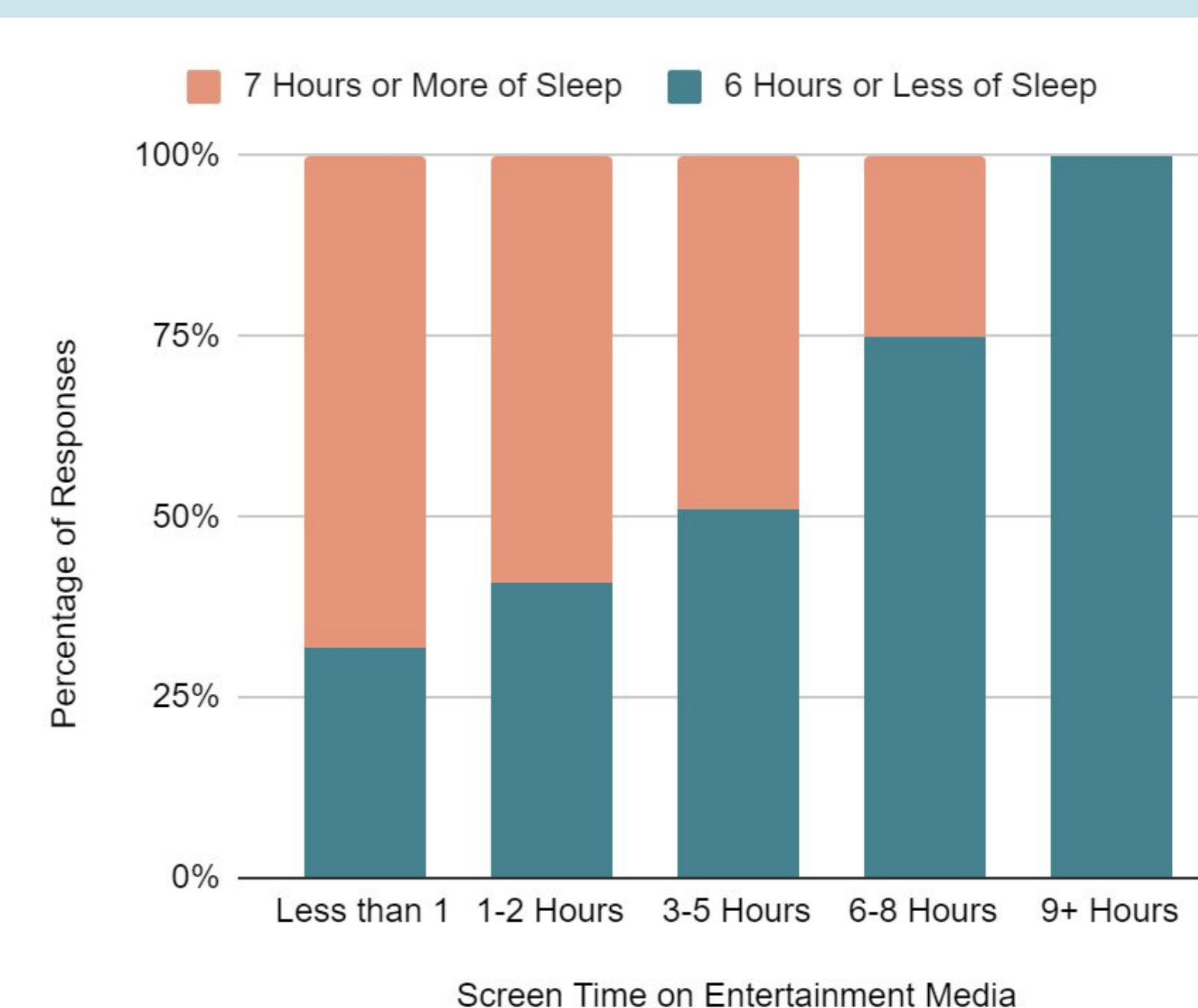


Figure 4: Screen Time on Entertainment



As phone screen time increased, a greater percentage of participants reported sleeping less. This trend is especially seen in hours spent on entertainment media platforms (p=0.031).

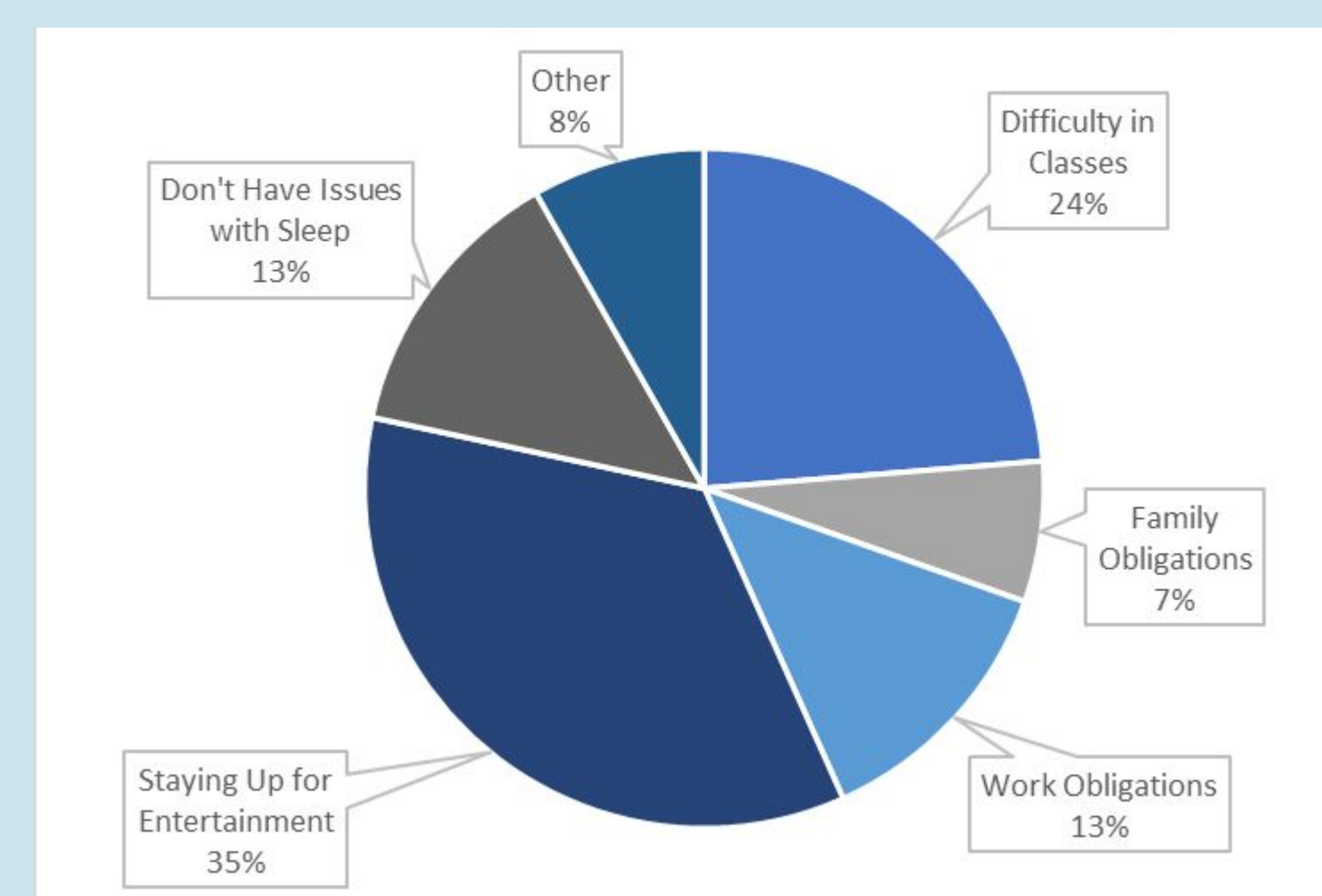


Figure 5: Participant Perceived Reason for Less Hours of Sleep Matches the Collected Data

Conclusion

- There is a significant relationship between time spent on entertainment media and sleep**
- No significant relationship between:
 - Screen time on the phone vs. sleep (p=0.056) and other devices vs. sleep (p= 0.960)
 - Time spent on other media platforms and sleep
- Overall trend was that more time spent on the phone is associated with less sleep

Policy Implications

- Conduct more studies that engage students from other universities all over the country to better understand how time spent on different medias could affect sleep quality
- Develop content (i.e. brochures, posters, emails) that UCSD uses to bring awareness to reducing screen time and encourage limiting screen time/taking breaks

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References

- Zhang, M. X., & Wu, A. M. S. (2020). Effects of smartphone addiction on sleep quality among Chinese university students: The mediating role of self-regulation and bedtime procrastination. *Addictive behaviors*, 111, 106552. <https://doi.org/10.1016/j.addbeh.2020.106552>
- Christensen, M. A., Bettencourt, L., Kaye, L., Moturu, S. T., Nguyen, K. T., Olgin, J. E., Pletcher, M. J., & Marcus, G. M. (2016). Direct Measurements of Smartphone Screen-Time: Relationships with Demographics and Sleep. *PloS one*, 11(11), e0165331. <https://doi.org/10.1371/journal.pone.0165331>
- Fischer, D., McHill, A. W., Sano, A., Picard, R. W., Barger, L. K., Czeisler, C. A., Klerman, E. B., & Phillips, A. J. K. (2020). Irregular sleep and event schedules are associated with poorer self-reported well-being in US college students. *Sleep*, 43(6), zsz300. <https://doi.org/10.1093/sleep/zsz300>
- Pittsburgh Sleep Quality Index Instructions. (n.d.). Retrieved February 27, 2023, from https://www.sleep.pitt.edu/wp-content/uploads/Study_Instruments_Measures/PSQI-Instrument.pdf