

College Student Health: Stress and Sleep

Rivonda Hirmiz



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Marygrove College
University of Detroit Mercy
Wayne State University

Graduate Student Mentors:

Lingfei Tang, Wayne State University Department of Psychology
Monika Sata, M.A., UDM Department of Psychology

Faculty Mentor: Kristen Abraham, Ph.D., UDM Department of Psychology

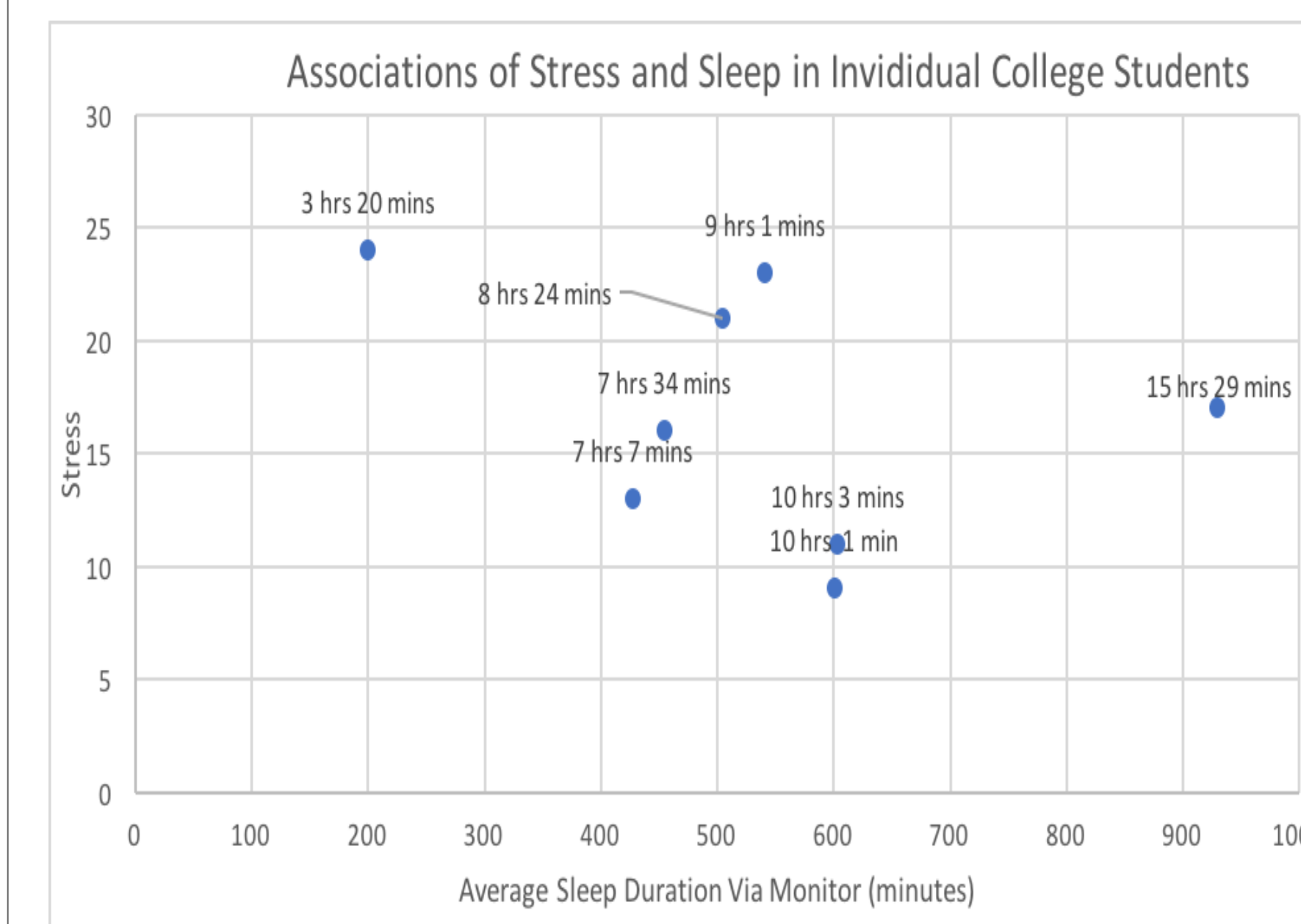
Background

- College students often face stress in their every day lives, whether it comes from family problems, financial situations, or even thinking about upcoming exams. This type of stress can be followed by some type of health problem or impairment like the lack of sleep (Murphy & Archer, 1996.)
- In a study previously done, it was found that the number of students who reported to have sleeping problems increased by more than 25% a month before an exam (Zunhammer, Eichhammer, & Busch, 2014).
- Research has showed that college students who reported lower positive and higher negative emotional states throughout the day usually considered their sleep to be of poor quality (Simor, Krietsch, Koteles, & McCrae, 2015.)
- Prior studies show that fatigue can follow some type of perceived stress (Kato et al., 2007.)

Present Study

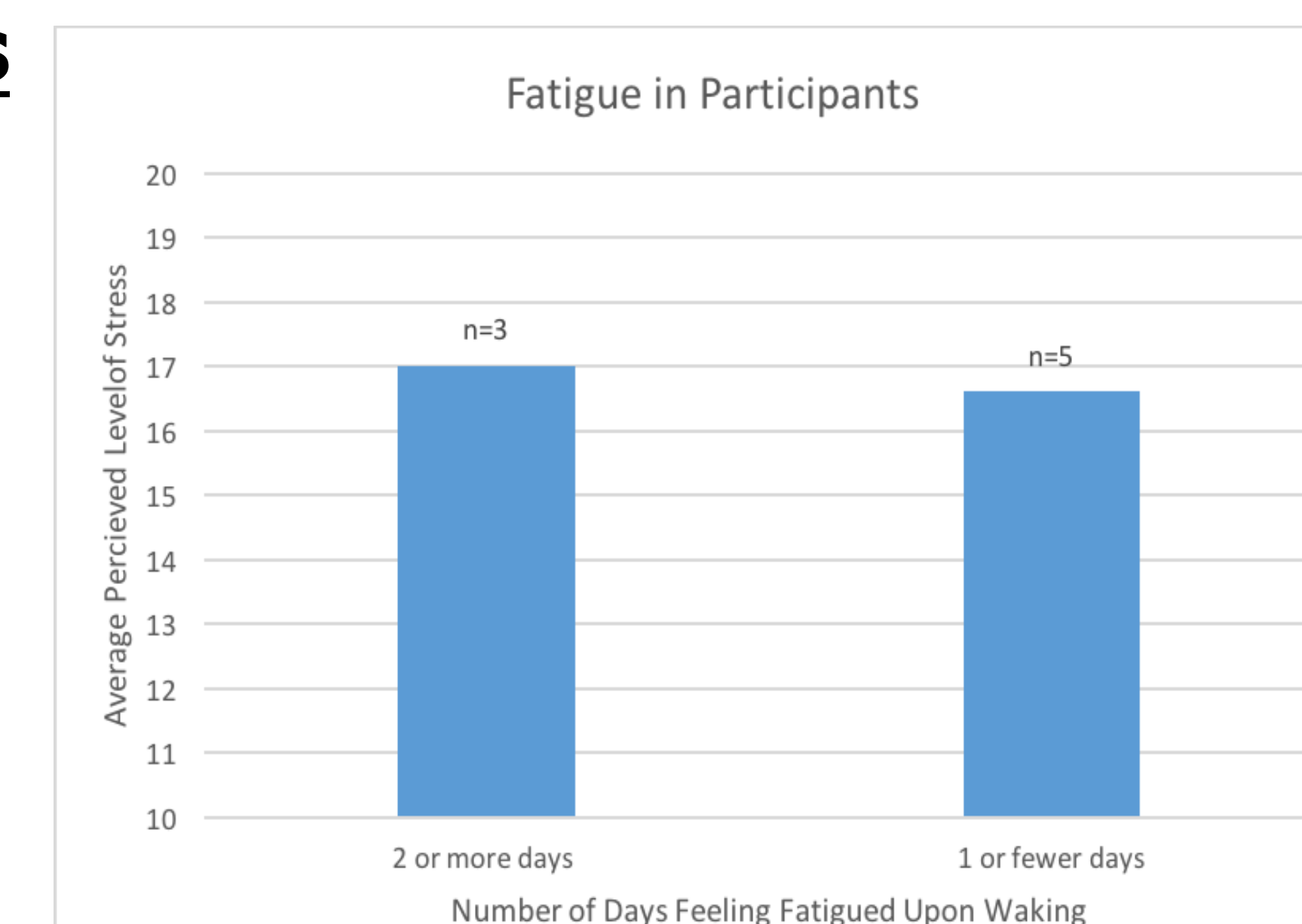
Research Question: Does college students' level of stress predict the amount of sleep they are receiving and how they feel waking up?

Hypothesis: College students who report higher levels of stress will receive fewer hours of sleep over the four nights and will be more likely to report feeling fatigue upon waking up than college students who report lower levels of stress.



•In this figure, stress and sleep of the participants (N=8) are compared. Pearson's correlation (r) was $-.357$; it shows a weak to medium correlation between the two factors. The average mean stress score of the participants was 16.75 and the average minutes of sleep was 532.38 minutes (8 hours and 53 minutes).

Results



• In this figure, the average level of perceived stress and number of days they self reported fatigue were the two factors that were compared. The stress score of participants who reported feeling fatigued at least two days upon waking up was 17.00 while the stress score of participants who only reported feeling fatigue one or fewer days was 16.60.

Methods

Sample

- Participants (N=8) were recruited through undergraduate level classes, and the study took place at the University of Detroit Mercy.
- The participants were 87.5% female (n=7) and the mean of their ages was 19 (n=8). In this study, 50% of the participants identified as Caucasian/European (n=4). The other 50% of the participants identified themselves as Middle Eastern, African American, Asian, and Hispanic.
- The present study used data from baseline participant self-report measures on stress.

Procedure

- The Institutional Review Board approved this study.
- After participants were recruited and showed interest in the study, they were invited to give their consent to be a part of the study.
- Participants were undergraduate students from the University of Detroit Mercy and all had access to a smart phone.
- Participants came to the University and gave their consent, completed the self report measures on stress and demographics, and were given the sleep monitor and sleep log.
- A brief explanation on how to pair the sleep monitor to the participants' phones, and how to put the sleep monitor in and out of sleep mode was given.
- Participants used the sleep monitor and sleep log for four nights to measure how long their sleep duration was, the length of their deep and light sleep, and how they felt waking up regarding fatigue.
- Upon returning the sleep monitor and log, participants were compensated a 25\$ American Express gift card for their participation.

Measures

Perceived Stress Scale (Cohen et al., 1983)

- Assessed participants' levels of stress they are currently experiencing in their everyday lives using 10 items.
- Higher scores indicate higher levels of stress.

Self-Reported Hours of Sleep (National Heart Blood and Lung Institute)

- Measure used to calculate self-reported hours of sleep, and how participant felt waking up.
- Records of sleep wake up times, sleep bed times and feeling upon waking up regarding fatigue.

Hours of Sleep Measured by Sleep Monitor

- BITWATCH Activity Tracker Bracelet
- Measure used to calculate sleep duration, deep sleep duration, and light sleep duration.
- Worked by putting sleep monitor in and out of sleep mode.

Discussion

- In this study, the average stress score of the 8 participants 16.750 was slightly higher than the average stress score of 14.2 which was found in a prior study of 645 young adults (Cohen & William, 1988.)
- The weak to medium correlation between stress and sleep shows that among college students higher perceived stress was associated with fewer hours of sleep per night while lower perceived stress was associated with more hours of sleep per night.
- Students who reported waking up feeling fatigued more than half of the days of the study (n=3) had a slightly higher average stress score than students who only reported feeling fatigued one or fewer mornings (n=5). Although the difference is a very small number, it may suggest that students who report feeling fatigue more often than others have higher perceived stress. Future studies may need to be done with a larger sample of participants to show if the difference in stress of more fatigued students versus less fatigued students accurately represents the population of college students.

Limitations

- The first limitation in this study was that there were only eight participants, and there was not a diverse population regarding gender or racial backgrounds.
- Another limitation in this study had to do with the amount of time that was used to measure sleep duration. Only measuring sleep duration for four days may not accurately represent the participants' usual sleep duration.
- Naps were not included with total sleep durations, which could of increased the total hours of sleep of some participants who did nap.

Implications

- Future studies should include a larger number of participants and participants that are more diverse in race and gender.
- In order to have more accurate results, future studies should increase monitoring sleep from four nights to a longer period of time and should have a better measure to accurately recorded level of fatigue.
- College students who report higher levels of stress should try to find coping methods that lower levels of stress and hopefully increase sleep durations and decrease feelings of fatigue.

References – On Handout

Acknowledgements

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