

Sleep Hygiene Among Students

Senior Project

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By

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**Abstract**

The purpose of the research was to learn about sleep hygiene among students. My goal was to understand how sleep quality affects students in their everyday life and bring awareness to students about sleep hygiene. I found solutions that will help students with any problems they may have regarding sleep.

 *Keywords*: Sleep quality, Sleep hygiene, caffeine, electronics, academics

**Sleep Hygiene Among Students**

I became interested in sleep when I took Dr. Deuel’s Guiding Young Children class. In that class we learned about various topics related to counseling and guiding young children. One day we took an interactive survey from the National Sleep Foundation as a class on our knowledge of sleep. I answered almost every question wrong. For example, the things I thought were good signs of sleep (e.g., snoring and sleeping 6 hours) were actually bad signs of sleep (National Sleep Foundation, 2022). That is when I realized I knew almost nothing about sleep.

I started struggling with sleep during the Fall 2020 semester. I would go to bed at a decent time but would not fall asleep until four or five in the morning. This happened quite frequently, until I decided to use that time productively (e.g., schoolwork, cleaning, taking a shower). That became my routine. I had classes in the morning, so I did not receive enough sleep, and I started to feel the effects of my poor sleep hygiene. I would start to fall asleep in class. I could not control my emotions. I was moody. My work was not up to par. I could feel my brain functioning decline, so I began to research ways to fix my sleep schedule. My therapist and I created a bedtime routine for me to follow which included journaling, drinking chamomile tea, doing a relaxation technique (e.g., breathing, watching ASMR [autonomous sensory meridian response], body stretches), and going to bed before 12am. I still struggle with going to bed before 12am, but now I can fall asleep quickly if I drink chamomile and lavender tea while listening to ASMR. After I found a solid routine, I started to wonder if other students struggled with sleep. My personal experiences, geniuine interest and concern for the well-being of my fellow students are the motivations behind this honors project.

**Stakeholders Interview**

When looking for stakeholders, we wanted to find a diverse group of people around the University had have an interest in sleep hygiene among students. It is important to talk with stakeholders, because they support and give value to research. They are the people who will benefit from the research. The first person I sought was Charla Suggs, because she is the Interim Director of Counseling and Psychological Services. I thought that she would know a lot about student struggles with sleep, as sleep problems are often comorbid with other physical and mental health disorders. When I interviewed Mrs. Suggs, it was immediately apparent that she was knowledgeable on the topic. She discussed how electronics and technology were a big factor in students sleep problems. Students want to stay connected to technology at all times, and it keeps them from getting enough sleep. Students do not make sleep a priority, like they would for other things such as oral hygiene. She connected oral hygiene and sleep hygiene because people put more importance over oral hygiene than they would with sleep hygiene. It seems like students go to sleep when they have nothing better to do, but they should make it a priority—because it is one.

Since this is an Honors College Project, we wanted to include someone who works with honors students in their day-to-day lives. We thought of Dr. Joshua Kalin Busman, who is the Assistant Dean of the Esther G. Maynor Honors College. He started off our interview by saying college students need more sleep. He specifically mentioned that music majors have concerts late in the evening, which include setting up and putting away the instruments. This causes them to sleep later. He also mentioned students with part-time jobs sleep less. Dr. Busman suggested teaching sleep hygiene in freshman seminar classes. I think this is a great idea? This would ensure that students would learn about healthy sleep habits when they come into college.

I then met with my mentor and the person who initially spiked my interest in the topic of sleep hygiene, Dr. Lois-Lynn Deuel. She echoed Dr. Busman’s concern for working students. She added that her high-performing students are most likely to get less sleep and show the effects of poor sleep hygiene in their behavior in the classroom. These behaviors include: tardiness (sleeping in), forgetting items needed for classtime activities, yawning, nodding off, brain fog/confusion when called upon, and laying their heads down to rest during independent or group activites.

Lastly, I met with Dr. Joanna Hersey who is the Associate Dean of Student Success and Curriculum, College of Arts and Sciences, who is also a music professor. She had a lot to say from her experiences of being a professor and a mother. She started off by contrasting the differences between environments at college and home. Students may sleep later in the day because they don’t have that authority figure telling them they need to be productive. She also emphasized how important schedules were for students. Some students have drastic differences in their schedules. For example, students may have early classes on M/W/F and late classes on T/TR. The variability of wake up times on consecutive days causes an uneasy transition between school days. This makes it harder for them to find a healthy sleep schedule. A solution that Dr. Hersey developed was to remind her students ahead of time that they have assignments coming up. Especially, assignments that would take longer than a day to do. This will prevent students from staying up all night to complete an assignment at the last minute.In the past, Dr. Deuel has used the Reminder App (like for medical appointments) to help students remember due dates (it sends them text notices days and hours in advance of a due date). Now, she uses Reminder Slides at the beginning and end of every lecture to remind students about immediate and long-term due dates. Lots of research shows that distributed learning, which is learning little by little everyday, produces better outcomes that cramming and doing everything at the eleventh hour.

**Sleep Quality**

Sleep quality refers to two things 1) the number of hours a person sleeps and 2) how well rested a person feels when they wake up (National Sleep Foundation, 2022). Adults and teenagers need anywhere from seven to ten hours to feel well rested (Ryan, 2022). There are four factors that are generally used when it comes to measuring sleep quality. They are sleep latency, sleep waking, wakefulness, and sleep efficiency. Sleep latency is how long it takes someone to fall asleep. Sleep waking is how often someone wakes up while sleeping. Wakefulness only refers to people who wake frequently during the night. It measures how long someone stays up after waking during the night. Sleep efficiency is the amount of time someone is sleeping compared to the amount of time they lay in their bed. Essentially, good sleep quality would be not waking up while sleeping and being asleep while in bed (National Sleep Foundation, 2022). We want students to fall asleep quickly and stay asleep for the entire night, without waking.

**Effects of Poor Sleep Quality**

**Academics**

Students tend to do better in school when they sleep well and receive enough sleep (Driller et al., 2022; Faris et al., 2017; Thacher, 2008). They are more likely to be motivated and participate in school and classroom activities when they receive a sufficient amount of sleep (Scullin, 2019; Thacher, 2008). However, studies have reported that at least half of students have reported being tired during the day (Drazdowski et al., 2021; Driller et al., 2022; Ryan, 2022; Thacher, 2008). Most students have reported receiving less than eight hours of sleep, which is the recommended amount of sleep for teenagers and young adults (Ryan, 2022; Scullin, 2019). Research also shows that both high school and college students would benefit from school/classes starting later (Owens et al., 2014). Due to their circadian rhythms, teenagers and young adults tend to stay up and wake up late. However, studies show that first-year students who consistently go to bed early have better academic grades than students who go to bed at a later time. They have also found that even one extra hour of sleep helps students tremendously (Driller et al., 2022; Scullin, 2019).

Sleep among students needs to be consistently good or bad to affect their grades. If a student sleeps poorly one night out of the month, it will not negatively affect their general sleep quality. Researchers also found that waking up throughout the night has a negative effect on sleep (Driller et al., 2022; Scullin, 2019). Students have reported that academic and emotional stress contribute to poor sleep quality (Drazdowski et al., 2021). As an outcome of poor sleep quality, students are more likely to be at risk of car crashes and delinquent behaviors (Owens et al., 2014; Konjarski et al., 2018; Ryan, 2022; Scullin, 2019).

**Health and Mental Health**

Students who are sleep deprived have an increased susceptibility to illness, infection, and an impaired immune system (Ryan, 2022; Scullin, 2019). Receiving an insufficient amount of sleep can cause weight gain due to eating unhealthy food. It is recommended to eat earlier in the evening, because the digestive system slows down during sleep which contributes to waking up while sleeping (Suni, 2022). Studies show that sleep problems are correlated to migraines, gastrointestinal diseases, and sexually transmitted diseases (STD; Schlarb et al., 2017).

A significant amount of research shows that students who have sleep problems are more likely to have mental health problems (Schlarb et al., 2017). Receiving an insufficient amount of sleep can affect students negatively. These affects may include depression, anxiety, decline in cognitive abilities, and reduced logical reasoning (Brown et al., 2002; Drazdowski et al., 2021; Konjarski et al., 2018; Owens et al., 2014; Ryan, 2022; Scullin, 2019; Thacher, 2008). Studies have shown that the mood of students is also affected by poor sleep quality. They are more likely to feel sad and angry, and are less likely to feel happy when sleep deprived (Konjarski et al., 2018).

**Factors Contributing to Poor Sleep Hygiene**

**Schedule**

Students sleep schedules can vary from day-to-day, sometimes drastically. During the week, students may sleep fewer hours than they would during the weekend (Brown et al., 2002: Driller et al., 2022; Owens et al., 2014). Research shows that inconsistent sleep schedules result in lower GPAs (Ryan, 2022; Schlarb et al., 2017). Most students have reported some sleep difficulties, while others reported severe sleep difficulties throughout the night (Brown et al., 2002). Studies over the years suggest that the average amount of sleep a student receives is declining (Brown et al., 2002; Driller et al., 2022). This is something that all of our stakeholders observed, as well.

**Socioeconomic Status**. Studies have found that there is a correlation between low socioeconomic status and amount of sleep during the week and weekend. Students in a low socioeconomic status are often exposed to unsafe, loud, and overcrowded environments. Therefore, students who live in a low-income environment do not receive a sufficient amount of sleep (Brown & Low, 2008; Owens et al. 2014). Children who are in this environment deal with an increased number of problems such as bed-wetting, waking up throughout the night, daytime sleepiness, and not sleeping at bedtime. These problems are not only evidenced at bedtime, but they carry into academic success (Brown & Low, 2008).

**Work**

Working while in school, can cause a student to have an unstable sleep schedule (Owens et al. 2014). Students who work are more likely to have problems sleeping due to irregular work schedules, long hours, working nights and weekends (Chiang et al., 2020). Studies show workload is the main cause of sleep deprivation among college students. Workload includes anything from extracurricular activites to a job (Ezer, 2017). Almost half of students between the ages of 18 and 24 have reported being employed during college (Chiang et al., 2020). Some students work from 20 hours which is considered a part-time job, to 40 hours which would be considered a full time job (Ezer, 2017). Students with 20 or more work hours are more likely to suffer from insomnia (Chiang et al., 2020).

**Work & Academics**. The stress of school work and a job cause difficulty sleeping (Chiang et al., 2020). Some students have reported being so tired from work that they are unable to pay attention during class (Ezer, 2017). Some studies have linked GPA to hours worked at a job. Students who work more than 20 hours a week are more likely to have a lower GPA. On the other hand, students with higher GPAs also have poorer sleep quality. However, they may do things to counteract their daytime sleepiness, such as consuming caffeine. Researchers suggest the best way to experience good sleep quality is to have a balanced schedule (Chiang et al., 2020).

**Caffeine**

Caffeine is often used to boost energy and/or to reduce sleepiness—and it is effective in this way, at least in the short term. Caffeine can be consumed through various ways (e.g., coffee, espresso, energy drinks, tea, etc.; Kerpershoek et al., 2018). It has become more common for young adults to consume caffeine. Students are more likely to be dependent on caffeine when they have not received a sufficient amount of sleep (Faris et al., 2017; Owens et al. 2014). Consumption of caffeine has been shown to negatively affect student’s sleep. In addition, the time of day that caffeine is consumed has an impact on sleep. When caffeine is consumed later in the day, it affects sleep worse than if it was consumed earlier in the day (Faris et al., 2017; Kerpershoek et al., 2018). Research suggests drinking coffee at least eight hours before planning to go to bed, to allow it to completely get out of your system (Ryan, 2022).

**Illicit Substances**

Sleep deprivation can also increase the use of alcohol and drug consumption (Brown et al., 2002). Contrary to popular belief, substance use has a negative effect on sleep. Students who are dependent on an illicit substance are more likely to have poor sleep quality (Schlarb et al., 2017). However, it may be hard for students to decrease their substance use, which would benefit their sleep (Drazdowski et al., 2021). The results of marijuana use among students has been negative. It has been linked to an increase in depression, lack of motivation in students, and overall poor academic performance. Dr. Deuel has observed at least one or two students regularly attending each of her classes high. With increased acceptance and legalization of marijuana for recreational use, medial use, and self-medicating/relaxing, this is uncharted terriortory for professors. Most of these students are performing poorly academically. Studies have found that as other substances are being used, marijuana use increases, as well. Numerous studies have demonstrated that marijuana use causes and/or increases sleep disturbances. It is more beneficial for student sleep quality to completely stop consuming marijuana than it is for them to continue/decrease the amount used (Drazdowski et al., 2021).

**Electronics**

 Most students have at least one electronic device in their bedroom, which would include cellphones, tablets, video game consoles, televisions, and computers. Electronic use before bedtime results in sleeping later, poorer sleep quality, and more daytime sleepiness. When students use an electronic device, the blue light from the electronic keeps them awake, which disrupts their sleep. It triggers their circadian rhythms to expect morning and to gear for the activities of the day, instead of gearing down to rest and replenish the brain. When the light is brighter, it has a negative effect on sleep (Owens et al., 2014; Ryan, 2022).

**Solutions**

**Exercise**

Studies show that exercising daily improves sleep quality. Exercising in the morning after waking up gives students energy, and helps students sleep better at night (Ryan, 2022). Taking short walks during the day as well as light stretching burn calories and help digestion, which contribute to better sleep (Suni, 2022). During our interview, Dr. Deuel emphasized the importance of the relationship between exercise and mental health. She mentioned that there is a positive correlation between exercise and mental health. People who exercise are less likely to have mental health problems, like depression and anxiety—which are increasingly common in UNCP students. As a solution, Dr. Deuel mentioned research which shows exercise as a treatment for depression. Exercise works at least as well as medication or talk therapy (probably by releasing endorphins which make people feel good).

**Sleep Environment**

 Students who live in a dormitory or student housing may have a more difficult time going to sleep due to external factors such as a loud roommate, too much light, and an uncomfortable bed, and an unfamiliar environment. Some solutions to a sleeping in a dorm room would be to get a mattress topper, weighted blanket, eye mask, ear plugs and/or play soft music in the background (Ryan, 2022). Dr. Busman suggested communicating with roommates beforehand to establish quiet hours, work times, and sleep habits. It is also helpful to have a friend group with a similar sleep schedule, so there are not any conflicts on when to sleep or stay up.

 **Electronics**. Students should turn off their cell phones anywhere from an hour to thirty minutes before they plan on going to bed and read a book instead (Ryan, 2022). Students should complete all homework and assignments at least two hours before bed, so the body has time to relax and prepare for bed. Mrs. Suggs recommended putting on a blue light filter or nightshade on electronic devices to keep the body from perceiving the bright light from electronics as daytime light. Research suggests to quickly go back to sleep after waking up to use the restroom or get a snack (Suni, 2022). Refrain from checking electronic devices in-between sleep because it sends the retina the wrong message (that it is morning and time to wake up).

**Relaxation Methods**

Studies show that using relaxation techniques and practicing mindfulness result in a better sleep quality (Schlarb et al., 2017). Dr. Hersey recommended journaling to help relax students who may be stressed, so they sleep better throughout the night. Along with journaling, Dr. Deuel mentioned that meditating before bedtime can relieve the effects of stress, depression, and anxiety. This allows students to have an overall better sleep quality. Meditation is known for quieting the mind and body, which can be useful to overworked college students.

**Conclusion**

 Sleep quality contributes to academic success, a positive mental health status, and healthy existence in students. Sleep hygiene is not always a priority among students. However, these factors go together, which mean if students are stressed or overworked, then that will result in poor sleep quality. It is important for students to realize how important sleep is for our mind and well-being. There may be difficult environments for students to adapt to such as a dormroom or low-income neighborhood. Therefore, students must find ways to accommodate to their environment in order to receive the best quality of sleep. My research has shown that maintaining an everyday schedule allows students to balance their everyday tasks to ensure that they receive a sufficient amount of sleep. There are also other solutions that contribute to better sleep quality, such as journaling, wearing eye masks, and listening to calming music.

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**Appendix**

National Sleep Foundation Sleep IQ Quiz Answers

1. During sleep, your brain rests.

False – The body rests but the brain remains very active,

2. You can learn to function normally with one or two fewer hours of

sleep than you need.

False– Sleep is a biological need although actual amount needed seems genetic.

3. Boredom makes you feel sleepy, even if you have had enough sleep.

False – Boredom does not cause sleepiness but rather unmasks it.

4. Resting in bed with your eyes closed cannot satisfy your body’s need

for sleep.

True – Sleep is an active and biologically necessary process.

5. Snoring is not harmful as long as it doesn’t disturb others or wake you

up.

False – Snoring may be a symptom of sleep apnea, a serious disorder.

6. Everyone dreams nightly.

True – There is a variation but everyone dreams every night.

7. The older you get, the fewer hours of sleep you need.

False – Sleep remains unchanged throughout adulthood although older people wake more frequently.

8. Most people don’t know when they are sleepy.

True – People are not good judges of when they are sleepy.

9. Raising the volume of your radio will help you stay awake while driving.

False – The only short-term solutions are a short map or caffeine.

10. Sleep disorders are mainly due to worry or psychological problems.

False – Actual sleep disorders have a variety of causes.

11. The human body never adjusts to night shift work.

True – Your circadian rhythm is set by light and dark cycles, therefore you are sleepy during midnight to 6 a.m. and sleep is difficult during the daylight hours

12. Most sleep disorders go away, even without treatment.

False – Sleep disorders do not disappear without treatment, in fact they get worse