Proper Analysis of Data

The data collected through observations, interviews, and surveys highlights significant sleep-related challenges faced by students, offering valuable insights into their sleep habits, obstacles, and potential solutions. This analysis synthesizes the findings to identify key patterns and actionable recommendations for addressing these issues effectively.

Key Findings from Observation and Interviews

1. Common Challenges:

- Irregular Sleep Schedules: Many students struggle to maintain consistent sleep patterns due to late-night studying, social media use, or other distractions. Participants often reported staying up late, leading to disrupted circadian rhythms and inconsistent sleep cycles.
- Stress and Anxiety: Academic pressure and social stressors frequently interfere with students' ability to relax and fall asleep. This results in fragmented sleep or difficulty initiating sleep.
- Poor Sleep Quality: Even when achieving sufficient sleep duration, students reported frequent wake-ups, restlessness, and a lack of restorative sleep. This led to daytime fatigue, difficulty concentrating, and reduced productivity.

2. Impact of Sleep Issues:

- Mental and Physical Health: Chronic sleep deprivation caused stress, irritability, weakened immunity, and poor academic performance. Some participants experienced persistent fatigue and a lack of motivation throughout the day.
- Social and Academic Interference: Disrupted sleep schedules negatively affected students' interactions with peers and group work efficiency. Additionally, frequent sleep disturbances made it challenging to meet academic deadlines.

3. Insights from Interviews:

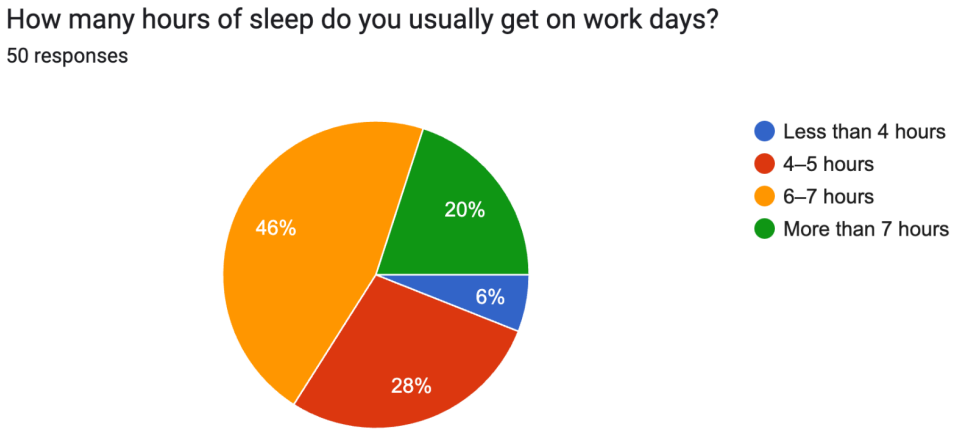
Each participant's account highlighted unique but overlapping experiences with sleep-related problems:

- Participant 1 struggled with social media use and academic deadlines, leading to daytime drowsiness and reduced focus.
- Participant 2 experienced frequent awakenings due to stress, causing feelings of exhaustion and low energy levels.
- Participant 3 reported constant sleepiness and procrastination due to a lack of high-quality sleep.
- Participant 4's inconsistent sleep schedules caused irritability, headaches, and challenges in maintaining productivity and health.

Analysis of Survey Data

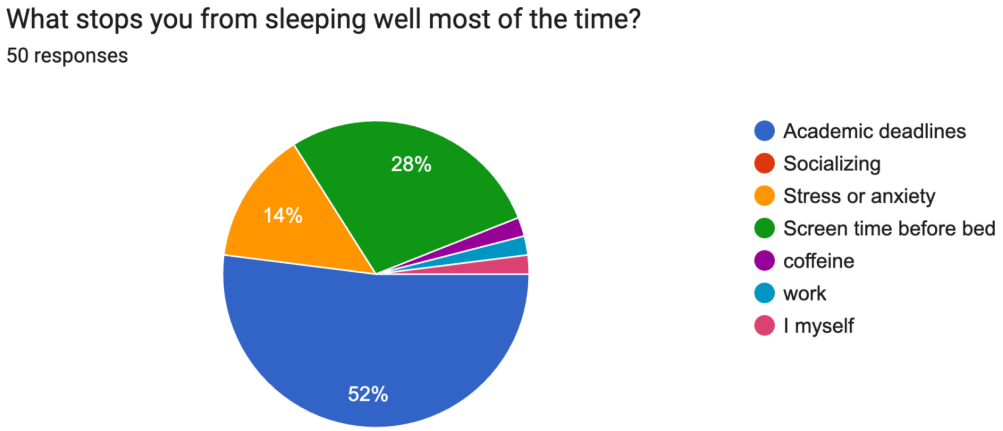
The Google Forms survey collected quantitative insights from students, reinforcing the patterns observed during qualitative research.

1. Sleep Duration on Workdays:



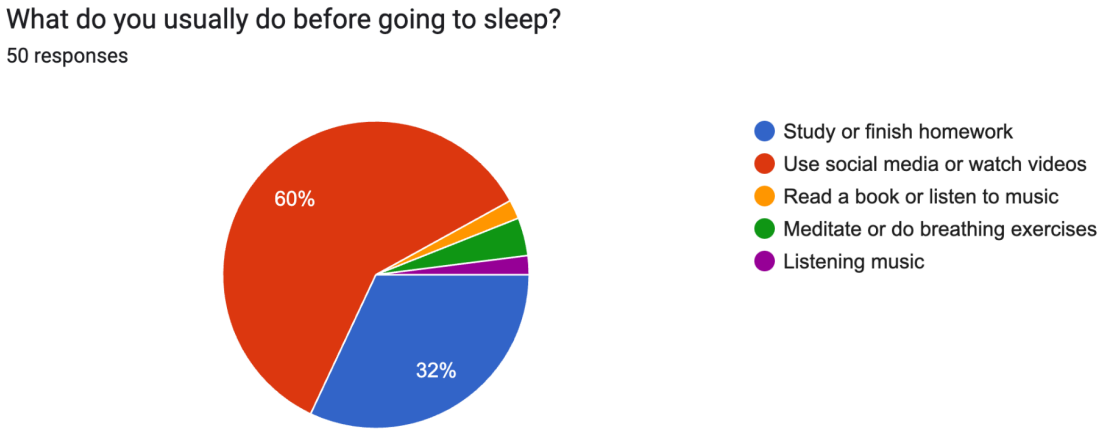
- A majority (23 out of 50) of respondents reported sleeping 6–7 hours on workdays, indicating that students typically fall short of the recommended 8 hours of sleep.
- A significant portion (14 out of 50) reported getting less than 6 hours, highlighting widespread sleep deprivation.

2. Barriers to Sleep:



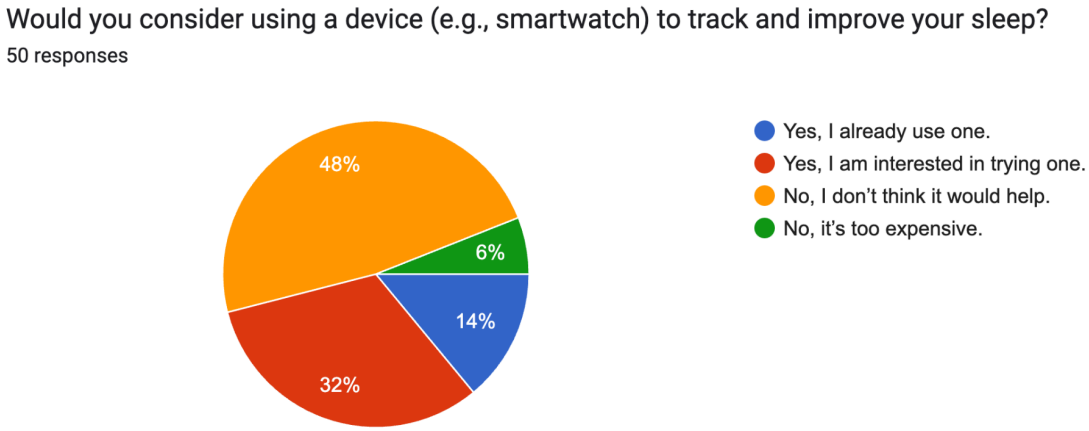
- Academic deadlines were the most frequently cited barrier (26 out of 50), followed by screen time before bed (14 out of 50), and stress or anxiety (7 out of 50).
- Other minor factors included caffeine consumption and self-reported poor habits.

3. Pre-Sleep Activities:



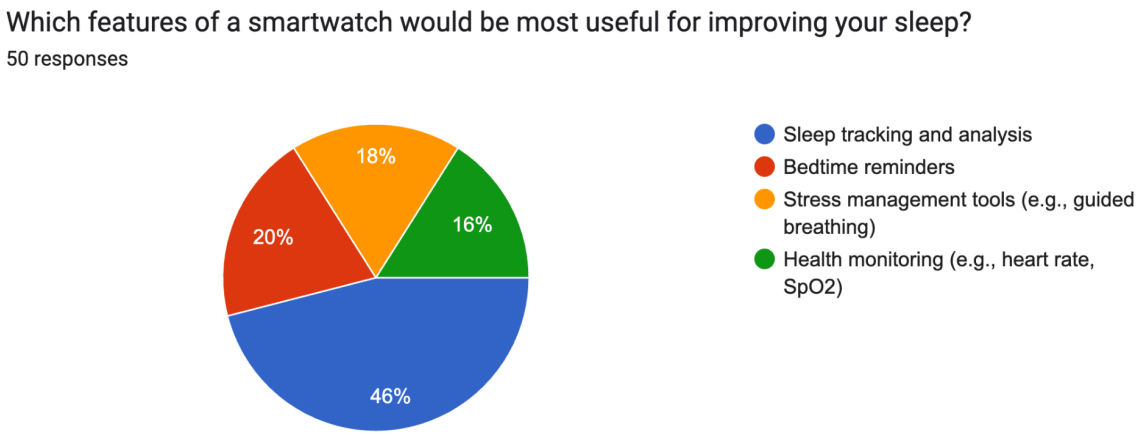
- The majority of respondents (30 out of 50) engaged in screen-based activities, such as social media or watching videos, before bed. This was followed by studying or homework (16 out of 50), which are known to stimulate the brain and delay sleep onset.

4. Interest in Sleep-Tracking Devices:



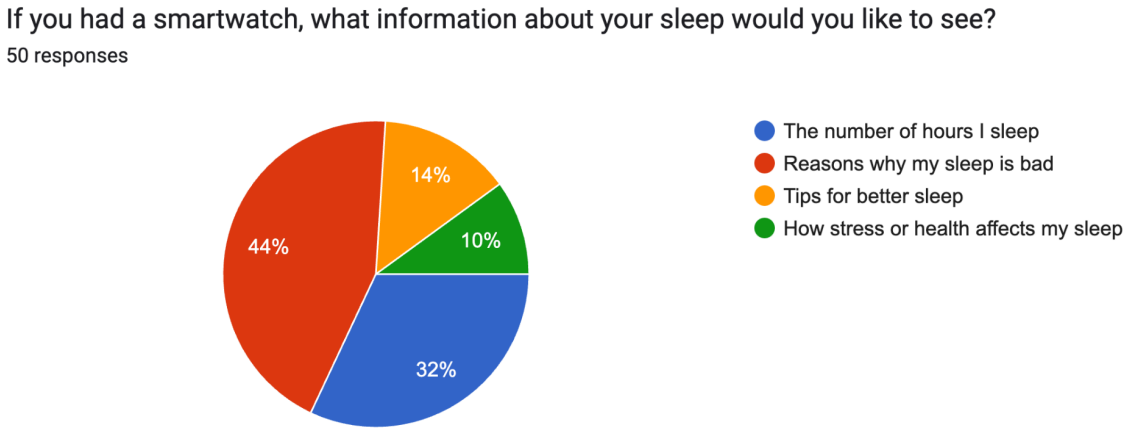
- While a notable portion (16 out of 50) expressed interest in trying a smartwatch to improve their sleep, a similar group (24 out of 50) was skeptical of its usefulness.
- Affordability was a barrier for 3 respondents, indicating that cost-effective solutions could improve adoption rates.

5. Desired Smartwatch Features:



- The most requested feature was sleep tracking and analysis (23 out of 50), followed by bedtime reminders and stress management tools (9 each), and health monitoring capabilities (8 out of 50).
- Respondents expressed a desire for actionable insights, such as identifying reasons for poor sleep and receiving tips for improvement.

6. Preferred Sleep Data:



- Students primarily wanted to understand why their sleep was poor (22 out of 50) and track the total hours of sleep (16 out of 50). Other desired information included tips for better sleep (7 out of 50) and the relationship between stress and sleep quality (5 out of 50).

Implications for Solutions

The findings underline the importance of creating tools that address the root causes of sleep disturbances while offering actionable insights to help students improve their sleep hygiene.

1. Features to Prioritize in Solutions:

- **Sleep Tracking and Analysis:** Providing detailed insights into sleep stages and disturbances.
- **Bedtime Reminders:** Encouraging consistent sleep schedules through personalized notifications.
- **Stress Management Tools:** Guided breathing exercises and stress monitoring can help students relax before bed.
- **Health Data Integration:** Heart rate and SpO2 monitoring can provide a comprehensive view of physical factors affecting sleep.

2. Accessibility and Affordability:

- Students' interest in solutions is contingent upon affordability. Products like the HONOR Choice Watch, which combine essential features at a reasonable price, can address this gap effectively.

3. Educational Initiatives:

- Raising awareness about the importance of sleep hygiene and its impact on academic performance and health is critical. Providing tips and strategies alongside sleep-tracking devices can reinforce behavioral changes.

Conclusion

The analysis reveals that sleep-related challenges among students are multifaceted, driven by irregular schedules, stress, and poor sleep quality. By leveraging technology such as affordable smartwatches and integrating educational resources, it is possible to address these issues and promote better sleep hygiene. Solutions tailored to students' specific needs can have a profound impact on their mental, physical, and academic well-being.