Unplugged: Quantifying the Effects of Technology on Adolescent Sleep and Mood

Kim, Louise (School: Breck School)
Yueh, Spencer (School: Breck School)

Sleep is a fundamental building block for human health, directly affecting mood, safety, and academic and physical performance. Despite this, only 20% of adolescents receive the recommended 8 to 10 hours of sleep per night. However, the role that electronics play in sleep quality is still under-researched, especially in adolescents. Therefore, this project sought to see if the absence of electronic use before falling asleep increased total sleep time, sleep quality, and mood. To demonstrate whether an association among sleep, electronics, and mood in adolescents could be established, we conducted a sleep study using 72 high school participants. We tracked their sleep patterns using actigraphy, a sleep tracking method, and daily sleep logs that participants completed each morning and night for two weeks. During one of the weeks, participants were required to use electronics before falling asleep. During the other week, participants could not use electronics two hours before falling asleep. After the data was collected, paired t-tests were applied to total sleep time and sleep quality, and a chi-squared test for independence was used to determine whether or not an association exists between electronics and mood. Our findings supported the hypothesis that that the absence of electronics two hours before bed increase the duration of total sleep time and increase sleep quality. Moreover, the use of electronics before bed improved mood the next day. Understanding and quantifying the role technology has in adolescent sleep is beneficial for improving performance and overall health.

Awards Won:
American Psychological Association: Certificate of Honorable Mention