SLEEP STUDY EFFECTS ON SLEEP QUALITY AND MENTAL HEALTH

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Introduction

- Poor sleep hygiene and mental health issues are common amongst college students due to high stress and rigorous environments.
- During the intervention, participants had a phone application which provided helpful suggestions (“nudges”) and reminders to help initiate healthier sleep hygiene, and improve related mental health conditions, such as depression, anxiety, and stress.
- Hypothesis: Due to the intervention, the DASS and PSQI scores will decrease between the baseline and debriefing surveys.

Participants

- N= 34
  - 18-24 years old
- Exclusion criteria:
  - No diagnosed sleep disorder
  - Android phone users only
  - Wake times vary by 2 hours within a week
- 3 participants were excluded due to phone-application incompatibility and no post-survey data (dropped out of the study).

Methods

- We used the Depression Anxiety Stress Scale (DASS) and the Pittsburgh Sleep Quality Index (PSQI) to assess improvements in sleep quality and mental health after exposure to the developed sleep intervention.
- Healthy sleep quality is indicated by a low score on the PSQI self-report scoring chart.
- Low stress, anxiety, and depression are indicated by a low score on the DASS measurement.
- Baseline survey (DASS/ PSQI part 1) self report
  - Session 1 / 2
- Debrief survey (DASS/ PSQI part 2) self report
  - Session 2 / 2
- Longitudinal study
  - Duration: 5 Weeks
- Data collected from within the context of a larger intervention study

Conclusions

- DASS scores did not significantly decrease between the two self-report assessments.
- PSQI scores significantly increased through the intervention.
  - This indicates a decrease in sleep quality from the beginning to the end of the intervention.

Results

- Figure 1. Change in depression scores from first to last assessment.
- Figure 2. Change in stress scores from first to last assessment.
- Figure 3. Change in anxiety scores from first to last assessment.
- Figure 4. Change in poor sleep quality from first to last assessment.

Limitations

- Timing of the intervention
  - Consent / first sessions occurred between weeks 3 and 5 of the term
  - Debrief / final sessions occurred between weeks 8 and 10 of the term
    - With different participants reporting scores at different times, there is a wider variation of scores falling under the DASS and PSQI surveys.
  - The last sessions during which participants received the DASS and PSQI surveys are in times of high demand for academic output, and therefore a drastic decrease in sleep quality and duration might have resulted.
- Short duration
  - Mental health did improve, but not significantly.
  - A longer study might have more of an impact on mental health due to:
    - Factors such as anxiety, depression, and stress would decrease if participants had higher quality sleep.
    - A longer intervention could show a higher significance level in differences in DASS scores.
    - The sleep patterns could be more robust than the intervention could have impacted.
- No control group
  - Everyone received the phone application, nudges, and reminders.
  - DASS scores might have gotten worse in a control group.
- Small sample size
  - DASS scores did not significantly decrease between the two self-report assessments.
  - PSQI scores significantly increased through the intervention.
    - This indicates a decrease in sleep quality from the beginning to the end of the intervention.

Future Directions

- Replicate the study with a longer longitudinal intervention
  - Take more frequent measurements.
  - Do chunks of timing for intervention in various times throughout the terms.
- Control for timing
  - Have every participant come in during the same weeks of the term for baseline and debrief assessments.

References