

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

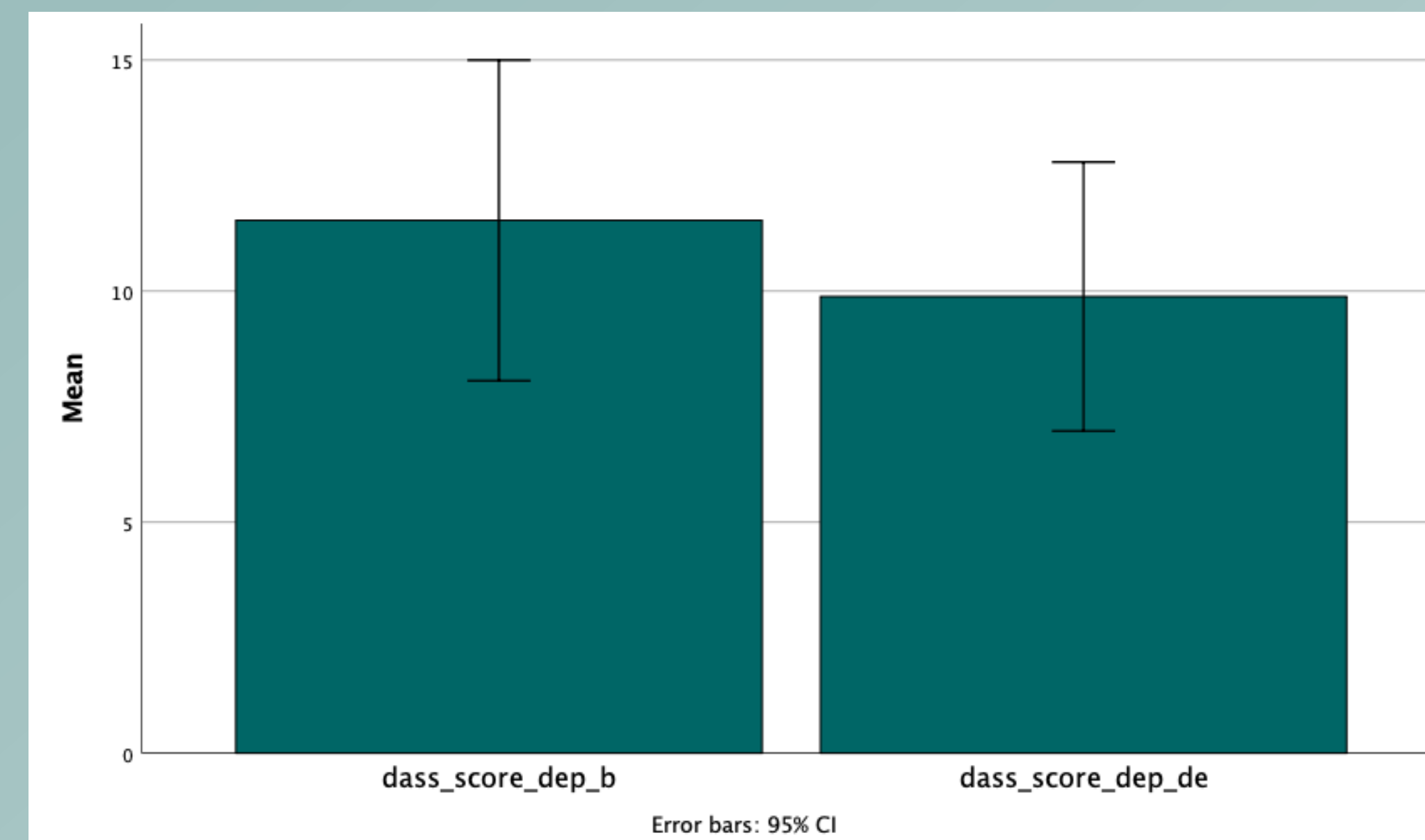


Figure 1. Change in depression scores from first to last assessment.

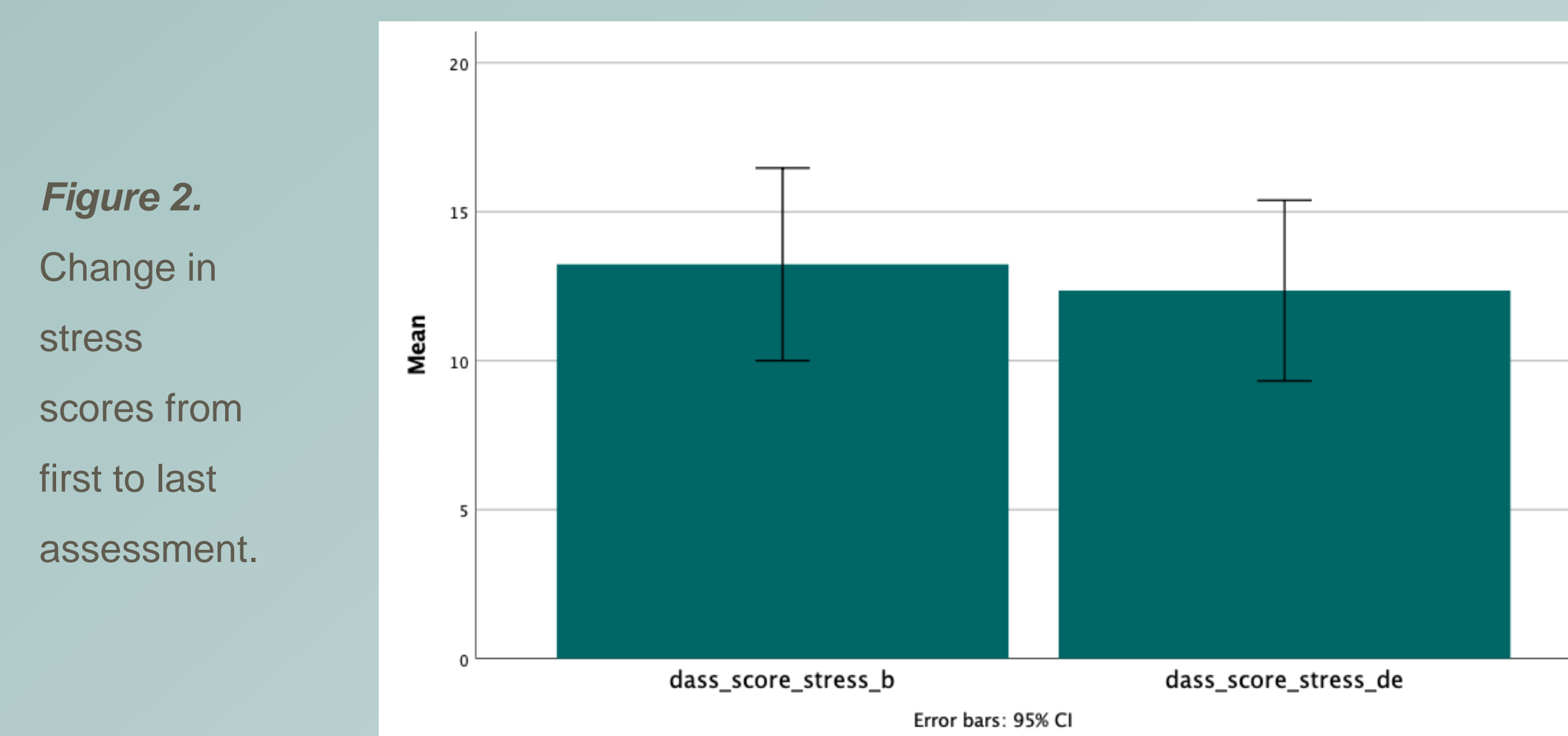


Figure 2. Change in stress scores from first to last assessment.

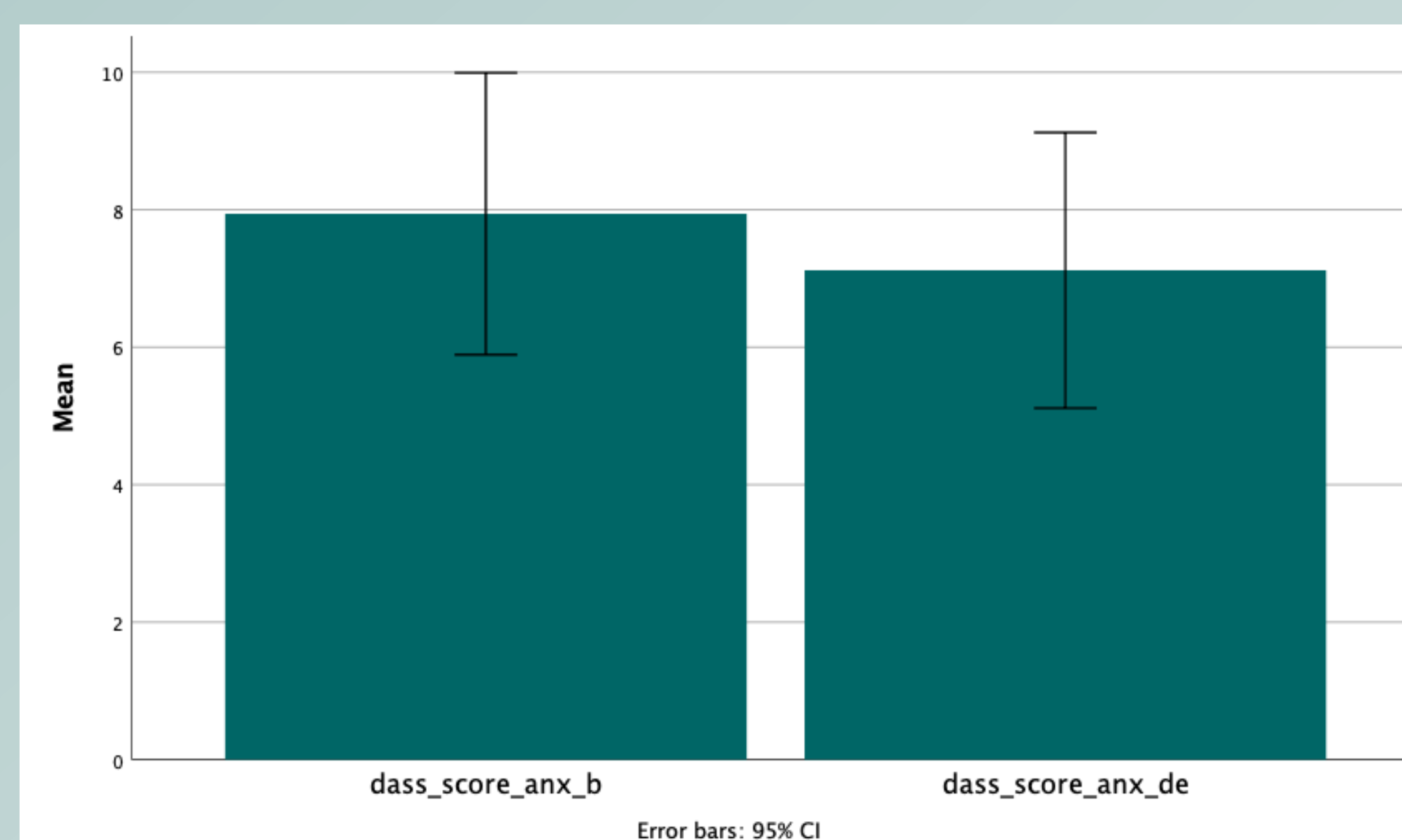


Figure 3. Change in anxiety scores from first to last assessment.

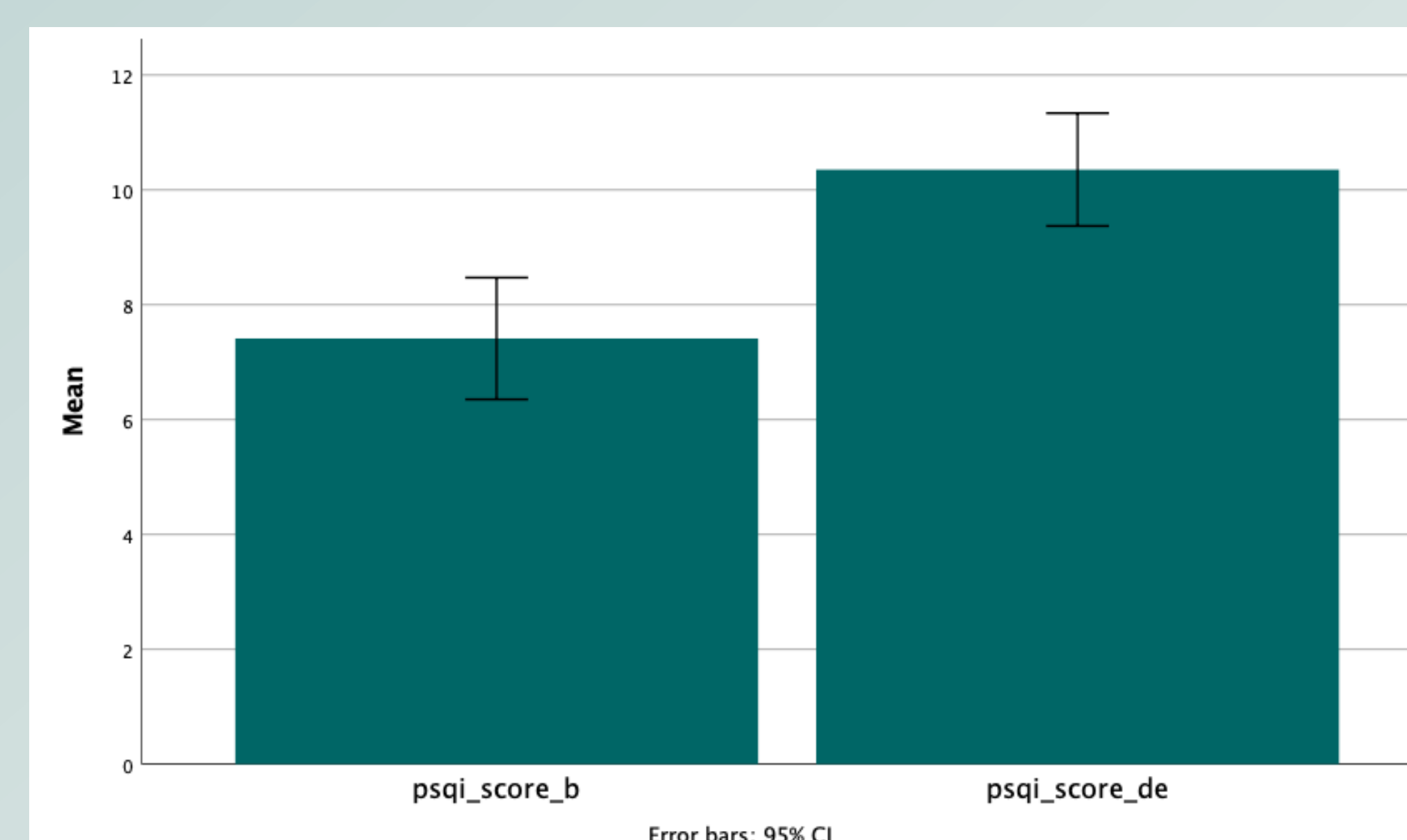


Figure 4. Change in poor sleep quality from first to last assessment.

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

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

- Augner, C. 2011. Associations of subjective sleep quality with depression score, anxiety, physical symptoms and sleep onset latency in students. *Central European Journal of Public Health*, 19(2), 115–117. DOI: 10.21101/cejph.a3647.
- Markarian, S. A., Pickett, S. M., Deveson, D. F., Kanona, B. B. 2013. A model of BIS/BAS sensitivity, emotion regulation difficulties, and depression, anxiety, and stress symptoms in relation to sleep quality. *Science Direct*, 210(1), 281-286. <https://doi.org/10.1016/j.psychres.2013.06.004>