

Introduction

Graduate and professional school coursework is intensive and causes stress and anxiety in a student's life. The effects of stress and anxiety are well documented in this population and as mental health becomes more of a growing concern, it is important to quantify to what degree graduate studies impact the mental health of healthcare students.¹⁻³ However, there is a gap in the literature concerning the link between stress and modern health metrics within this population.

The purpose of this study aims to elucidate any correlation between stress from intensive graduate studies on student's at the University of Southern California (USC) Health Science Campus (HSC) and its impact on healthy habits such as studying, exercise, and sleep. The primary outcome is to measure to what degree stress from graduate studies impact hours of study, exercise. We hypothesized the following:

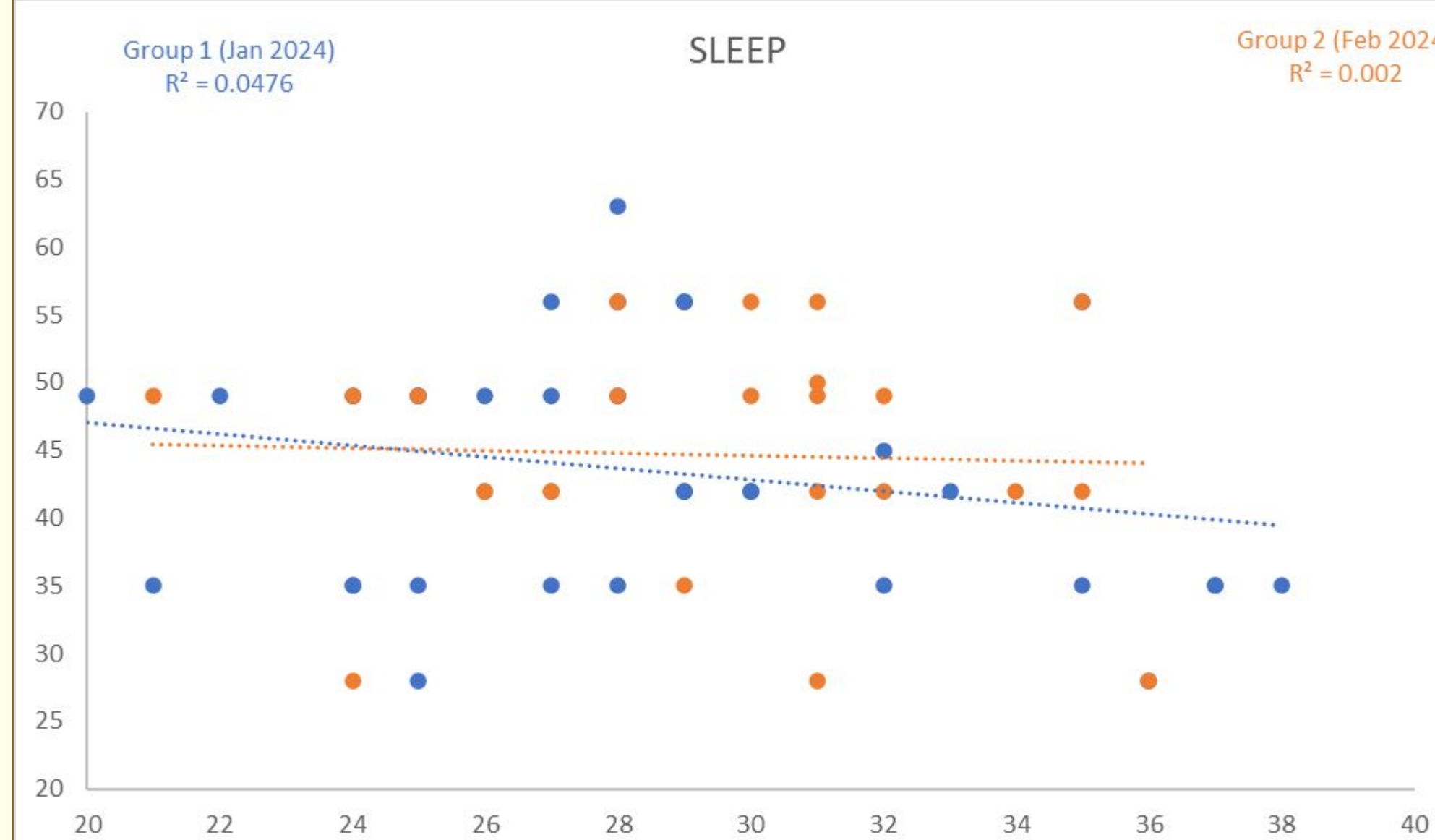
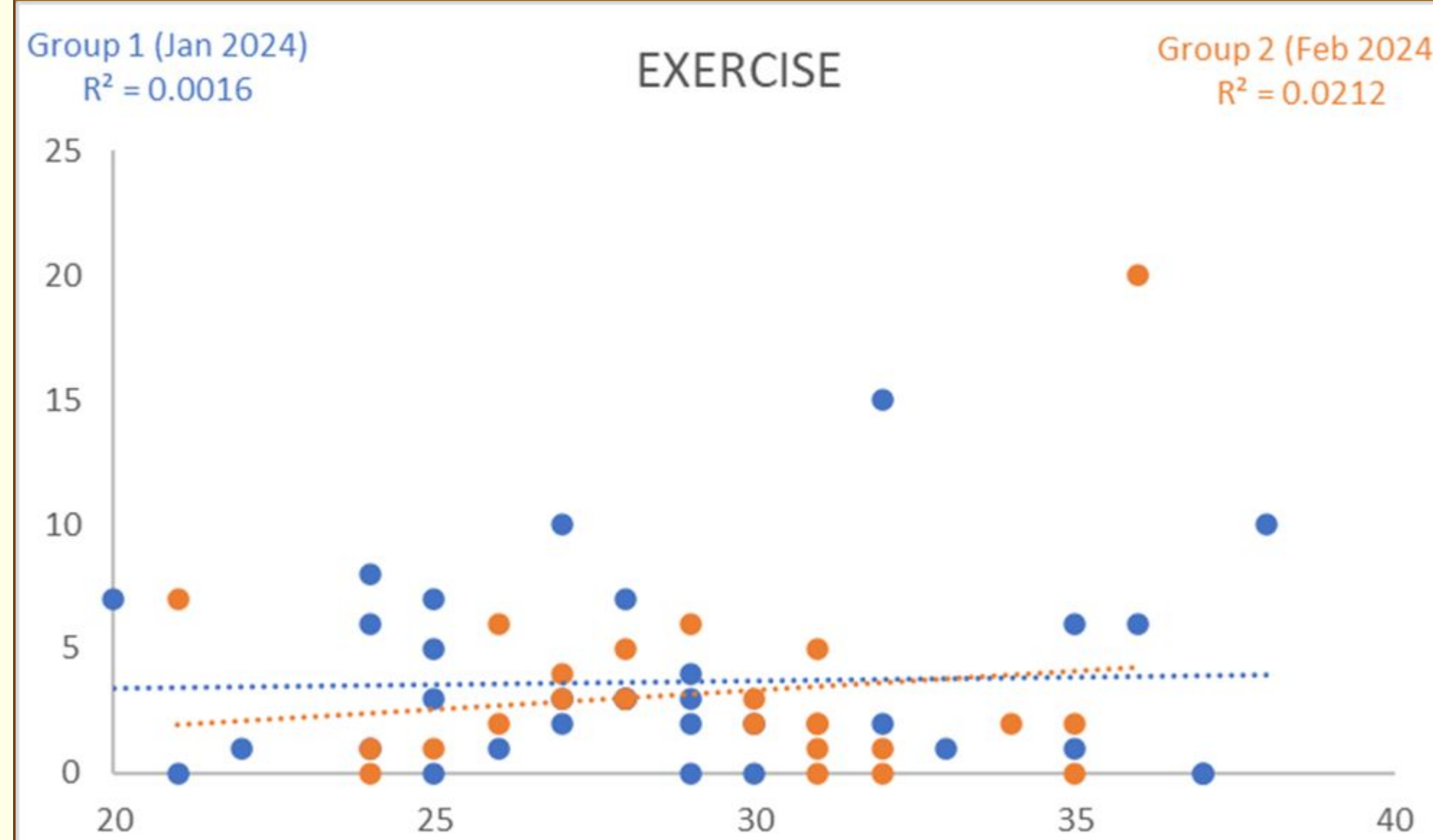
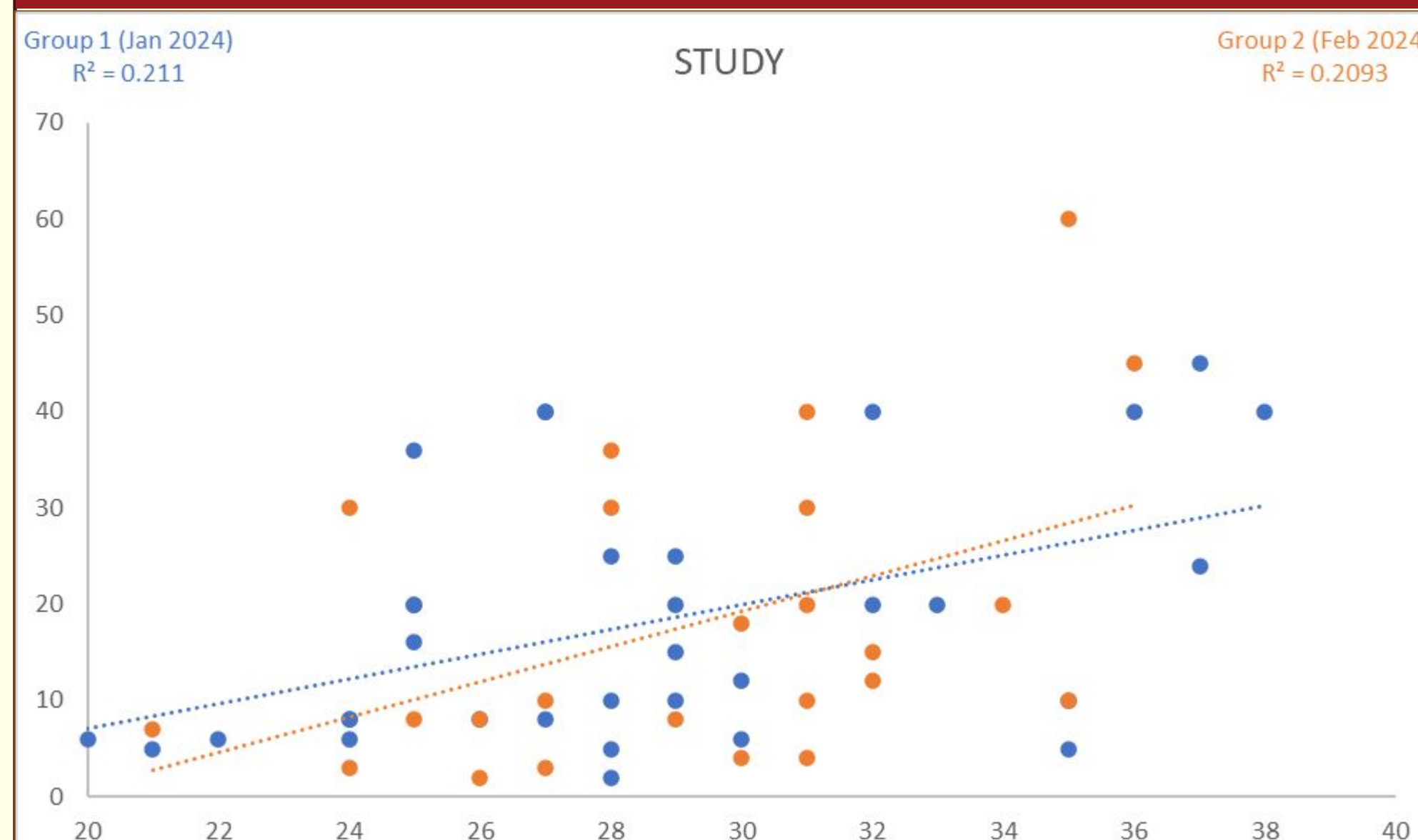
- Increasing** stress **decreases** hours of study.
- Increasing** stress **decreases** hours of exercise.
- Increased** stress **decreases** hours of sleep.

Methods

The population of our study includes graduate students from the USC Health Sciences Campus. Our data collection consisted of distributing a digital survey via email twice, 4 weeks apart, to the USC Mann PharmD student population, to gather a wide range of data and accurately assess our research question. Our brief survey consisted of 13 questions which evaluated study, exercise, and sleep habits on a continuous spectrum in relationship to the verified Perceived Stress Scale (PSS).⁴ The survey was sent out once in January of 2024, then again 1 month later to the same group of students to reassess the student's PSS score along with their study, exercise, and sleep habits.

Statistical analysis was performed using an F test for variance to determine if the paired groups were statistically significantly different from each other. A student's paired t test was performed to assess statistical significance. Finally, a linear regression analysis was done to determine the correlation between stress and the lifestyle habits of study, exercise, and sleep hours per week.

Results



Demographics:

Group 1 (January 2024)

- n = 33
- P1 = 21%
- P2 = 18%
- P3 = 58%
- P4 = 3%

Group 2 (February 2024)

- n = 24
- P1 = 21%
- P2 = 25%
- P3 = 50%
- P4 = 4%

Within the figures, the y-axis represents the hours per week for the given lifestyle metric, while the x-axis is the PSS value. R^2 is the linear regression coefficient of determination.

R^2 values are the following:

- Group 1 Study: 0.211
- Group 2 Study: 0.2093

- Group 1 Exercise: 0.0016
- Group 2 Exercise: 0.0212

- Group 1 Sleep: 0.0476
- Group 2 Sleep: 0.002

F-test Paired Two-Sample for Variance, one-tail

$p = 0.15$

Student's Paired t-test, two-tailed

$t = 0.55$

Conclusions

All groups had normally distributed data except for exercise group 2, which had an outlier data point; this did not affect the results in a meaningful way. The F test for variance was insignificant ($p=0.15$) meaning there was no variance between the stress of each group. This conclusion was further supported by the student's paired t-test for equal variances ($p=0.55$).

Linear regression R^2 value was also insignificant. Ideally, R^2 should be between 0.5 and 0.99.⁵ Thus, we concluded that there was no relationship between stress and the dependent variables of study, exercise, and sleep hours per week.

Some limitations of our study were that the majority of students who responded to the survey were P3's (58% and 50%) which would skew the data towards students who are more experienced in handling the stresses of graduate studies. The design of the study was of paired nature, which allowed for some respondents to be lost to the follow-up period ($n=33$ vs. $n=24$). The follow-up period was 4 weeks after the initial survey, which may not have been a long enough time frame to quantify a difference in perceived stress. Furthermore, stress is an inherently subjective metric to quantify, two people can experience the same stressor and report different perceived values using the PSS. Future research can aim to sample a larger variety and number of students, while also looking at different lifestyle metrics to assess how stress affects students in different ways.

References

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