

# Effects of Team Sports on Anxiety, Depression, Perceived Stress and Sleep Quality in College Students

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## INTRODUCTION

- Mental health is a global issue, with one in four people affected by a mental health disorder in their lifetime.<sup>1</sup>
- College students are particularly vulnerable to mental health problems and have a challenging time finding coping strategies.
- Previous literature shows that exercise may provide a way to effectively reduce mental health issues.<sup>3,4</sup>
- It was hypothesized that participation in team sports would significantly lower levels of depression, anxiety, perceived stress, and poor sleep quality in contrast with the comparison group.



## METHODS

### RESEARCH PARTICIPANTS AND SETTING

- 291 college students (71 M, 220 F) from one large public university in China
- 138 participants in experimental team sports group (71 M, 67 F)
  - Mean age of 18.94 years (SD = 1.283)
- 153 participants in the comparison group (all F)
  - Mean age of 18.34 years (SD = 1.202)

### RESEARCH DESIGN

- Quasi-experimental study
- Experimental group: team sports (volleyball or soccer)
- Comparison group: aerobic dance
- Both groups participated in one 90-minute physical education lesson each week over 12 weeks. Students were also instructed to self-run 68 kilometers
- Four different questionnaires completed via online social media apps at pre-test and post-test

### OUTCOME MEASURES

- Anxiety (GAD-7)<sup>5</sup>
- Depression (CESD-R)<sup>6</sup>
- Perceived Stress (PSS)<sup>7</sup>
- Sleep Quality (PSQI)<sup>8</sup>

## RESULTS

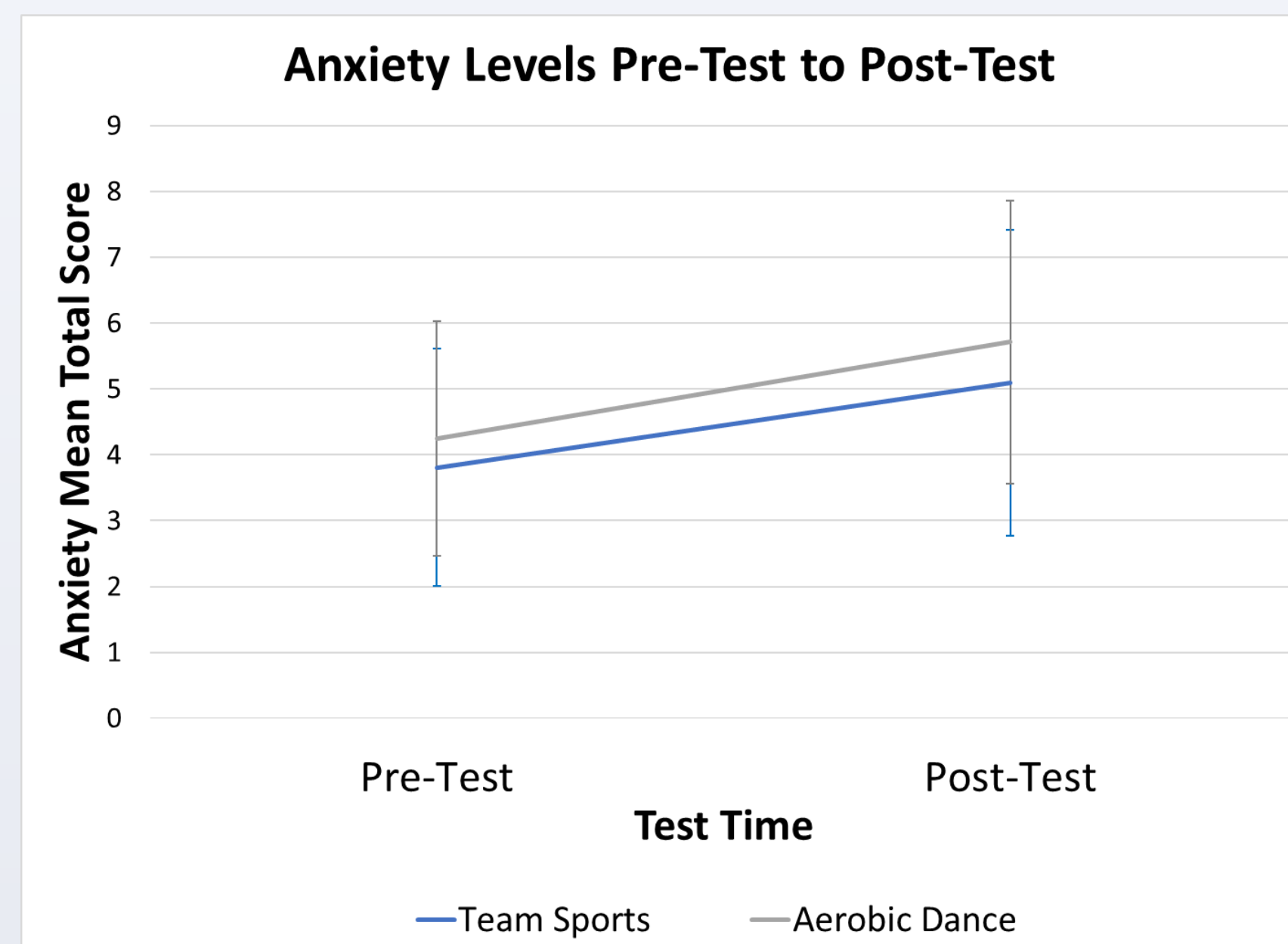


Figure 1: Anxiety ANOVA Results

	F - value	p - value
Within group (time)	40.624	.0001
Between Groups	1.22	.669

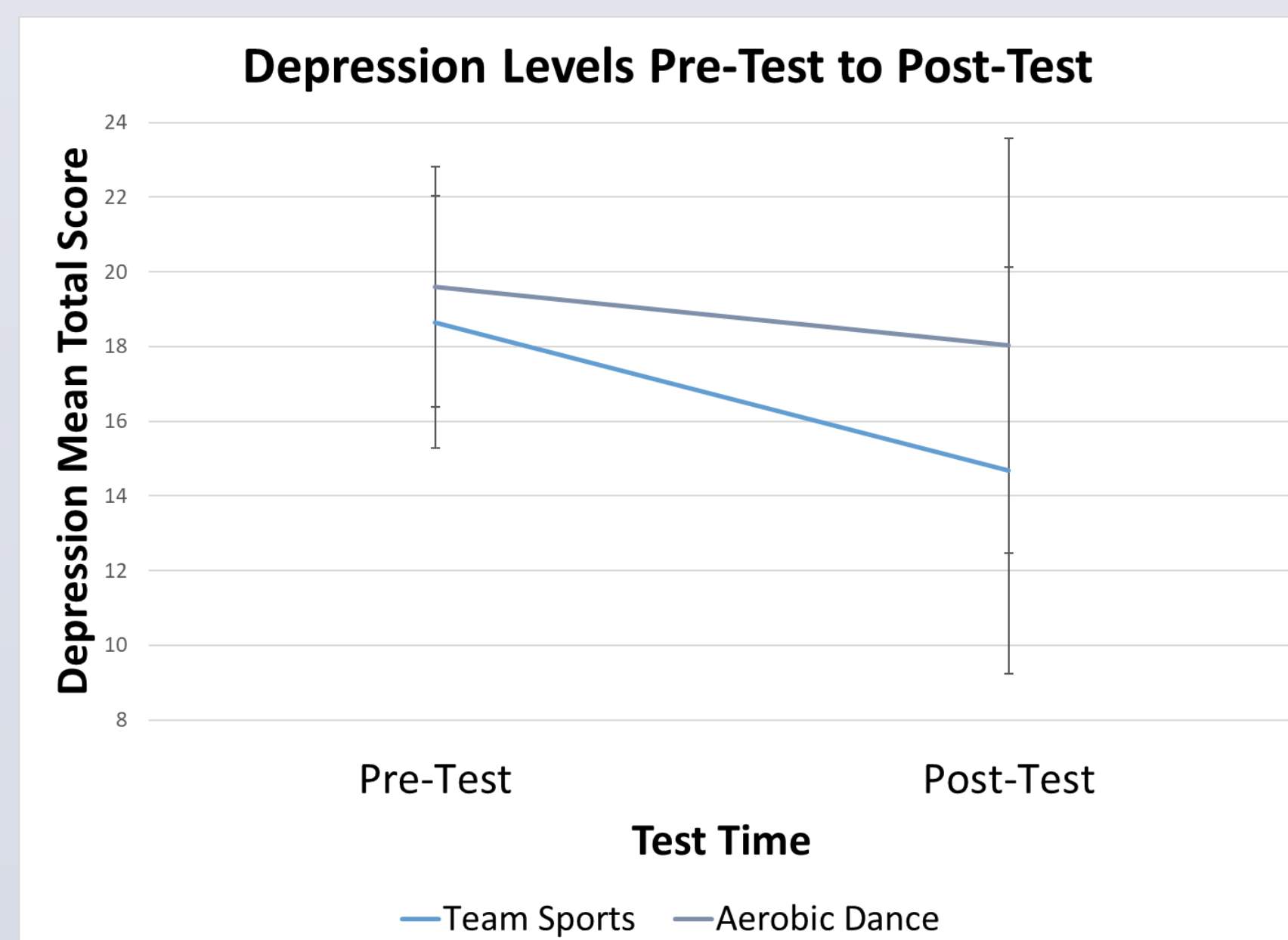


Figure 3: Depression ANOVA Results

	F - value	p - value
Within group (time)	27.505	.0001
Between Groups	5.047	.025

- There was significant improvement in both depression levels and quality of sleep over time.
- Team sports and aerobic dance both did not lessen the amount of anxiety or perceived stress.
- Depression decreased significantly more in the team sports group compared to the aerobic dance group.

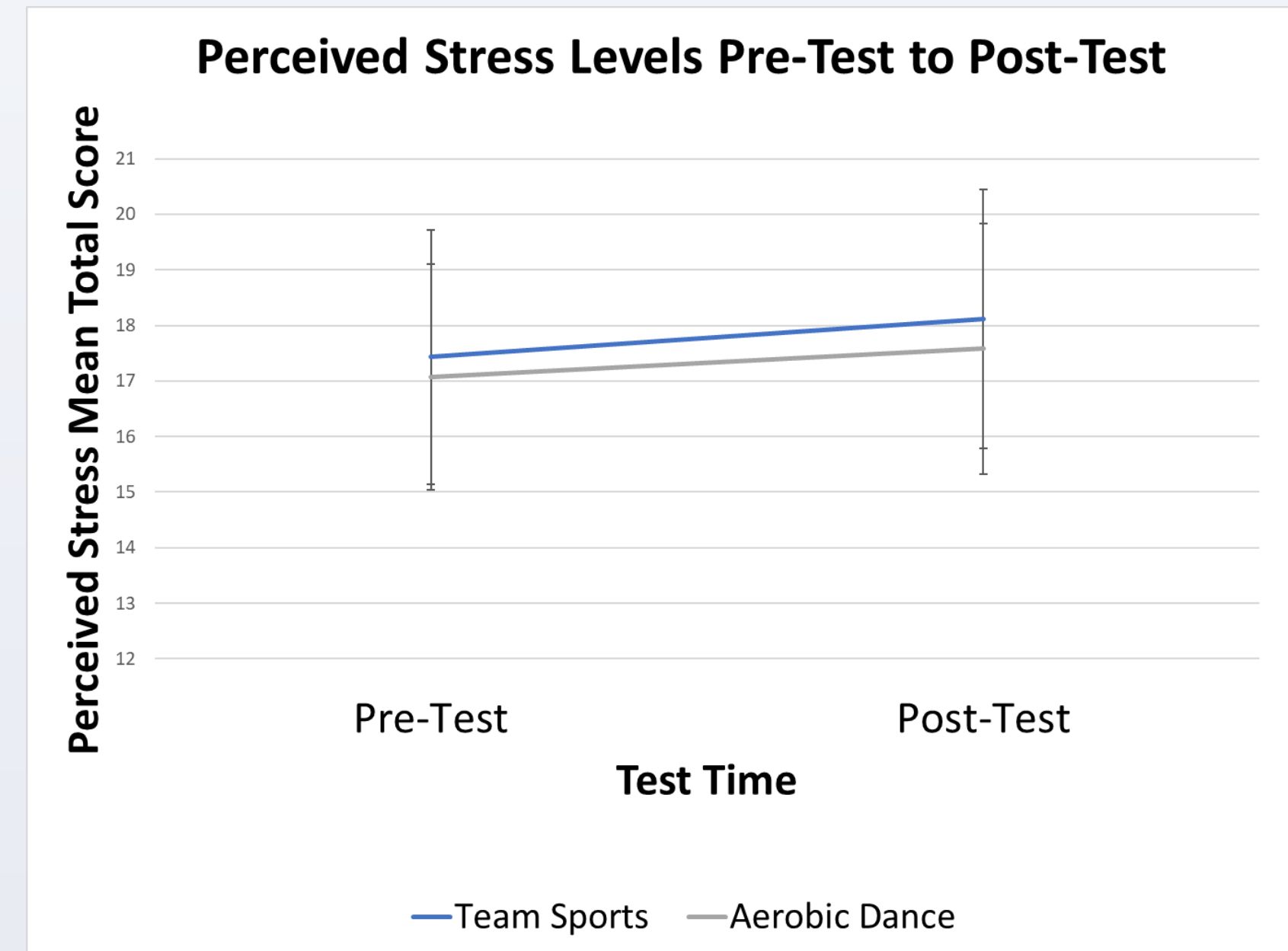


Figure 2: Perceived Stress ANOVA Results

	F - value	p - value
Within group (time)	53.062	.035
Between Groups	1.20	.751

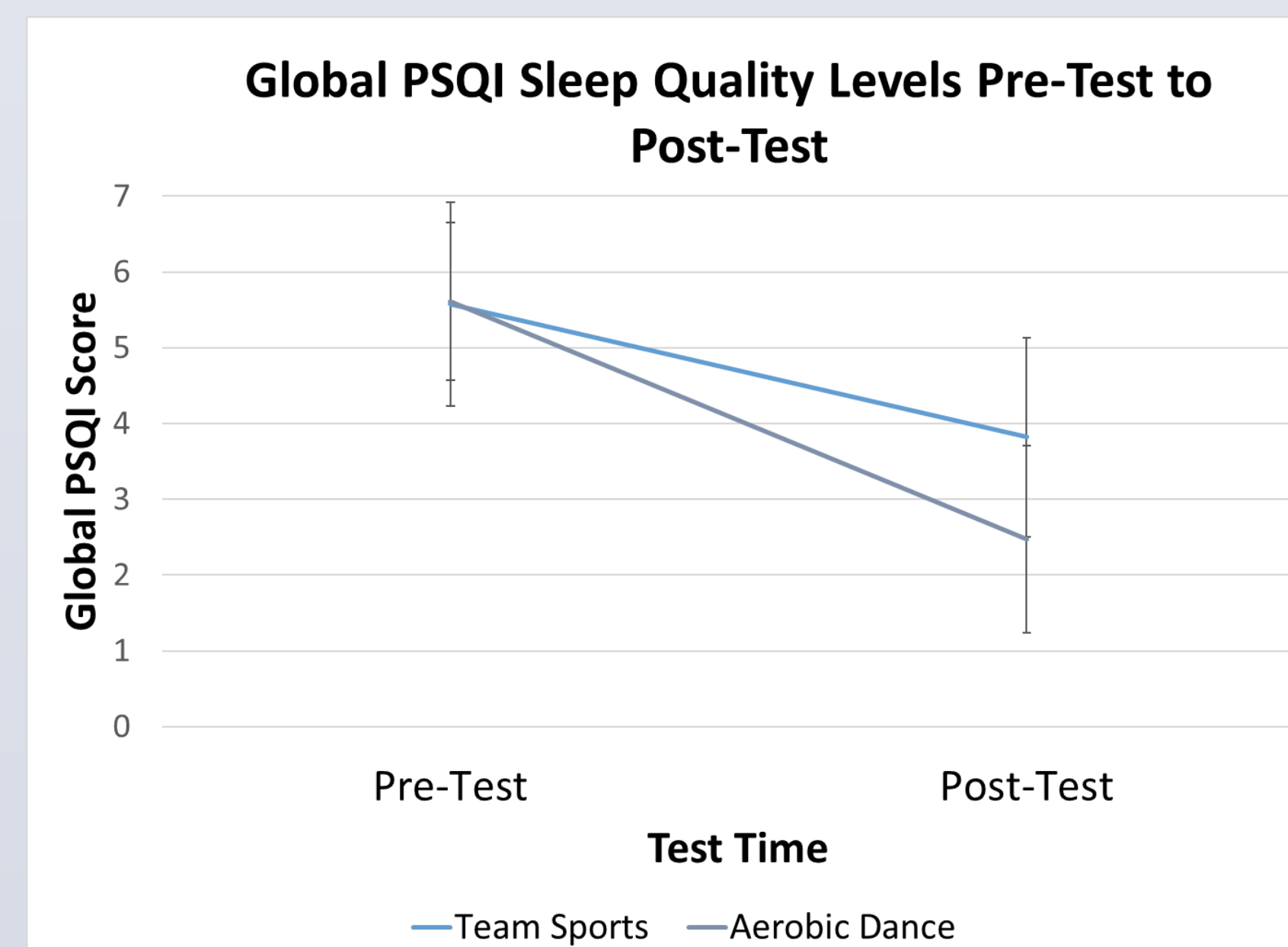


Figure 4: Global PSQI ANOVA Results

	F - value	p - value
Within group (time)	121.0	.0001
Between Groups	3.213	.074

## CONCLUSIONS

- On average, both groups had total scores that indicated minimal anxiety at pre-test and post-test.
- Both groups had pre-existing moderate stress and stayed within this range over time.
- Academic pressure is a likely explanation for the slight increase in both stress and anxiety throughout the semester.<sup>9,10</sup>
- Mild to moderate amounts of stress and anxiety can help elevate academic performance, but too much is harmful to our mental health.<sup>10,11</sup>
- Both groups had a total score indicating depression at pre-test.<sup>6</sup> At post-test, the team sports group score did not indicate depression, while the aerobic dance score did.
- Team sports offer heightened emphasis on group goals and a sense of connection, providing an overall improved mood and encouraging strategies for managing long-term mental health.
- Both groups went from a score of poor sleep quality at pre-test to a score of good sleep quality at post-test.

## FUTURE DIRECTIONS

- Assess if abnormally high levels of stress and anxiety levels in college students can be improved by team sports participation
- Evaluate if moderate levels of stress and anxiety in college students can be improved by eliminating the factor of academic pressure



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