Is the Relationship Between Anxiety Levels and Perceived Stress Moderated by Exercise Frequency?

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Moderate levels of **anxiety** are associated with the sharpest *increase* in **stress**.

Introduction

- Anxiety (ANX) and perceived stress (PS) both disrupt daily life, and are linked to poorer mental health outcomes[1,2].
- Prior research supports a linear relationship between ANX and PS[3].
- Regular exercise promotes mental well-being by releasing endorphins and other neurochemicals, alleviating PS and ANX[4,5].
- Prior research suggests that at high levels of ANX, exercise may not have a protective effect[6,7].

Hypotheses

- Exercise frequency will moderate the association between ANX and PS such that:
  - Among people with low exercise, there is a positive linear relationship between ANX and PS
  - Among people with high exercise, the relationship between ANX and PS at low to moderate levels is weak and becomes stronger as anxiety increases (curvilinear)

Methods

Participants & Procedures

- Data collected online through Qualtrics at a Southeastern college, with participants receiving SONA credit.
- 440 college students (54.1% female; M_{age}=20.6, M_{BMI}=24.7)
- 21.9% identified as Hispanic, and 73.7% identified as White.

Measures

- General Anxiety Disorder-7(GAD-7)[8]
- Perceived Stress Scale(PSS)[9]
- Self-reported exercise frequency

Data Analytic Plan

- Two Quadratic Regression models were run in SPSS v29.

Variables

- Independent: GAD-7
- Dependent: PSS
- Moderator: Exercise Frequency
- Covariates: BMI, Sex, Age

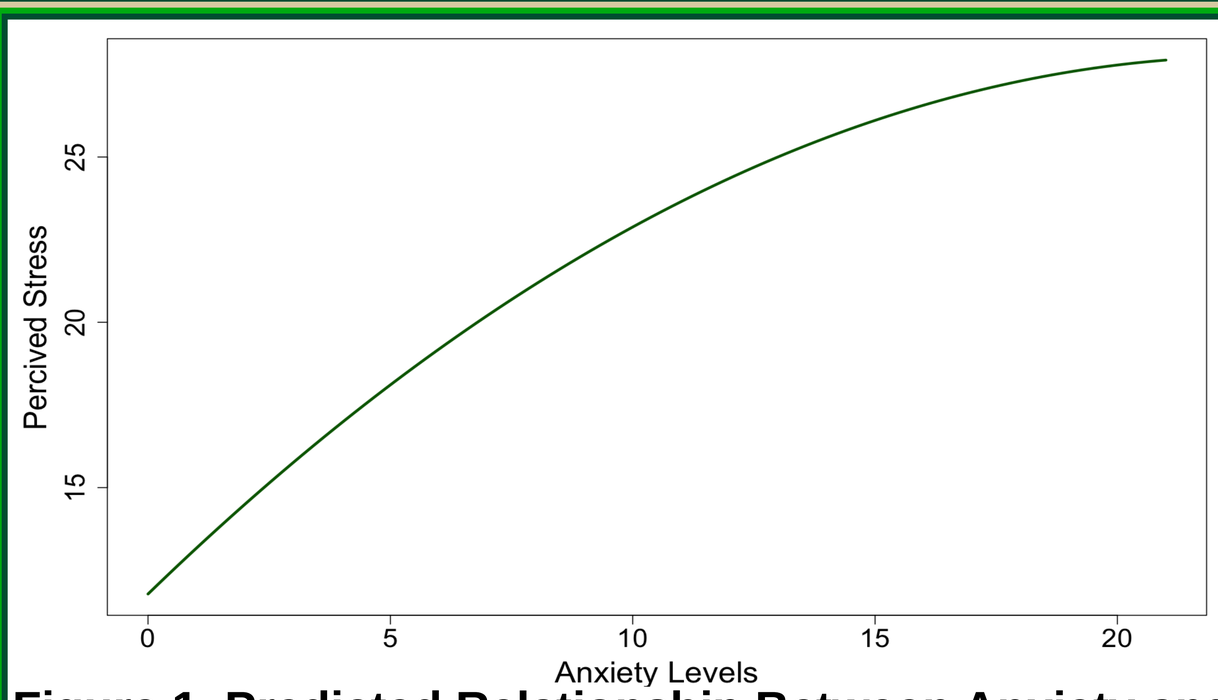

Figure 1. Predicted Relationship Between Anxiety and Perceived Stress

Results

Table 1. Results

Predictor	R^2	β	SE	p
	0.49			
ANX		1.05	0.26	**<0.001**
Exercise Frequency		-0.06	0.06	0.36
ANX*Exercise Frequency		0.09	0.02	0.67
ANX^2		0.01	0.01	**<0.001**
ANX^2*Exercise Frequency		-0.06	0.00	0.75
BMI		-0.04	0.05	0.26
Sex		-0.03	0.51	0.36
Age		0.03	0.07	0.35

Discussion

- Moderate levels of ANX and PS may merit intervention.
- The lack of association between exercise frequency and ANX may be due to unmeasured factors such as exercise type, exercise motivation, intensity, and stage of change[5].
- Variance in the intensity of exercise may be more important to an individual's PS than the frequency at which they exercise[6,7].

Limitations & Future Directions

- Cross-sectional design limits the ability to establish causality.
- Future research should examine the influence of additional exercise variables (e.g., exercise type, intensity, duration).

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