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The Relationship of Test Anxiety with Other Anxieties, Stress, and Emotion Dysregulation

Erin Batarseh

Abby Doster

Anna Rosenhauer

Sharon Pearcey

Ebony Glover

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Does Cortisol Level Predict Self-Reports of Test Anxiety?

Erin Batarseh, Abby Doster,
Anna Rosenhauer,
Sharon Pearcey,
Ebony Glover

KENNESAW STATE
UNIVERSITY

Affective Neuroscience Lab
Kennesaw State University

Introduction

- **Anxiety** and **stress** are emotional and often physical responses to the demands of daily life.
- **Test anxiety** is a type of performance anxiety where people experience elevated physiological and emotional distress in the presence of an examination.
- **Cortisol** is the primary stress hormone that is triggered when people encounter stress in their environment.
- **Estrogen** is a sex hormone that facilitates the maintenance and development of the female reproductive system. Studies have yielded results that suggest estrogen plays a beneficial role in cognitive functioning and attenuates cortisol production (4).
- **Hypothesis:** People with higher cortisol levels prior to participation in an experiment will have high self-reports of test anxiety, and high estradiol levels could mediate this relationship by decreasing overall cortisol.
- We investigated test anxiety further by analyzing its relationship with stress, emotion dysregulation, and other types of anxiety.
- Previous research has yielded significantly high correlations between test anxiety, anxiety variants, and stress (1,3,5).

Table 1
Multiple regression results for test anxiety

Test Anxiety	B	95% CI for B		SE B	β	R^2	ΔR^2
		LL	UL				
Model						0.025	-0.001
Constant	2.923	2.149	3.698	0.389			
Cortisol	0.247	-0.415	0.908	0.332	0.085		
Estrogen	0.181	-0.158	0.519	0.17	0.122		

Note. B = unstandardized regression coefficient; LL and UL are the lower and upper limits of the confidence interval (CI); SE B = standard error of the coefficient; and β = the standard regression. Following, there is a coefficient of determination (R^2) and the adjusted R^2 (ΔR^2).

Methods

Participants were 175 students from Kennesaw State University. 65 of the participants were male and 110 were female.

Cortisol and estrogen (17β -estradiol) levels were assayed via saliva samples collected from each participant prior to a fear conditioning paradigm.

Self-report measures:

- Westside Test Anxiety Scale (Driscoll, 2004).
- Depression, Anxiety, and Stress Scale (DASS-21).
- State Trait Anxiety Inventory (STAI).
- Brief Emotional Dysregulation Scale (EDS).

Results

A multiple regression was run to predict test anxiety from cortisol and estrogen levels. **The multiple regression model did not significantly predict test anxiety $F(2,75) = .964, p = .386, \text{adj. } R^2 = -.001$.** Regression results can be found in *Table 1* below.

A correlation analysis was conducted in SPSS to analyze the relationship between test anxiety and other variables such as total anxiety ($r = .293$), total stress ($r = .306$), state anxiety ($r = .335$), trait anxiety ($r = .413$), and emotion dysregulation ($r = .399$). All p values were significant at $p < .001$. Correlation results can be found above in *Figure 1*.

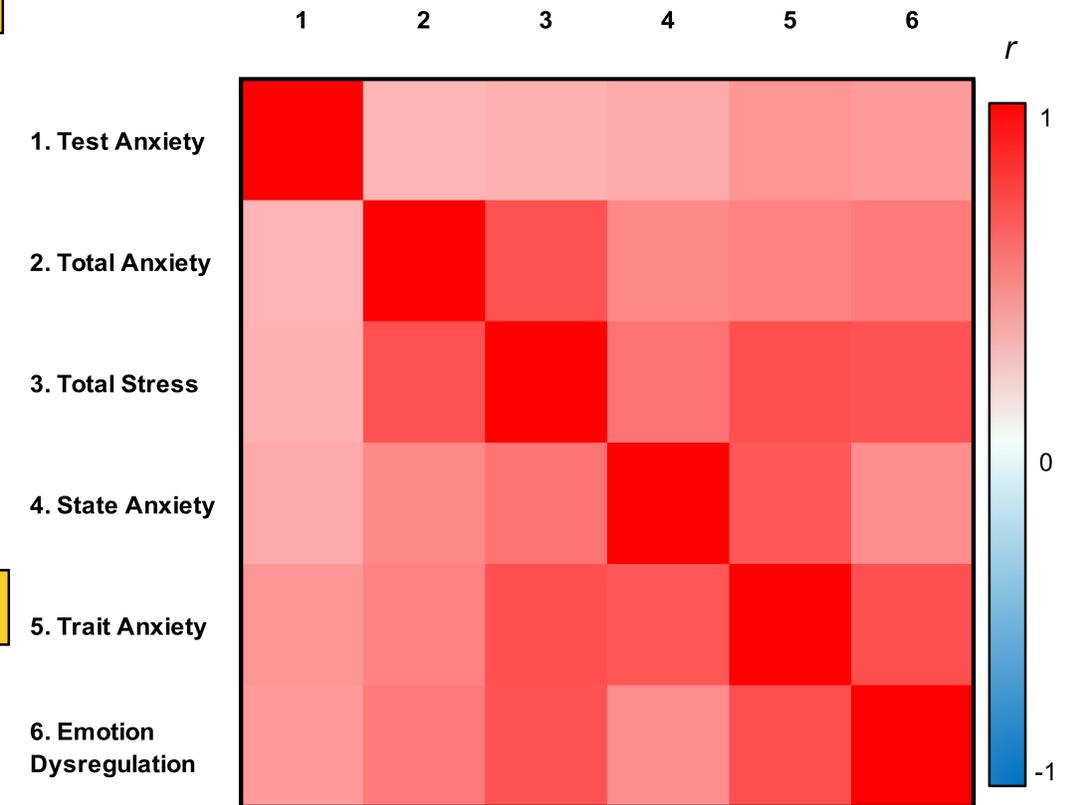


Figure 1. Correlations between test anxiety, total anxiety, total stress, state anxiety, trait anxiety, and emotion dysregulation.

All p values were significant ($< .001$)

Conclusions

- Our findings indicate that one cannot predict a person's level of test anxiety based on their cortisol and estrogen levels.
- The high correlation between test anxiety and other psychopathologies have implications for people suffering from test anxiety. A treatment for one form of anxiety may alleviate test anxiety.
- Future research should look to investigate the relationship between treatments designed to help anxiety symptoms and their effects on text anxiety.

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