

# The Effects Stress and Anxiety Have on Cognition Performance

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## Abstract

The purpose of this study was to examine the effects of stress and anxiety on undergraduate students' cognition performance. Specifically, my main study hypothesis is that stress and anxiety has a negative effect on students' cognition performance, similar to previous research conducted with undergraduates in Midwestern schools that found students who reported stress affecting their academic performance had lower GPA (Frazier et al., 2018). Fifty-two students who were enrolled at colleges and universities participated in my study. Participants ranged from 18-39 years of age, and were primarily enrolled in courses full-time. The study was conducted through an online survey and consisted of questions on stress and anxiety, attention span, memory, and how overwhelmed participants reported feeling in the past month.

## Methodology

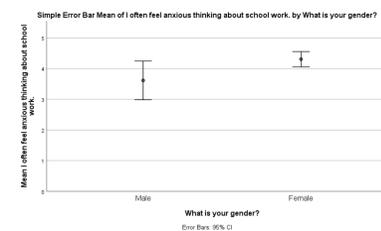
The participants of this study consisted of 52 college undergraduate students who were enrolled in colleges and universities. The study consisted of a three-part online questionnaire that participants completed on Survey Monkey. The 25-question survey was posted on social media (particularly in senior Facebook page of Salem State University) as well as on Instagram. The survey consists of questions that concern the effects anxiety and stress have on students' cognition performance.

### Sample questions are shown below:

- "In the past month, I have felt overwhelmed due to schoolwork."
- "It is hard for me to integrate information and put information together from research sources when writing a term paper."
- "I often feel anxious thinking about schoolwork."
- "The stress I feel about completing schoolwork negatively affects my performance."
- "I usually feel confident in my ability to handle my personal problems and obligations."
- "My mind often wanders while completing coursework."
- "I have considered taking time off from school because it is too much."

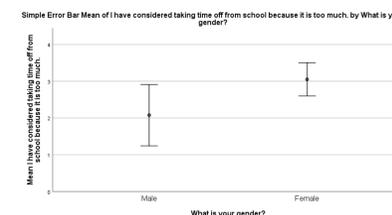
## Results 2: Independent Samples t-tests

Figure 4: Independent Samples t-test: Female and Male Students Differences in Mean level of Anxiety in Thinking about School



Results of an independent samples t-test showed the mean anxiety level in thinking about school was higher for female students ( $M= 4.31$ ,  $SD= xx$ ) as compared with male students ( $M= 3.62$ ,  $SD= xx$ )  $t(50)= 2.57$ ,  $p<.05$ .

Figure 5: Independent Samples t-test: Female and Male Students Differences in Mean level of Considering Taking Time off from School Because it is Too Much



Results of an independent samples t-test showed the mean score of the degree to which students considered taking time off from school because it is "too much" was higher for female students ( $M= 3.05$ ) as compared with male students ( $M= 2.08$ )  $t(50)= 2.19$ ,  $p<.05$ .

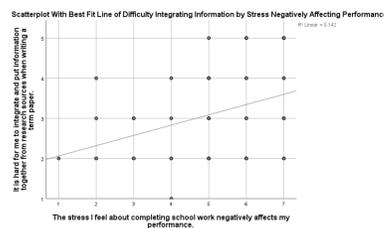
## Results 3: Multiple Linear Regression Model

A multiple linear regression model further examined factors which predicted the dependent variable: the extent to which students considered taking time off from school because it is "too much". Three predictor variables were significantly associated with students considering taking time off from school. These included:

1. **Stress about completing schoolwork negatively affecting students' performance** was positively associated with **students considering taking time off from school because it is "too much"** ( $\beta= .38$ ,  $p<.05$ ).
2. **Feeling proud of oneself and one's grades** negatively predicted students considering taking time off school ( $\beta= -.33$ ,  $p<.05$ )
3. **Female students, more than male students**, indicated they had to a greater extent **considered taking time off from school because it is "too much"** ( $\beta= -.213$ ,  $p=.05$ )

## Results 1: Correlation Analyses

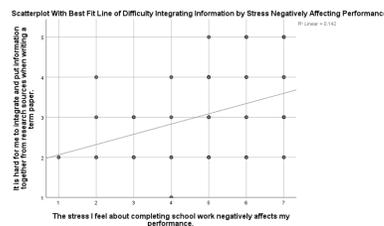
Figure 1



In support of my study hypothesis, correlations showed: Students who reported that stress while completing schoolwork negatively affected their academic performance also had more difficulty with cognitive concentration tasks, such as

A. Integrating information to write papers:  
 $r(50)=.38$ ,  $p<.05$  **Figure 1**

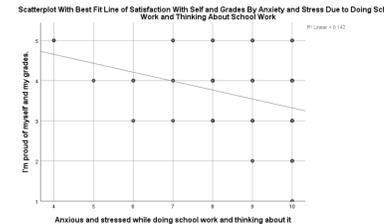
Figure 2



as well as

B. Forgetting assignment due dates  
 $r(50)=.46$ ,  $p<.05$  **Figure 2**

Figure 3



C. Also, students reporting higher satisfaction with their grades and semester academic performance reported lower levels of anxiety and stress related to schoolwork:  
 $r(50)=-.38$ ,  $p<.05$  **Figure 3**

## Introduction

- > This study examined effects of stress and anxiety on undergraduate students' cognition performance.
- > Stress and anxiety is common among undergraduate students. There are many aspects of the college experience that increase stress in students but, qualitative analysis has shown that stress has influenced students both negatively and positively (Peer et al., 2015).
- > Some students were shown to use stress to their advantage and found that it was a motivational factor and enhanced their performance. While other students under stress experience more anxiety with difficulties concentrating. The impact stress has on performance depends how one responds to stress. (LeBlanc, 2009). High levels of stress have been shown to hinder task performance that involve divided attention, memory and decision making (LeBlanc, 2009). Stress and anxiety can have a negative or positive affect on undergraduates' attention span, and memory.
- > Undergraduate students from 20 Midwestern schools were surveyed on their perceived barriers to academic performance and GPA (Patricia Frazier et al., 2018). They found that students who reported stress affecting their performance had lower GPAs.
- > While a study done on perceived stress on academic performance found that a students academic performance is not correlated to their perceived stress (Mohsen Alyami, 2017).

## Research Question

Is students' cognition performance negatively affected by stress and anxiety?

## Hypothesis

Cognition performance of students will be negatively correlated with stress and anxiety levels. Students reporting higher stress levels will show lower scores on measures of memory and concentration.

## Conclusion

College students are under a great deal of stress and anxiety. The study examined the effects stress and anxiety have on college undergraduates' cognition performance. Based on the results, stress has been shown to negatively affect the academic performance of students.

For instance, students who are more stressed indicate that their performance is more affected by this stress. An unexpected result was students who believe that stress about schoolwork negatively affects their academic performance had considered taking time off from school to a greater extent.

Furthermore, consideration of taking time off due to feeling like school was "too much", was endorsed more by female students than by male students.

## Recommendations and Limitations

Limitations were found when collecting responses on students GPA. The study would have benefited from a numeric GPA response variable rather than a categorical variable of letter grade, which restricted the range of the variable.

When collecting data from students, the study lacked diversity in gender. Participants included 39 females and 13 males. While the study found significant differences between men and women on some factors, in a future study I would try to have more equal numbers of men and women participants.

## Acknowledgements

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