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Abstract

During a time that involves a struggle with self-esteem and identity, the college environment and academic stress only make emerging adulthood more challenging for college students. Previous research has shown that low self-esteem is consistently linked with low academic performance in students. Previous research also suggests that the presence of test anxiety negatively affects academic performance. I sought to target the role of self-esteem in emerging adults’ test anxiety, hypothesizing that students who struggled with low self-esteem would report psychological and physiological symptoms of anxiety during exams. American college students were recruited via email and social media and 111 participants completed an online survey regarding their lives as emerging adults. The results demonstrated that participants who suffered from frequent anxious thoughts and physical distress during exams also suffered from low academic self-esteem and low test-taking confidence. Additionally, participants who experienced anxious thoughts during exams also experienced physiological symptoms like sweating and rapid heartbeat. Female participants were found to have experienced anxious thoughts during exams more frequently than male participants suggesting a gender difference in test anxiety. The results of this research indicate that self-esteem in academia does play a large role in whether a student suffers from test anxiety. These results can be used to identify and alleviate symptoms of test anxiety in the traditional college classroom environment to improve test scores and the overall mental health of emerging adults.

The Role of Self-Esteem in Emerging Adults’ Test Anxiety

Emerging adulthood is a complex, confusing period in an individual’s life in which a person typically feels that they are neither an adolescent nor an adult (Arnett, 2000). Through his research, Arnett (2000) explains that between ages 18-25, emerging adults in industrialized countries typically make the transition from high school to college, carving the path to their future careers. The college environment and academic stressors that follow make this time extremely challenging for young people. Emerging adults struggle with external and internal pressures such as test anxiety and low performance in academia that must be targeted through research. After targeting these pressures, it is essential to discover methods to alleviate them during an already complicated stage of life.

One of the internal pressures that harm emerging adult’s academic outcomes is the struggle with self-esteem. To identify methods of improving one’s self-esteem and how that affects test performance, researchers tested the effect of beautifying one’s appearance. In a study conducted by Palumbo et al. (2017), the researchers studied whether wearing makeup affects a female college freshman’s test performance. The researchers collected three groups that reported on their self-confidence before and after one group applied makeup, one group colored, and one group listened to positive music. Then, the groups took the same exam on the material they all studied prior. The researchers found that participants had elevated self-esteem after applying makeup which led to higher test scores on an exam than participants without makeup. The researchers also found that two-thirds of the groups reported an elevated mood after listening to music and applying makeup. From this research, conclusions can be drawn that positive mood and self-confidence, which can come from beautifying one’s physical features, has a positive effect on exam performance.

Researchers have also found that the internal pressure of low self-esteem and its negative effect on
academic performance appears not only just in emerging adulthood, but it begins as early as young adolescence. Alves-Martins et al. (2002) sought to find the different self-esteem levels in students who received good and poor grades in school. The researchers also examined what methods these students used to manage any low self-confidence. Thirteen- to nineteen-year-old Portuguese students were tested with two self-report scales asking about their attitudes towards themselves and academics in general. The researchers found that that the younger a student was, the lower their self-esteem was when they performed worse in school. To improve this low self-esteem about academics, the researchers found that older eighth-grade students were likely to seek validation from romantic relationships instead. The researchers also found that the lower a student’s academic performance, the less importance that student placed on school. This research suggests that not only does self-esteem influence academic performance at an early age, but negative performance can negatively impact self-esteem even more.

The instability of an individual’s self-esteem, which is more likely to be present in emerging adulthood, is an additional factor in performing worse in academic environments. Research by Zeigler-Hill et al. (2013) suggests that the instability of self-esteem predicts lower academic performance in college students. The researchers conducted two studies to find how both American and Chinese college students with unstable self-esteem perform in school using self-report measures. The researchers found that both groups reported similar levels of unstable self-esteem and disinterest in school; however, Chinese participants had lower self-esteem but placed less importance on school than the American participants. The researchers concluded that regardless of cultural differences, self-esteem instability was linked to worse academic outcomes. During this time when emerging adults are trying to navigate their place in the world, their self-confidence can be vulnerable to instability, which can be linked to the academic struggles they face.

Low self-esteem, however, is not the only internal pressure at play when it comes to poor academic outcomes in young students. In addition, researchers have found that the presence of test anxiety can be linked with low academic performance. A study conducted by Kestenbaum and Weiner (1970) investigated whether exam scores were influenced by academic motivation or testing anxiety. The study consisted of seventh and eighth graders who were measured on their test anxiety and attitudes surrounding achievement via self-report measures. The participants then took a standardized reading test, and their results were compared. The results revealed that among young adolescents, those with high test anxiety performed worse on the test than their fellow peers. The researchers also found that those with high achievement motivation performed higher on that same exam. These findings reveal that anxious test-takers score worse on tests, which leads to overall low academic performance. In young adolescence, students are already struggling with the nervous feelings and anxious thoughts surrounding academia that we see continue to snowball in emerging adulthood.

In addition to young students, emerging adults struggle with testing anxiety, which has a negative influence on their academic outcomes as well. In a study conducted by Naveh-Benjamin et al. (1997), the researchers analyzed students’ ability to retain knowledge from studied material immediately versus years after, specifically in anxious test-takers. The participants in the study were American college students who self-reported their test anxiety and were tested on course-related material—some at the end of the course, others, months later. The results suggest that anxious test-takers know less information and have difficulty organizing their knowledge when being tested immediately after learning information. However, the study found that those same test-anxious students
performed better years after learning the information. These findings suggest that test-anxious students have lower performance in the traditional college testing and learning environment. In America, where college students’ performance is generally measured by their information retention after a short period, test-anxious college students are disadvantaged.

While past research found a negative relationship between academic performance and test anxiety and a positive relationship between academic performance and self-esteem, test anxiety was found to be linked with one’s ego and self-concept as well. A study conducted by Thomas and Gadbois (2007) wanted to see if Canadian college students’ self-esteem is related to exam performance and the tendency to self-handicap. The students reported their self-esteem, self-concept, test anxiety, and views on their performance. This report was completed both before and after taking a midterm exam on course material. The researchers found that students’ test anxiety predicted academic self-handicapping strategies and lower self-concept. College students tend to self-handicap to protect their self-esteem when it comes to academic performance. Self-handicapping is typically used by students to shift the blame of low scores or lack of knowledge on anything but oneself. By using this strategy, the students were attempting to numb their test anxiety with self-sabotage.

As shown by previous research, self-esteem and academic performance have a positive relationship, which could have a serious negative impact on emerging adults with low self-esteem (Alves-Martin et al., 2002; Palumbo et al., 2017; Ziegler-Hill et al., 2013). This means that having feelings of doubt about oneself and confusion, which is typical in emerging adulthood, is related to low performance in school. This low performance in school can increase levels of stress in these individuals’ lives and lead to even more self-doubt (Alves-Martin et al., 2002). Being that college is an important stepping stone to a successful career in America, poor performance, failing scores, and low GPAs can make matters worse for students at this age. It is important to target this low self-esteem to improve academic outcomes and the livelihoods of emerging adults.

In addition, test anxiety and academic performance were found to have a negative relationship, which means that emerging adults with high test anxiety have low academic performance (Kestenbaum & Weiner, 1970; Naveh-Benjamin et al., 1997). Students’ test anxiety was also found to predict academic self-handicapping strategies and lower self-concept (Thomas & Gadbois, 2007). This research demonstrates the harmful effect of test anxiety on students’ overall performance in academia.

After seeing that test anxiety affects academic outcomes and therefore indirectly self-esteem, it is important to isolate what factors may predict this test anxiety to begin with. Does low self-esteem – in academia, social status, or appearance – predict the tendency to be an anxious test-taker? There is a lack of research on American college students that analyzes the role of self-confidence and general self-esteem concerning the development of test anxiety. In this study, I examined whether low self-esteem predicted the presence of test anxiety. This study utilized a self-report measure to indicate students’ self-perceptions of their academic abilities and general self-esteem. The participants were asked about their nerves during exams and other test-anxious indicators. I hypothesized that students who were unsatisfied with themselves as a person and as a student would be more likely to experience test anxiety in school. This test anxiety may stem from both internal and external pressures placed on emerging adults during this complex stage in their lives. Societal pressures like succeeding in college may result in pressure on a student during high-stakes exams. Internal pressures like low self-esteem may also lead to a similar result, which I intend to analyze through this research.
This research is essential in understanding potential factors at the root of test anxiety. This research provides insight on the key element associated with the presence of this test anxiety — emerging adults’ perceptions of themselves. Test anxiety can be a debilitating experience for students and cause psychological harm. More research must be done to target the internal factors, like low self-esteem, that could be at the root of it.

This research is also important in improving academic outcomes for emerging adults. We know that poor academic performance and scores can be detrimental to a student’s self-esteem, and when esteem is one of the factors at the root of test anxiety, it keeps this harmful cycle moving. Through this research and future studies, we can identify which aspects of low self-esteem may be predicting the presence of testing anxiety and through isolating these factors, hopefully, assist in relieving it.

Method

Participants

The sample that was used in this study included college students between the ages 18 and 28. This sample consisted of students currently enrolled in colleges primarily in New England. This sample served to represent the larger population of emerging adults in colleges across the United States.

The total number of participants in our sample was 111 college students, ages 18-28 ($M = 20.81$, $SD = 1.96$). In terms of gender, 16 (14.4%) participants identified as male, 89 (80.2%) identified as female, 3 (2.7%) identified as both, 2 (1.8%) identified as neither, and 1 (0.9%) selected “Other”. In terms of race/ethnicity, 9 (8.1%) participants were Black or African American, 3 (2.7%) were Asian American, 92 (82.9%) were European American (White, non-Hispanic), 3 (2.7%) were Hispanic or Latinx, and 4 (3.6%) selected “Other”. In terms of college status, 11 were Freshmen (10%), 27 were Sophomores (24.5%), 40 were Juniors (36.4%), 30 were Seniors (27.3%), and 2 (1.8%) selected “Other”. Regarding adulthood status, 20 (18%) felt like they had reached adulthood, 6 (5.4%) did not feel like they had reached adulthood, and 85 (76.6%) felt that in some ways they had reached adulthood, but in some ways, they had not.

Procedure

This study was a collaborative research project within a Research Methods II course at Bridgewater State University. My classmates and I recruited participants via email, the BSU app, and other forms of social media. Email addresses of potential participants were gathered from a convenience sample of friends, family, and peers. My specific recruitment process consisted of sending emails with the survey link to approximately 10 possible participants. My subset of potential participants received an email detailing what the survey consisted of and what it was being used for. My email read:

Hello,

My name is _______________, and I am an undergraduate student at Bridgewater State University. I am conducting research for a project with my Research Methods II Psychology class. We are studying emerging adults ages 18-29 enrolled in colleges in the United States. The purpose of this study is to learn how to conduct and analyze research using the information that you provide via survey. If you choose to participate, you will fill out ~75 closed-ended survey questions regarding your life as both an emerging adult and a college student. The survey will touch on topics such as anxiety, self-esteem, and more. I encourage you to click the link below to participate as you will be providing BSU students with the opportunity
Physiological test anxiety. Physiological test anxiety can be conceptually defined as the physical symptoms of nervousness that one experiences during an exam. Physiological test anxiety was defined as the frequency one experienced rapid heartbeat, nausea, sweating, etc. during exams. Question 82 asked, “How often do you experience physical symptoms (rapid heartbeat, nausea, sweating, etc.) while taking a course-related exam?” with four response options of (1) Always, (2) Sometimes, (3) Rarely, (4) Never. After reverse-scoring, higher scores indicated higher levels of physiological test anxiety.

Academic self-esteem. Academic self-esteem can be conceptually defined as one’s own feelings about their academic abilities. Academic self-esteem was defined in this survey as the participant’s feelings about their ability to receive a good test score. Item 83 stated, “Regardless of how much I prepare, I will not perform well on a course-related exam” to which the participant ranked their stance as 1 (Strongly Agree), 2, 3, or 4 (Strongly Disagree). Higher scores indicated higher levels of academic self-esteem. Item 84 is a reverse-score of the previous item and states, “I can perform well on a course-related exam if I try.” The participant again ranked their stance as 1 (Strongly Agree), 2, 3, or 4 (Strongly Disagree). After reverse-scoring, higher scores indicated higher levels of academic self-esteem. The two measurements of the academic self-esteem variable had acceptable internal consistency (α = .77).

Test-taking confidence. Test-taking confidence can be conceptually defined as one’s self-esteem related to their strategies of test-taking. Test-taking confidence was defined in this survey as to how good of a test-taker one thinks they are as compared to their peers. Item 85 states, “I believe that I am a better test-taker than the rest of my peers” to which the participant responded with 1 (Strongly Agree), 2, 3, or 4 (Strongly Disagree). After reverse-scoring, higher scores indicated higher levels of test-taking confidence.
To further define self-esteem in the college environment, a Pearson $r$ correlation was run to determine how closely related one’s academic self-esteem was to their confidence in their test-taking abilities. There was a significant positive correlation found between academic self-esteem and test-taking confidence ($r = .62, p < .001$), demonstrating that as confidence that one could do well or receive a good score on an exam increased, confidence in one’s test-taking abilities also increased. These results indicated that confidence in academic performance and test-taking abilities were closely related.

After psychological symptoms of test anxiety were isolated, the relationship between physiological symptoms of anxiety and academic esteem/test-taking confidence was analyzed. The results of a Pearson $r$ correlation showed that there was a significantly negative correlation between physiological symptoms of test anxiety and test-taking confidence ($r = -.27, p = .004$), demonstrating that as the frequency of physical distress (rapid heartbeat, sweating, nausea, etc.) during exams increased, confidence in one’s test-taking abilities decreased. In addition, there was a significantly negative correlation found between physiological symptoms of test anxiety and academic self-esteem ($r = -.27, p = .004$), demonstrating that the frequency of physical distress (rapid heartbeat, sweating, nausea, etc.) during exams increased, confidence that one could do well on an exam decreased. Additionally, there was a marginal negative correlation found between general self-esteem and physiological symptoms of test anxiety, but this relationship was not significant ($r = -.18, p = .069$). These results indicated that students who experienced frequent physical indicators of test anxiety suffered from a lack of confidence in their academic performance and test-taking abilities as well.

Additional tests were run to determine whether the demographics of the participants played a role in how
Discussion

The purpose of this research was to identify the role that self-esteem plays in the presence of test anxiety in emerging adults. This research also sought to find how academic and general self-esteem differed in their relationship with psychological and physiological symptoms of test anxiety. I hypothesized that students who had frequent anxious thoughts and physical indicators of nervousness during exams have low general and academic self-esteem as well as low test-taking confidence.

The results of this research demonstrated that both low academic self-esteem and low test-taking confidence predicted both psychological and physiological symptoms of test anxiety in participants. This supported my hypothesis in that I predicted that one’s confidence in academia would predict whether they presented symptoms of test anxiety. As academic self-esteem decreased in a participant, mental and physical indicators of test anxiety increased. These findings indicated that one’s self-worth and confidence in academia were greatly related to increased anxious thoughts during exams – more than with physical symptoms of anxiousness. The results also indicated that there was a gender difference among test-anxious individuals such that women experienced anxious thoughts during exams more frequently than men did. There was also a strong relationship between those anxious thoughts and the physical indicators of stress during exams like rapid heartbeat, sweating, and nausea. As the frequency of mental distress during exams increased, so did the frequency of physical distress. These results indicated that psychological and physiological symptoms generally worked together in a test-anxious individual. This emphasizes the complexity of test anxiety and how it can consist of a debilitating combination of psychological and physiological distress among college students. It was also found that general self-esteem had no relationship with

often they experienced anxious thoughts/feelings during exams. To analyze the relationship between gender and psychological symptoms of test anxiety, an independent samples t-test was run. Women scored significantly higher on psychological symptoms of test anxiety ($M = 3.63$, $SD = .57$) than men ($M = 3.00$, $SD = .76$), $t(100) = -3.76$, $p < .001$. These results showed that women experienced anxious thoughts during exams more frequently than their male peers. To analyze the relationship between race and psychological test anxiety, a one-way between-groups ANOVA was run. The results of this test revealed that there was no main effect of race/ethnicity on psychological symptoms of test anxiety, $F(4, 102) = .82$, $p = .516$.

These results showed that race and ethnicity did not play a strong role in experiencing anxious thoughts during a course-related exam. Additionally, a Pearson r correlation found that there was no correlation between age and psychological symptoms of test anxiety, ($r = -.08$, $p = .568$). All these results showed that while women were more likely to experience anxious thoughts during exams, there was no significant difference based on race or age.

Additional tests were run to determine whether a student’s academic self-esteem depended on where they were in their journey of emerging adulthood. The results of a one-way between-groups ANOVA revealed that there was no effect of year in college on academic self-esteem, $F(4, 103) = .533$, $p = .712$. These results showed that a college student’s year in college did not play a role in their confidence that they could perform well on an exam. Additionally, the results of a one-way between-groups ANOVA revealed that there was no effect of feeling like an adult on academic self-esteem, $F(2, 106) = .656$, $p = .521$. Both tests indicated that a college student’s academic performance confidence did not depend on their year in college or whether they felt like an adult.
Zeigler-Hill et al. (2013) found that regardless of cultural differences among Chinese and American participants, self-esteem instability was linked to worse academic outcomes. Although my research did not consider actual performance, it measured self-esteem and beliefs about one’s ability to perform well. The results of my research supported this in that race and ethnicity did not influence whether a student experienced frequent psychological symptom of anxiety during exams. These results suggest that cultural and racial differences do not play a large role in self-esteem, academic performance, or test anxiety. However, a limitation of this research is the unequal sample size between these groups. Being that most participants were European American (82.9%), this may have played a role not finding differences between ethnic groups.

In addition to the effect of self-esteem on performance, Kestenbaum and Weiner’s (1970) research revealed that among young adolescents, those with high test anxiety performed worse on a test than their fellow peers. The results of my research supported this finding in that students were more likely to experience symptoms of test anxiety if they felt that they could not perform as well on an exam as the rest of their peers. The confidence in performance of the participants within my sample aligned with the actual performance of the group in Kestenbaum and Weiner’s (1970) sample, even over half a century later. These similar results may have been found because many of the emerging adults in my sample felt like they had not fully reached adulthood, like the young adolescents in Kestenbaum and Weiner’s study.

In addition, Alves-Martins et al. (2002) found that the lower a student’s academic performance, the less importance that student placed on school. However, my findings suggest that participants who had lower confidence that they could perform well were more anxious while taking exams. Being nervous about an exam or score would therefore insinuate that the student placed more importance on that grade and school in general, contradicting the previous research. Perhaps this difference could be due to the difference in age of participants, the culture of participants, or the time gap between the two studies. The previous study used only Portuguese students ages 13-19 and was conducted in the early 2000s.
support and expand on this finding in that anxious test-takers were not confident in their test-taking abilities and did not feel prepared to receive a good score on specifically a course-related exam. These findings both highlight the role of the traditional college testing environment in an individual’s test anxiety.

Thomas and Gadbois (2007) found that students’ test anxiety predicted academic self-handicapping strategies and lower self-concept, meaning that test-anxious students were more likely to self-sabotage. To support these findings, my results demonstrated that students who were more anxious during exams were more likely to experience self-doubt in academia. Perhaps this is because self-doubt and self-sabotage could be related, as one who feels incapable may prevent themselves from experiencing failure.

Previous research has demonstrated the impact that low self-esteem and test anxiety can have on academic performance. My research highlighted the role that low academic self-esteem played in the development of that test anxiety. However, there were some limitations of this study. If I were to conduct an additional study on this topic, I would better investigate the cross-cultural, locational, and gender differences in the presence of test anxiety by using a more representative sample. This study included primarily female (80%) and White (83%) students attending colleges on the East Coast of the United States. I anticipate that in a more representative sample, we would see higher rates of test anxiety due to differences in the factors linked to it and important cross-cultural differences as Zeigler-Hill et al. (2013) found in their study. In addition, I would add another variable in addition to self-esteem that could potentially be linked to test anxiety, like parental pressures. The addition of another variable could explain whether low academic self-esteem is working alone in the development of test anxiety, which I anticipate it is not. Other external pressures that emerging adults experience during this stage of life should be examined when it comes to testing anxiety.

From the results of this research, we see that college students who have low test-taking and performance confidence also present symptoms of test anxiety. These results and those of previous research suggest that self-esteem, academic performance, and test anxiety are interconnected. Future research should expand upon these results and dive deeper into the three-way relationship of these variables. It is important to identify how self-esteem impacts performance and how that may impact test anxiety – and the various combinations of these variables. How do the three of these interact in an emerging adult? What additional external factors can be controlled to relieve test anxiety and improve esteem and performance in academia?

Future research must explore the additional factors at play in an emerging adult’s symptoms of test anxiety.

These results demonstrate that academic self-esteem plays a large role in the presence of test anxiety. The results also illustrate the dual role that mental and physical indicators of stress play in the test-taking experiences of test-anxious students. Educators must put in extra effort because these symptoms of debilitating test anxiety are not always physical, meaning they could be harder to recognize. These findings emphasize that students’ anxious thoughts during exams are related to feeling like they cannot receive a good grade or perform as well as their peers. This could be because students who do not have confidence that they can achieve success in academia carry a great burden when it comes to exams. This burden can lead to anxious thoughts and potentially self-handicapping strategies to numb feelings of failure. In recognizing these factors, educators and test proctors can practice mindfulness exercises or other strategies to improve one’s confidence and overall mindset before exam time. These findings will also allow school counselors,
aides, and educators to recognize the combination of physical and mental symptoms of test anxiety and treat them as needed. In understanding that low academic self-esteem is at the root of test anxiety, students can both better help themselves and be better assisted in treating said anxious feelings. The results also indicate that numerous emerging adults struggle with test anxiety, despite it not being talked about much. Test anxiety can be debilitating for those who struggle, and it can interfere with everyday life. In addition, low general and academic self-esteem, as many participants have displayed, can severely impact one’s life and mental health. Students and society at large need to be able to identify these anxious feelings and understand how to self-soothe and deal with these strong emotions. Educators, counselors, and other members of the college community should raise awareness of this shared experience as well and promote ways of increasing academic self-esteem to potentially relieve symptomatic test anxiety in students. Altering modern approaches to pedagogy and test administration should also be considered in reducing the test anxiety that emerges in the traditional college classroom setting. The self-esteem and mental health of college students in academia must be prioritized to effectively reduce anxiety, improve performance, and promote an overall better quality of life.

References


About the Author

Shannon McCormack is a junior Honors student double majoring in Elementary Education and Psychology. Her research was completed in Spring 2021 in BSU’s Research Methods II course under the mentorship of Dr. Joseph Schwab (Psychology). In addition to her work in the field of psychology, she has also completed research on the topics of racial justice and equity in education. Shannon has showcased her research at three of BSU’s Undergraduate Research Symposium events. For her Honors thesis work she will continue conducting her own research on the topic of antiracist education.