A Comparison of Anxiety Levels Among College Students

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A Comparison of Anxiety Levels Among College Students

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ABSTRACT
The purpose of this causal-comparative study was to compare the differences in anxiety levels among college students by their classification, gender, major, and semester hours taken. Participants were a convenience sample of 104 undergraduate and graduate college students, and were from 22 universities primarily located in the southeastern region of the United States. The participants completed a survey in which they selected their classification, gender, major, number of semester hours taken, race, ethnicity, and native language. The survey also included 20 Likert-scaled questions from the Zung Self-rating Anxiety Scale (Zung, 1971) that measured levels of anxiety based on symptoms experienced by the individual. An analysis of the results revealed that there is no significant difference in anxiety levels among college students of different classifications or by the number of semester hours taken. However, the results also revealed that there is a significant difference in anxiety levels among male and female college students and students with different majors.

INTRODUCTION
College students face many obligations that can potentially lead to increased levels of stress and anxiety. According to the American College Health Association, 66% of undergraduate students reported experiencing overwhelming anxiety during the 2019 spring semester (American College Health Association [ACHA], 2019). Anxiety, when unaddressed, can have detrimental effects on an individual's health. Roest, Martens, Jonge, and Denollet (2010) reported an association between anxiety and a 26% increased risk for incidents of coronary heart disease, and that there is a 48% increased risk for cardiac death among anxious individuals. Given these statistics, it is imperative for universities to seek a better understanding of the mental health needs of students.

PREVALENCE OF ANXIETY AMONG COLLEGE STUDENTS
Anxiety is a natural response to stress that affects all individuals in various ways. According to the American Psychiatric Association (2013), a variety of disorders such as generalized anxiety disorder, panic disorder, social anxiety disorder, and phobias, are accompanied by high levels of anxiety. Common symptoms of those who have anxiety include restlessness, fatigue, difficulty concentrating, irritability, difficulty sleeping, muscle tension, trembling or shaking, and chest pain (American Psychiatric Association [APA], 2013). Thus, anxiety can become a debilitating and distracting burden for any individual. College students are particularly prone to experiencing mental health issues, such as anxiety. Zivin, Eisenberg, Gollust, and Golberstein (2009) found that over one-third of college students have a persistent mental health problem, many of which do not receive treatment. Additionally, Soet and Sevig (2006) reported
that one-third of college students have received mental health treatment at some point in their lives, but only 20% of that group are currently receiving treatment. These numbers indicate that college students who are affected by a mental health issue may be unaware of treatment options or hesitant to seek them out. In order to appropriately respond to these mental health issues, the circumstances that may have a negative impact on mental health must be understood.

CAUSES OF ANXIETY AMONG COLLEGE STUDENTS

Feelings of anxiety and other mental health issues may be a result of various stressors experienced by a college student. Some of the main causes of stress college students may encounter include financial obligations, social interactions, and academic workload. Andrews and Wilding (2004) found that the financial burden many university students have, due to tuition and other expenses, can impact their academic achievement and increase their levels of anxiety and depression. Similarly, Jones, Park, and Lefevor (2018) found that academic concerns and financial stress were highly correlated with anxiety among college students. As the cost of college tuition gradually increases in the United States, this stressor may continue to contribute to anxiety among college students. In addition to the stress from financial obligations of attending college, social interactions may also contribute to mental-health stability among college students. With a diverse student population at most universities, many students may experience different social interactions. Andrews and Wilding (2004) determined that relationship problems, possibly due to feelings of shame or humiliation, could be a reliable predictor of anxiety among college students. College students may experience the need for social acceptance which could cause conformity or withdrawal. Lenny, Doleck, and Bazelaïs (2019) found that students who have a strong need for social acceptance may actually perform better academically, but when the need for social acceptance is not met, students can experience feelings of isolation. Feelings such as loneliness and anxiety caused by social pressures and financial burdens may be particularly difficult to cope with when accompanied by stressors due to academic expectations.

In order to be a successful student, focus, concentration, and adequate sleep are all required. However, high levels of anxiety can lead to restlessness, difficulty concentrating, and sleep disturbance (APA, 2013). Each of these symptoms have the potential to disrupt academic performance. Although there are numerous factors that contribute to anxiety in the general population, striving for academic achievement may be a major contributor among college students. Jones et al. (2018), found that anxiety among college students was highly related to academic concerns. These concerns could include time management, managing course rigor, or performance expectations. Additionally, anxiety and other mental health issues have been shown to have a negative effect on exam performance (Andrews & Wilding, 2004; Woldeab & Brothen, 2019). These findings suggest that students who experience anxiety, possibly caused by academic concerns, are at a greater risk to perform poorly on exams. The culmination of financial burdens, social interactions, and academic expectations places a college student at a greater risk for increased levels of anxiety.

MENTAL HEALTH AND STUDENT CLASSIFICATION

Mental health issues, such as anxiety, affect many college students to some degree. However, there may be differences in anxiety levels between students based on a number of factors which include whether they are undergraduate or graduate students, their classification, their gender, citizenship status, or degree. Wyatt and Oswalt (2013) found that undergraduate students reported higher levels of traumatic experiences compared to graduate students. Undergraduate students also reported feelings or behaviors that are associated with poor mental health at a higher rate than graduate students. Undergraduate students also more frequently reported that their mental health issues had a perceived negative effect on academic performance (Wyatt & Oswald, 2013). This information suggests that there are potential differences between undergraduate and graduate students that lead to disparities between their mental-health states.

Mental health issues may also vary between the classifications of undergraduate students. Wu, Sang, Zhang, and Margraf (2020) found that depression levels were the lowest among freshmen and the highest among seniors, but anxiety levels were the highest for both freshmen and seniors. Juniors were determined to have better mental health compared to the other classifications (Wu et al., 2020). Likewise, Tuncay, Müdüröğlu, and Bulut (2020) found that students in all four undergraduate years reported relatively high levels of academic-related stress. Year one students reported the highest levels of academic-related stress and year three students reported the lowest levels of academic-related stress. It is, therefore, possible that undergraduate students experience unique stressors during different years throughout their college experience. It is also possible that freshmen and seniors may be presented with a greater number of stressors compared to sophomores and juniors.

GENDER AND MENTAL HEALTH AMONG COLLEGE STUDENTS

In addition to the differences in the levels of anxiety between classifications of college students, there may also be differences in mental-health issues by gender. Bottesi, Martignon, Cerea, and Ghisi (2018) reported that both males and females have an inclination to fear uncertainty, but females display higher levels of negative cognitive orientation and cognitive avoidance. Dugas and Koerner (2005) defined cognitive avoidance as the process by which an individual replaces or suppresses distressing thoughts or memories, which may produce short-term results for alleviating stress, but over time, increases worry and anxiety. Negative cognitive (problem) orientation occurs when an individual views problems as a threat to their mental and physical well-being, doubts their ability to solve problems, and when confronted with problems, becomes emotionally distraught (Dobson, 2001). Females may experience more stress and anxiety as a result of higher levels of cognitive avoidance and negative cognitive orientation, a notion supported by Tuncay et al. (2020). Furthermore, Jones et al. (2018) reported that sexual minorities experience above-
average rates of distress. Ultimately, the levels of negative
cognitive orientation, cognitive avoidance, or distress
experienced by females may contribute to their elevated levels
of anxiety. Beyond the differences in mental health by gender
among college students, other contributors to stress for
undergraduate students include adjusting to the college
atmosphere. Evidence suggests males adjust quicker to college
living compared to females (Enochs & Roland, 2006).
Consequently, females may be more particularly vulnerable to
experiencing stress during their college years compared to
males.

NATIVE LANGUAGE AS A CONTRIBUTOR TO ANXIETY
AMONG COLLEGE STUDENTS

Another factor that may constitute differences in the levels of
anxiety and stress among college students is native language.
Cheng, Horwitz, and Schallert (1999) found that students who
learned English as a second language had lower self-confidence
and were concerned with flaws when speaking. Similarly,
Gregersen and Horwitz (2002) found that anxious language
learning students had more tendencies to procrastinate, were
more concerned about the opinions of others, and were more
centered with their errors learning English compared to non-
anxious language learners. This information indicates that
students who are learning English may experience higher levels
of anxiety due to feelings of inadequacy in speaking the
language.

There are a variety of factors that contribute to anxiety levels
among individuals. College students are at particular risk of
experiencing several of these contributing factors simultaneously, such as financial stress, academic expectations,
social pressures, being a sexual minority, or having to learn a
different language. Understanding the prevalence of anxiety
among college students, and the various contributing factors,
will enable universities to better support the mental health of
their students.

PURPOSE OF STUDY

The purpose of this causal-comparative study was to compare
the differences in anxiety levels among college students by their
classification, gender, major, and the number of semester hours
taken. Classification is defined in this study as the cumulative
number of hours acquired by each student specified by the
following: 1-26 for freshman, 27-59 for sophomores, 60-89 for
juniors, and 90+ for seniors. This study also compared differences in anxiety levels based on gender, major, and the
number of semester hours, and native language.

Due to the worldwide events that affected the format in which
many universities provided instruction (on-campus instruction
changing to online instruction), it is imperative for health
professionals in the higher education community to carefully
monitor students’ mental health. Anxiety affects many college
students and can become a problematic health concern when
unaddressed. New information regarding the current anxiety
levels of college students may provide universities with a better
understanding of the mental health needs of college students.

HYPOTHESES

H1 – It is hypothesized that there is a significant difference in
anxiety levels between college students of different
classifications.

H2 – It is hypothesized that there is a significant difference in
anxiety levels among college students by gender.

H3 – It is hypothesized that there is a significant difference in
anxiety levels among college students based on major.

H4 – It is hypothesized that there is a significant difference in
anxiety levels among college students based on the number of
hours enrolled in a semester.

METHOD

PARTICIPANTS

The participants for this study were a volunteer sample of 104
undergraduate and graduate college students from 22
universities primarily located in the southeastern region of the
United States. The demographic characteristics of the college
students that participated in the study are presented in Table 1.

Table 1: Demographic Characteristics of College Students

<table>
<thead>
<tr>
<th>Classification</th>
<th>Male n = 23</th>
<th>Female n = 81</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>African</td>
</tr>
<tr>
<td>Freshman</td>
<td>2 (33)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Sophomore</td>
<td>3 (16)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Junior</td>
<td>4 (14)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Senior</td>
<td>8 (25)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Graduate</td>
<td>2 (12)</td>
<td>1 (5)</td>
</tr>
</tbody>
</table>

INSTRUMENTATION

The primary instrument used for this study was the Zung Self-
Rating Anxiety Scale (SAS) shown in the Appendix (Zung,
1971). The scale consisted of 20 Likert-scaled items that
measured levels of anxiety based on symptoms experienced by
the individual. The anxiety levels were measured by four
options stating the frequency of the symptoms ranging from “a
little of the time” to “most of the time.” Each item was assigned
a score ranging from 1 to 4. The scores were added to determine
the overall level of anxiety based on four ranges which included
the following: 20-44 Normal Range, 45-59 Mild to Moderate
Anxiety Levels, 60-74 Marked to Severe Anxiety Levels, 75
and above Extreme Anxiety Levels. The internal consistency
was measured for the instrument and considered acceptable
with a Cronbach’s alpha of .84 (Dunstan, Scott, & Todd, 2017).
In order to obtain demographic information that was true during
the Spring semester of 2020, students self-reported their
classification, college attended, gender, major, semester hours
taken, race, ethnicity, and if English is their native language.
The college students selected their major from the following
categories: business, STEM (science, technology, engineering,
and mathematics), arts/humanities/social sciences (A/H/S),
education, and other. Other relevant demographic information,
such as native language, race, and ethnicity was also obtained,
but it was not used as an independent variable for this study.
Native language was defined by two categories: “Native
English Speaker” and “Non-Native English Speaker.” Race was defined by the following categories: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White, and the two categories relating to ethnicity included "Hispanic or Latino" and "Not Hispanic or Latino" (National Institutes of Health [NIH], 2015).

PROCEDURE
The Zung Self-Rating Anxiety Scale was converted into a Google form that also included relevant demographic information. Upon IRB approval for this non-experimental, causal-comparative study, the survey was sent to college students via email and social media. Students were informed that their participation in the study was voluntary and represented their consent to collecting the data. Participants were also informed that they could stop taking the survey at any time. Data from the survey was imported to Google sheets, and the results were scored by the researchers. To analyze the data, a one-way analysis of variance (ANOVA) was used to determine the level of anxiety among college students with the independent variable of classification. Similarly, the one-way ANOVA was also used to determine the level of anxiety with the independent variable of major. Also, a one-way ANOVA was used to determine the level of anxiety with the independent variable of number of hours taken. Independent samples t test was used to measure anxiety levels of college students with the independent variable of gender. The hypotheses were tested at an alpha level of 0.05.

RESULTS
A one-way ANOVA was calculated to compare the mean differences of anxiety level scores between the classification of college students. There was no difference found F(4) = 1.03, p > 0.05; therefore, the null hypothesis cannot be rejected. The results are shown in figure 1.

![Figure 1. The mean SAS score of college students and their classification](image1)

An independent t test was used to determine the mean differences in anxiety level scores between male and female college students. There was a significant difference found T(109) = -3.54, p < 0.05; therefore the null hypothesis was rejected and the alternative hypothesis was supported. The results are shown in figure 2.

![Figure 2. The mean SAS score of college students and their gender](image2)

A one-way ANOVA was calculated to compare the mean differences of anxiety level scores between the majors of college students. There was a significant difference found F(4) = 2.59, p < 0.05; therefore, the null hypothesis can be rejected and the alternative hypothesis supported. Further post hoc analysis with Tukey’s test revealed significant differences between education and STEM majors. The results are shown in figure 3.

![Figure 3. The mean SAS Score of college students and their major](image3)
the null hypothesis cannot be rejected. The results are shown in figure 4.

![Figure 4](image)

**DISCUSSION**

**FINDINGS**

This study found significant differences in anxiety level scores between male and female college students. Similarly, this study provided evidence that there were significant differences in anxiety level scores between the majors of college students, specifically between education and STEM majors. However, it was determined that there was no significant difference in anxiety level scores among college students of different classifications or among college students based on the number of semester hours.

Seniors displayed the highest mean anxiety score among the classification of college students (Figure 1), although, it was not statistically significant. These results are comparable with findings that freshmen and seniors display the highest levels of anxiety among college students (Tuncay et al., 2020; Wu et al., 2020). The results of this study, showing that female college students experience higher levels of anxiety compared to male college students (Figure 2), are consistent with the findings that female college students experience higher levels of stress compared to male college students. (Bottesi et al., 2018; Jones et al., 2018, & Tuncay et al., 2020). Further research is needed to determine the generalizability of the results from this study.

**IMPLICATIONS**

A notable implication from the results of this study is the importance to educate university students, professors, and faculty about anxiety and the associated risk factors. Certain cohorts of college students may be more likely to experience anxiety compared to others. This study found that female college students had significantly higher anxiety level scores than male college students. This does not indicate that male college students do not experience anxiety, but female college students may be more likely to experience anxiety at higher levels than male college students. This study also found that college students majoring in education reported significantly higher anxiety levels than college students majoring in science, technology, engineering, and mathematics. This indicates that female students and students in educational pathways may need additional support from universities.

There are implications that may be drawn for practice or policy purposes. These do not pertain only to professors and staff serving students at the university level, but the implications may also be able to assist mental health professionals serving other populations as well. Becoming aware of differing levels of anxiety and also anxiety-producing factors may provide insight for treatment. This could include monitoring the anxiety levels and teaching specific coping mechanisms to the affected population to improve overall mental health, academic scores, and self-esteem. The implication for policy changes may vary depending on resources available to the University and the population of students. Overall, many college students reported experiencing a variety of anxiety symptoms, so screening techniques and monitoring systems should be available to students so that those students experiencing higher levels of anxiety are able to receive appropriate assistance.

**LIMITATIONS**

There were several limitations in this study that threatened external validity. First, the participants were volunteers, and many of the volunteers were attending colleges in the southeastern region of the United States. There were no participants from colleges in other countries. There was also a small sample size for male participants compared to female participants. Few participants were business majors, and also few participants were enrolled in more than 18 semester hours. The study was composed of 88% white participants, which is not representative of the entire college student population across the United States. Students also completed the survey two months following the end of the Spring semester, which may have affected their perception of the severity of their anxiety symptoms during the semester. Additionally, a potential threat to internal validity was that the study did not specify whether students were to base their classification on the previous spring semester or the upcoming fall semester. This may have led to inconsistencies in student responses to their classification.

**FUTURE RESEARCH**

Anxiety has been shown to be prevalent among college students, however, future studies could research the differences among college students for other mental health disorders such as depression. Future studies could seek to determine differences in anxiety levels and academic achievement among students receiving either traditional or online instruction. This may be beneficial to mental-health professionals and educators as online instruction becomes more prevalent. Additionally, future studies could be conducted to look for differences in anxiety levels among international college students in the United States. Further research in these areas may benefit colleges that are interested in creating programs that educate students on how to manage their anxiety within the college setting.
REFERENCES


ABOUT THE AUTHORS

Kendall Naceanceno is from Clovis, New Mexico and currently teaches middle school science in east Arkansas. He graduated from Harding University with a Master of Arts in Teaching, and is pursuing an endorsement in educational leadership for curriculum and instruction through Harding University. His future goals include continuing serving in the education field and conducting research to improve the quality of the educational system.

Sara Keith Capps graduated from Harding University in December 2020 with her Educational Specialist degree in Clinical Mental Health Counseling. She is now pursuing a counseling career in Middle Tennessee, hopefully relating to her research interests of mental health among college students.

Rachel Whittenburg is a Harding University graduate with a Master’s in Reading Education. She graduated with her Bachelor of Music Education from University of Arkansas at Little Rock in 2014. Rachel is a teacher at Lonoke Middle School and High School where she teaches Choir, Music, and is a Dyslexia Interventionist.

Alexis Ortiz is a Mental Health Counseling graduate student from Searcy, Arkansas. She graduated with her Bachelor of Science in Psychology from Harding University in 2016. Alexis anticipates completing her Master of Science and Educational Specialist degrees at Harding University in May 2022.
### Zung Self-Rating Anxiety Scale (SAS)

For each item below, please place a check mark (✓) in the column which best describes how often you felt or behaved this way during the past several days. Bring the completed form with you to the office for scoring and assessment during your office visit.

<table>
<thead>
<tr>
<th>Place check mark (✓) in correct column.</th>
<th>A little of the time</th>
<th>Some of the time</th>
<th>Good part of the time</th>
<th>Most of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 I feel more nervous and anxious than usual.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 I feel afraid for no reason at all.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 I get upset easily or feel panicky.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 I feel like I'm falling apart and going to pieces.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 I feel that everything is all right and nothing bad will happen.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 My arms and legs shake and tremble.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 I am bothered by headaches neck and back pain.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 I feel weak and get tired easily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 I feel calm and can sit still easily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 I can feel my heart beating fast.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 I am bothered by dizzy spells.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 I have fainting spells or feel like it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 I can breathe in and out easily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 I get feelings of numbness and tingling in my fingers &amp; toes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 I am bothered by stomach aches or indigestion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 I have to empty my bladder often.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 My hands are usually dry and warm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 My face gets hot and blushes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 I fall asleep easily and get a good night's rest.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 I have nightmares.</td>
<td></td>
<td></td>
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</tbody>
</table>