

Stress, Anxiety, and Depression: An Analysis of 21st Century Higher Education Students

Darren Iwamoto and Hans Chun

*School of Education and Behavioral Sciences, Chaminade University of Honolulu
Honolulu, Hawaii, USA
Corresponding Author; Darren Iwamoto*

ABSTRACT: *This study was conducted to explore the levels of stress, anxiety, and depression that students in higher education face today at a university located in the Pacific. Participants were given the 21-item Depression, Anxiety, and Stress Scale (DASS-21) and an open-ended response page where they could document their stressors and how they coped with them. The results showed no significant mean differences between the different classifications as students matriculate and between commuter and residential students. Significant differences were found primarily between males and females. When looking at the three scales, significant mean differences were found in stress and anxiety, whereas there was no significant difference in depression when comparing males and females. The mean stress, anxiety, and depression levels fell within the moderate level, which was concerning. The data suggests that targeted wellness programming focusing on building stronger relationships with peers, faculty and staff, increasing social connectedness by targeting student engagement in and out of their classes, and assisting students with coping skills could have a positive impact on the student experience.*

KEYWORDS: *Stress, anxiety, depression, higher education, wellness.*

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I. INTRODUCTION

Being a student in higher education is an experience that brings self-discovery, new experiences, and stress (Hales, 2009). Bhujade (2017) reports that 21st century college and university students deal with a unique amount of stressors and have more complex problems today than they did over a decade ago. Higher education calls for a significant transition, where students experience many firsts. Stressors in higher education include greater academic demands, changes in social life, and being on your own in a new environment. Some salient problems specific to students are time pressure, fear of failure, struggle to establish identity, the pressures of academic excellence and tough competence. Students come to a college or university in an era of high expectation of success with almost everything in their life being geared toward their post-high school transition. The more selective the college or university, the more students arrive with feelings of inadequacy (EstroffMarano, 2015).

The path to a college or university is one of growth, perseverance, and reflection. Students may arrive psychologically burned out from building portfolios of excellence. These students are the ones that are primed to crumble at the first significant disappointment they encounter (EstroffMarano, 2015). Competition can be much more significant in higher education and feelings of inadequacy can stem from academic stressors (Bhujade, 2017). In addition, current students have financial stressors with the rising cost of going to a college or university (Rosenberg, 2018). As tuition continues to increase, financial aid packages dwindle, commuter costs increase, and lifestyle spending escalates, additional strain is placed on personal finances, and thus many students work full-time or part-time while completing their education (Landow, 2006).

Anxiety and depression are psychological and physiological states that a person can experience when there is a stressor present. When stress is present, our natural flight-or-freeze response is activated which prolonged could result in organic changes in our brain and affects our cognitive, physical, emotional, and behavioral abilities (Santee, 2013). College and university students experiencing psychological difficulties have an array of problems that interfere with their ability to be fully involved in the classroom. These problems include feelings of hopelessness, exhaustion, and poor sleep quality (Lindsey, Fabiano, & Stark, 2009).

Between 2009 to 2015, students visiting counseling centers increased by an average of 30% (Reilly, 2018). The 2013 National College Health Assessment reported that almost a third of college students felt very depressed to function and more than half experienced overwhelming anxiety (Howard, 2015). In 2017, nearly 40% of college students felt so depressed the prior year that it was difficult for them to function. Sixty-one percent said they felt overwhelming anxiety according to an American College Health Association survey of

more than 63,000 students at 92 schools (Reilly, 2018). Anxiety and depression have afflicted students at alarming rates and are the top reasons for seeking counseling (Rosenberg, 2018). UCLA researchers used an online program to measure the anxiety and depression level of nearly 4,000 students. About 45% of students screened were identified with at least mild levels of depression or anxiety and about 23% used campus counseling services which had campus mental health services overwhelmed with demand (Quilantan, 2018).

During the 2015-2016 academic year, a survey by the Association for University and College Counseling Center Directors found 51% of higher education students reported symptoms of anxiety when visiting campus counseling centers, followed by depression at 41%. Colleges and universities are working to relieve student stress and address the record highs of anxiety and depression diagnoses (Howard, 2015). Due to these record highs, colleges and universities are the largest employer of psychologists in the country (EstroffMarano, 2015). The average university has one professional counselor for every 1,737 students, but this is fewer than the minimum recommended by the International Association of Counseling Services of having one therapist for every 1,000 to 1,500 students. Some counselors are overwhelmed by the increase in students asking for help (Reilly, 2018).

College and university students have been shown to be at higher risk of psychological distress. As more are seeking university education, there is need for further action by higher education policy and decision-makers and more integrated approaches to the development of resilience, mental health promotion, and early intervention (Schofield, O'Halloran, McLean, Forrester-Knauss, & Paxton, 2016). "Mental health issues are prevalent and increasing on college campuses. Prior research indicates that students' depression, anxiety, and stress are all related negatively with academic achievement, but little research identifies reasons why students with psychological difficulties do not perform as well as their peers without these difficulties" (Carton & Goodboy, 2015, p. 180). Students who were more depressed, anxious, and stressed reported less interaction involvement in class (Carton & Goodboy, 2015).

Over the past several semesters, a noticeable trend became evident. Students would begin the semester excited and motivated. As the semester progressed, students would disappear. This in and of itself is common, but the students who remained looked tired, stressed, and distracted. The amount of excuses as to why assignments could not be submitted on-time grew. Students, who were once highly motivated are now just trying to survive. Yes, this is a generalization, but this trend is seen in more students than not. These unscientific observations increased concern because the causes of these distractions were not clearly identifiable. Students were on their electronics, but no more than usual. The distractions seemed to be deeper. Students appeared stressed, anxious, and even withdrawn. With the decrease in attendance, there was an increase in emails reporting external challenges that prohibited them from attending or completing their assignments on-time. Was this all an excuse to skip class, procrastinate a little longer, or were there other reasons? This concern was the catalyst for this study. Was there an increase in stress, anxiety, and depression in today's college and university students? If so, what were the causes?

II. METHODOLOGY

The Institutional Review Board (IRB) approved exploratory research study focused on assessing stress, anxiety, and depression levels in higher education students. The purpose of this study was to obtain baseline data for future data-driven wellness programming that will support students' academic performance through targeted social-emotional initiatives. The survey method was used utilizing a convenience sample that consisted of recruiting participants from various classes on campus. The survey consisted of two sections. The first is the Depression, Anxiety, and Stress Scale – 21 (DASS-21) and the second was a qualitative-based questionnaire that asked participants to list their stressors, symptoms of the stressors, and how they coped with the noted stressors. Generic demographic data was also collected in the second section.

Based on its psychometric properties, the DASS-21 was selected as the quantitative instrument due to its relatively high reliability (range of coefficient- α = .82 - .97) and validity (concurrent validity r = .40 - .65) (Osman, Wong, Bagge, Freedenthal, Gutierrez, & Lozano, 2012, p. 1324). In addition, the DASS-21 was short in length, 21 questions, and consulted experts in the field stressed the importance of a shorter assessment tool. Experts in the field reviewed the qualitative questions and considered it valid for this study. Pilot data was collected, and it was deemed that the DASS-21 and the associated open-ended questions were valid for the purpose of this study.

All participants were initially briefed on the purpose of this study. They were then provided the informed consent form to review and sign to indicate their willingness with participating in this study. If a student decided that they did not want to participate, they were reassured that this action would not affect their course grade in any way. For those that agreed to participate, they were then allowed to proceed by filling out the two-part survey. The anticipated length of time needed to complete the two-part survey was approximately 15-20 minutes.

Participants were students in the researchers' classes. The faculty researchers were also able to receive consent from other professors to distribute the two-part survey in their classes. Diversity and equity could not be assured due to a convenience sample being used.

The sample consisted of 255 multi-disciplinary undergraduate students from an institution of higher education located in the Pacific. The sample consisted of 118 first-year students, 80 sophomores, 41 juniors, and 16 seniors. The student population at this site consisted of 68% females and 32% males. Sixty-seven percent are Asian/Pacific Islander, 17% Caucasian, 6% Hispanic, 4% Black, and 6% Other. The diversity within the sample group is representative of this data.

Outcomes were measured using the Depression, Anxiety, and Stress Scale (DASS-21) – 21 items using a 4 point Likert-type scale. "The 21-item shortened version of the DASS is frequently used in non-clinical research to measure mental health factors in healthy adults" (Mahmoud, Hall, & Staten, 2010, p. 1). The results from the DASS-21 were scored and reported based on the Guide to the Depression, Anxiety, and Stress Scale. Further analysis utilized descriptive statistics, t-test, and one-way analysis of variance (ANOVA) to compare and analyze the differences in the mean scores. A thematic analysis was used to analyze and report on the qualitative findings generated from section 2 of the survey.

III. DISCUSSION

This is an exploratory quasi-experimental IRB approved study focused on assessing stress, anxiety, and depression levels in higher education students. The purpose of this study was to validate the observations made and see what levels of stress, anxiety, and depression 21st century students in higher education experience. The data from this exploratory study will be used to determine what kinds of support services are needed to support today's college and university students, so that they can thrive in their learning institution. This study will not only inform the researchers on the levels of stress, anxiety, and depression students' experience, but also provide a needs assessment to determine if students require additional targeted social and emotional support to assist them with their academic performance.

Twenty-first century college and university students reported feeling as though expectations on them are high as they embrace a diverse workload when having to process information and first-time experiences at a fast pace while adjusting to new environments with little or no perceived guidance and supervision. Through the course of reviewing the participants' qualitative responses, it was observed that participants did not feel connected to people outside of their peer group. Subsequently, their feelings of stress, anxiety, and depression were internalized.

This study was conducted to determine if additional wellness programming should be introduced at this research site. The data suggests that targeted gender student support programming is recommended. This is because the largest disparity found had to do with the perceived importance of social connectedness. Sixty-nine percent of female participants listed relational issues as a stressor versus 35% of males. All other variables remained similar. This finding supports the social science and higher education literature that females express the value of social connectedness more than males (Chen & Chung, 2007; Hales, 2009). Chen and Chung (2007) found that college males experienced more loneliness than females and that suggests the societal roles may still strongly influence how males and females differ in dealing with stress, anxiety, and depression. Depression was found to be significantly higher in female students (Sailesh, Archana, & Mukkadan, 2016). Overall, students were struggling with balancing academics, work, family needs, extracurricular responsibilities, and personal relationships.

The findings from this study are also relevant for higher education faculty. Faculty typically prepare for class focused on content and the best way in transferring knowledge to their students. What is normally not factored into the development of pedagogy is the emotional state of their students. Being that stress, anxiety, and depression levels were all above the normal range, it became apparent that students may be coming into class already stressed and when academically challenged by faculty, may elevate them to an aroused emotional state that is not conducive to learning. According to Yerkes and Dodson (1908), stress can impact behavior and memory, in particular, one's level of performance (e.g., academic performance and self-efficacy). This is important to address as one's level of matriculation does not appear to have an impact on perceived stress, anxiety, and depression; thus time and experience does not appear to equate with better coping. Based on the findings from this study, it is recommended that wellness programming should focus on social connectedness, working through relationship challenges, and coping strategies to assist students as they strive for academic success.

IV. FINDINGS

Mean scores for the DASS-21 severity ratings are shown in Table 1. All of the mean scores for depression ($M = 13.52$, $SD = 10.07$), anxiety ($M = 12.95$, $SD = 9.65$), and stress ($M = 17.95$, $SD = 9.04$), fell within the moderate range (DASS Severity Ratings shown in Table 2). There was a significant difference for

anxiety, $t(252) = -2.19$, $p = .029$, with females scoring higher ($M = 13.55$, $SD = 9.71$) than males ($M = 10.24$, $SD = 8.91$) as shown in Table 3. Anxiety for females were scored as severe versus males who scored as mild. There were no significant statistical difference for stress, $t(252) = -2.194$, $p = .110$ and depression, $t(252) = -.901$, $p = .369$, in males and females, although males fell in the mild range versus females who were in the moderate range according to the DASS Severity Rating Scale.

	N	Minimum	Maximum	Mean	Std. Deviation
Depression	255	.00	42.00	13.5216	10.06624
Anxiety	255	.00	42.00	12.9490	9.64699
Stress	255	.00	40.00	17.9451	9.04129
Valid N (listwise)	255				

Table 1: Comparing depression, anxiety, and stress

Severity	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Table 2: DASS severity ratings

	Sex	N	Mean	Std. Deviation	Std. Error Mean
Depression	Male	50	12.3600	10.59603	1.49851
	Female	204	13.7941	9.96233	.69750
Anxiety	Male	50	10.2400	8.91355	1.26057
	Female	204	13.5490	9.70869	.67974
Stress	Male	50	16.0800	9.52728	1.34736
	Female	204	18.3627	8.88935	.62238

Table 3: Comparing depression, anxiety, and stress in males and females

Dependent Variable	(I) ClassStanding	(J) ClassStanding	Mean Difference (I-J)	Std. Error	Sig.
Depressionx2	First Year	Sophomore	.96441	1.46516	.913
		Junior	.30343	1.83402	.998
		Senior	-.13559	2.69519	1.000
	Sophomore	First Year	-.96441	1.46516	.913
		Junior	-.66098	1.94309	.986
		Senior	-1.10000	2.77057	.979
	Junior	First Year	-.30343	1.83402	.998
		Sophomore	.66098	1.94309	.986
		Senior	-.43902	2.98211	.999
	Senior	First Year	.13559	2.69519	1.000
		Sophomore	1.10000	2.77057	.979
		Junior	.43902	2.98211	.999
Anxietyx2	First Year	Sophomore	-1.22712	1.39986	.817
		Junior	-1.72468	1.75228	.759
		Senior	1.37288	2.57507	.951
	Sophomore	First Year	1.22712	1.39986	.817
		Junior	-.49756	1.85650	.993
		Senior	2.60000	2.64709	.760
	Junior	First Year	1.72468	1.75228	.759
		Sophomore	.49756	1.85650	.993
		Senior	3.09756	2.84921	.698
	Senior	First Year	-1.37288	2.57507	.951
		Sophomore	-2.60000	2.64709	.760
		Junior	-3.09756	2.84921	.698
Stressx2	First Year	Sophomore	-.65127	1.30970	.960
		Junior	-.38115	1.63942	.996
		Senior	4.07627	2.40921	.330

Sophomore	First Year	.65127	1.30970	.960
	Junior	.27012	1.73692	.999
	Senior	-3.42500	2.47659	.511
Junior	First Year	.38115	1.63942	.996
	Sophomore	-.27012	1.73692	.999
	Senior	-3.69512	2.66569	.509
Senior	First Year	4.07627	2.40921	.330
	Sophomore	3.42500	2.47659	.511
	Junior	3.69512	2.66569	.509

Table 4: Comparing depression, anxiety, and stress between class standings

		F	Sig.	t	df	Sig. (2-tailed)
Depression	Equal variances assumed	1.229	.269	1.126	253	.261
	Equal variances not assumed			1.064	90.348	.290
Anxiety	Equal variances assumed	.290	.591	-.198	253	.843
	Equal variances not assumed			-.195	96.357	.845
Stress	Equal variances assumed	.165	.685	-.044	253	.965
	Equal variances not assumed			-.046	104.546	.964

Table 5: Comparing depression, anxiety, and stress between commuter and residential students

Section 2 of the survey asked participants to list stressors they have experienced during the past week. Based on the thematic coding obtained from section 2 of the survey, two themes separated themselves from the rest of the data set. The first was academic stressors. Ninety-five percent of females reported a school-related stressor while males reported a school-related stressor in 90% of their responses. The second were relationship stressors. Sixty-nine percent of females reported at least one relationship stressor versus males that reported at least one relationship stressor in 35% of the responses. Other themes emerged from the participant responses, but were not measured as outliers: extra-curricular activities, professional aspirations, and family demands.

V. CONCLUSION

In this exploratory quasi-experimental study the levels of stress, anxiety, and depression in 21st century university students from a highly diverse institute of higher education was explored. The data suggests perceived stress, anxiety, and depression levels are above the normal range at all class levels (e.g., first-year, sophomore, junior, and senior). The data also suggested there were no statistical differences from student perceptions of stress, anxiety, and depression between commuter students and those that live on-campus. Gender was one variable that showed significant differences. Through this study, it was discovered that there were other stress factors aside from academics that influenced 21st century college students' perceived level of stress, anxiety, and depression. These factors included: relationships, extra-curricular activities, professional aspirations, and family demands. All of these variables played a role in their perceived level of stress, anxiety, and depression.

VI. LIMITATIONS

One limitation which stood out in this study is that the data was collected from one institute of higher learning. Although the participants were diverse from an ethnic perspective, obtaining data from other institutions nationally would be preferred to increase its transferability. Another limitation was that the DASS-21 is a self-reporting instrument. Due to this, interpreting the results need to be done with a critical eye as social desirability bias or a lack of self-awareness could occur.

Both sections of this survey were offered to students in the beginning of their respective classes. Although no time limit was given, students may have felt rushed due to their respective faculty waiting to start class. For those students that felt pressure to finish quickly, it may have rushed their responses and may not have been as thorough as they could have been when completing the qualitative section.

The timing of this study could have had an influence on the findings. As the survey was distributed during the middle of the semester, academic stress from mid-term examinations could have been elevated. Ideally, this survey should be distributed multiple times throughout the semester, so a trend can be established

and subsequently analyzed. Although there are still a number of confounding variables, measurements over time would help with the analysis and assessment of the findings.

Recommendations for Future Research

As this was an exploratory study, a number of recommendations for future research were identified. Follow-up studies could include deeper inquiry into social connectedness, loneliness, and academic self-efficacy and its relationship to stress, anxiety, and depression. Based on the observed usage level of social media applications by college and university students, a study that looks at the relationship between social media use and stress, anxiety, and depression would be helpful in finding answers to the root of the relationship issues noted in the qualitative section of this study. Along those lines, it would be insightful to look into the impact social media connections (e.g., friends and/or followers) and real-world friends have on stress, anxiety, and depression.

Based on the findings from this study, student services should take note and begin to develop programming that addresses the stressors noted by the participants. In particular, building stronger relationships with peers, faculty, and staff, increasing social connectedness by targeting student engagement in and out of their classes, and assisting students with coping skills (e.g., meditation, yoga, relaxation techniques, mindfulness, self-regulation skills, and time management skills) could have a positive impact on the student experience. It has become apparent that 21st century learners lead full and busy lives that stretches beyond the classroom. For students to be successful, they will need to possess a holistic set of skills and making the assumption that they will learn these skills on their own or possess them innately would be a terrible error for a college or university to make. Social-emotional development impacts academic success, but to what degree will require further inquiry.

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