

Predictors of Academic Stress Among College Students

Mehmet A. Karaman, Eunice Lerma, Javier Cavazos Vela,
and Joshua C. Watson

The purpose of this study was to examine factors predictive of college students' academic stress. Three hundred seven undergraduate students (179 men, 128 women) participated in the study. Results indicated that female college students had higher academic stress than did male college students. Bivariate correlations and multiple regression analyses revealed that life satisfaction, locus of control, and gender were significant predictors of academic stress. Directions for future research and implications for counselors are discussed.

Keywords: academic stress, gender, college students, Hispanic-serving institution, achievement motivation

Each year, millions of students enroll in colleges and universities with the goal of obtaining degrees, which they hope will lead to the acquisition of desirable careers and satisfied lives. Although attending college is a new stage for many individuals and their families, this period can be stressful for some students because of the transitional nature of college life (Aspelmeier, Love, McGill, Elliott, & Pierce, 2012). Sources of stress include academics, feelings of loneliness, job hunting, family, life goals, social pressure, and physiology. Stress, specifically academic stress, can deplete students' levels of subjective well-being and cause lowered grades and dropped courses (Misra & Castillo, 2004; Watson & Watson, 2016). Given the detrimental impact of stress on college students' academic and psychological functioning, examining predictive factors of stress is important.

In this study, we used a conceptual framework consisting of factors theoretically and empirically related to academic stress to examine the differences between male and female students. The study included not only cognitive factors that affect academic stress but also gender as a biological factor. Previous researchers have shown that female students have higher levels of academic and general stress compared with their male counterparts (Backović, Živojinović, Maksimović, & Maksimović, 2012; Misra & McKean, 2000; Rahardjo, Juneman, & Setiani, 2013). Our study differentiated from existing research focusing on achievement motivation, life satisfaction, and locus of control by including cognitive factors and gender as a biological factor in relation to academic stress. After presenting quantitative findings from 307 college students from a Hispanic-serving institution (HSI), we discuss the importance of these findings and provide implications for practice and research.

Mehmet A. Karaman, Department of Psychological Counseling and Guidance, 7 Aralık University, Kilis, Turkey; Eunice Lerma and Javier Cavazos Vela, Department of Counseling and Guidance, University of Texas Rio Grande Valley; Joshua C. Watson, Department of Counseling and Educational Psychology, Texas A&M University—Corpus Christi. Correspondence concerning this article should be addressed to Mehmet A. Karaman, Department of Psychological Counseling and Guidance, 7 Aralık University, Dr. Öğr. Üyesi, Kilis Türkiye (email: Makaraman@gmail.com).

Academic Stress

Stress refers to a “particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources” (Lazarus & Folkman, 1984, p. 19). Individuals experience stress in a plethora of situations, including academics, career, and social relationships. Although many researchers (Ainsle, Shafer, & Reynolds, 1996; Gnilka, Ashley, Matheny, Chung, & Chang, 2015) have examined college students’ general stress, which refers to psychological stress based on specific surroundings, less attention has been placed on academic stress as a result of the college experience. College students’ academic stress refers to factors in the academic environment such as course work, group projects, and organizational involvement, as well as perceptions, attitudes, and behaviors toward academic demands (Wilks, 2008). Watson and Watson (2016) examined the extent to which emotional intelligence and coping self-efficacy predicted first-year college students’ academic stress. These researchers found that coping self-efficacy and emotional intelligence were significant predictors of academic stress, with emotional intelligence significantly moderating the relationship between coping self-efficacy and academic stress.

Using an academic stress inventory and a stress symptom inventory, Pozos-Radillo, Preciado-Serrano, Acosta-Fernandez, Aguilera-Velasco, and Delgado-Garcia (2014) investigated the extent to which academic stress predicted university students’ chronic stress. These researchers highlighted the salience of the relationship between academic stress and general stress in activities such as test taking, homework, and class participation. In addition, researchers have found significant differences between male and female students’ levels of academic stress (Backović et al., 2012; Misra & McKean, 2000; Rahardjo et al., 2013), highlighting important gender differences in college student development. Researchers have found that coping responses are important for college students’ development (e.g., engaging in positive reframing, taking action, seeking support; Cavazos, Johnson, & Sparrow, 2010; Lazarus & Folkman, 1984) and become problematic when stress outweighs coping resources and mechanisms (e.g., life satisfaction, locus of control).

Achievement Motivation

Elliot (2006) conceptualized achievement motivation as the development of mastery, performance-approach, and performance-avoidance goals. Other researchers (Lew, Allen, Papouchis, & Ritzler, 1998; Yu & Yang, 1994) have described achievement motivation in terms of individuals’ fear of failure and the goals of significant others or society. Achievement motivation relates to internal attribution (e.g., performance based on effort and ability), whereas external attributions do not (Powers & Wagner, 1984). Achievement motivation also refers to a personality characteristic that fosters movement and fulfill-

ment toward personal standards of achievement (Lew et al., 1998). Whereas some researchers (Cueva, 2006; R. L. Smith & Troth, 1975) have developed programs and trainings to improve achievement motivation, many researchers (e.g., Turner, Chandler, & Heffer, 2009) have used survey methods to examine how achievement motivation relates to important outcomes such as college satisfaction, academic achievement, and life satisfaction. Dong (2014), for example, found that academic stress had a negative relationship to achievement motivation. In other words, students who had higher levels of academic stress had lower levels of achievement motivation. Following Dong, we sought to explore the degree to which achievement motivation predicted academic stress with other variables (e.g., life satisfaction) and whether the two variables were correlated.

Locus of Control

Locus of control relates to how people explain their personal experiences and events. Rotter (1966) divided the concept of locus of control into two dimensions: internal and external. Internal locus of control refers to the extent to which people attribute outcomes to internal behaviors and factors, whereas external locus of control refers to external factors such as fate or luck. There is evidence to suggest that an internal locus of control relates to college students' academic achievement and positive psychological functioning. Cavazos, Johnson, Fielding, et al. (2010) interviewed college students about factors influencing their academic and personal resiliency. One of the most important factors that helped students succeed in postsecondary education was an internal locus of control. Most students indicated that they were in complete control of their academic futures as evidenced by their attribution of success to hard work and effort.

The aforementioned example underscores the importance of an internal locus of control as a protective factor against academic stress and as a coping mechanism. In addition, Dave, Tripathi, Singh, and Udainiya (2011) explored the relationship between subjective well-being, locus of control, and self-efficacy among university students. Students' subjective well-being was positively related to their internal locus of control and self-efficacy, thereby suggesting that students with higher levels of internal causal attributions had greater subjective well-being. Finally, researchers showed that academic stress had a positive relationship to locus of control in a sample of college students (Carvalho, Gadzella, Henley, & Ball, 2009). In other words, higher levels of external locus of control were correlated with higher levels of academic stress. Students who believed that success and failure were dependent on the control of powerful others, destiny, luck, or chance were more stressed compared with students who believed that success and failure were dependent on their own capacities, behaviors, or attributes. The current study also examined the relationship between academic stress and locus of control to provide consistent information for researchers and practitioners.

Life Satisfaction

One of the most important factors in college students' academic and mental health outcomes involves life satisfaction given its relationship to happiness, psychological well-being, and meaning in life (Segrin & Taylor, 2007; Vela et al., 2016). Life satisfaction refers to perceptions of quality of life as well as positive and negative affect (Diener, Luca, & Oishi, 2001). Researchers have found that life satisfaction is related to academic achievement, college retention (Frisch et al., 2005), academic satisfaction, college self-efficacy (Ojeda, Flores, & Navarro, 2011), and college persistence (Ojeda, Edwards, Hardin, & Piña-Watson, 2014). In addition, Kaya, Tansey, Melekoğlu, and Çakıroğlu (2015) found that academic stress had a negative relationship to life satisfaction. In other words, students who had lower life satisfaction had higher levels of academic stress. Gnilka et al. (2015) also found that Taiwanese students reported lower levels of life satisfaction than did U.S. students. Therefore, knowing the predictor level of life satisfaction in academic stress can help researchers and practitioners understand the nature of stress.

Purpose of the Study

Understanding how various factors affect college students' academic stress is an important issue in postsecondary education. Thus, the purpose of this study was to examine the relationship among academic stress, achievement motivation, life satisfaction, and locus of control. Although researchers have examined these variables separately in previous studies, no study has included these factors in a single model to determine which factors have the strongest predictive relationship on college students' academic stress. As a result, we explored the following research questions:

Research Question 1: To what extent do life satisfaction, achievement motivation, and locus of control influence college students' academic stress?

Research Question 2: Are the differences between male and female college students' levels of academic stress statistically significant?

Method

Participants

The sample in the study included 307 undergraduate students from an HSI in the southern region of the United States. The mean age of the participants was 21.31 years ($SD = 4.92$, range = 17–49 years), with two participants (0.7%) not responding to the demographic query. More men ($n = 179$, 58.3%) than women ($n = 128$, 41.7%) participated. Participants reported their academic standing as follows: freshman ($n = 156$, 50.8%), sophomore ($n = 27$, 8.8%),

junior ($n = 34$, 11.1%), and senior ($n = 89$, 29.0%). One participant (0.3%) did not respond to this demographic query. Most participants self-identified as White or Caucasian ($n = 113$, 36.8%), followed by Hispanic or Latino ($n = 90$, 29.3%), multiracial ($n = 22$, 7.2%), Asian American ($n = 9$, 2.9%), and African American ($n = 8$, 2.6%). Sixty-four participants also self-identified as international students (20.8%). One participant (0.3%) did not respond to this demographic query. (Percentages may not total 100 because of rounding.) With respect to the education level in their immediate family, 79 participants (25.7%) reported that they were the first one in their family to attend college, 69 participants (22.5%) were the second one to attend college, 48 participants (15.6%) were the third one to attend college, and 109 participants (35.5%) were one among many family members to attend college. Two participants (0.7%) did not respond to this demographic query.

Measures

Demographic questionnaire. A demographic form was designed to collect data related to participants' age, gender, race/ethnicity, relationship status, current grade point average, academic standing (e.g., freshman), education level in their immediate family (e.g., first one to attend college), and identified academic major. International students were also asked about their country of origin.

Achievement motivation. The Achievement Motivation Inventory (AMI; Karaman & Watson, 2017) was used to assess achievement behaviors and thoughts in the context of McClelland's (1961) high-achieving individual. The AMI was designed for individuals 17 years and older. This self-report measure estimates a person's level of achievement motivation using 14 items across two factors. Respondents rate each item on a 5-point Likert-type scale ranging from 0 (*never*) to 4 (*always*), with possible total scores ranging from 0 to 56 (Karaman & Watson, 2017). Karaman and Watson (2017) reported moderate alpha coefficients of .76 for the Achievement Thoughts subscale and .65 for the Achievement Behaviors subscale. The alpha coefficient for the AMI total score was reported as .82. For the current study, we calculated an alpha of .80.

Locus of control. We used Rotter's (1966) Internal–External (I-E) scale to measure locus of control. The I-E scale was designed for individuals 18 years and older. The instrument is a forced-choice 29-item questionnaire, including six filler items. Respondents are asked to select one statement from a pair of statements they believe to be true in their lives. Each item on the scale consists of two statements, one representing an internal locus of control and the other an external locus of control. Twenty-three items are scored. One point is given for each external locus of control response, with total scores ranging between 0 and 23. A score ranging from 0 to 12 represents an internal locus of control, and a score ranging from 13 to 23 represents an external locus of control. Rotter reported test–retest reliabilities for several samples varying between .49 and .83 over 1 to 2 months. For the current study, we calculated an alpha of .70.

Academic stress. We used the Student-Life Stress Inventory–Revised (SSI-R; Gadzella & Masten, 2005) to measure academic stress. Gadzella (1991) devel-

oped the first version of the SSI, which consisted of 51 items organized into nine categories (stressors) and two sections (reactions to stressors). Gadzella and Masten (2005) revised this instrument, which led to a new measure with improved psychometric properties. The revised inventory is a self-report measure that estimates college-level students' academic stress with 53 items organized into nine factors. Respondents rate each item on a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*most of the time*). Total scores range between 53 and 265, with higher scores reflecting higher levels of academic stress. Gadzella and Masten reported an alpha coefficient of .92 for the total score and correlations (test-retest) between each category ranging from .46 to .76. Reliability coefficients for the subscales ranged from .61 (Self-Imposed subscale) to .86 (Changes subscale). For the current study, we calculated an alpha of .93 for the SSI-R total score.

Life satisfaction. We used the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) to measure life satisfaction. The scale is a five-item self-report questionnaire that estimates individuals' perceived level of life satisfaction. Respondents rate each item on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Results of the five items are summed to produce an overall score, with higher scores indicating greater satisfaction with life. The reported alpha coefficient of .84 showed good internal consistency (Diener et al., 1985). For the current study, we calculated an alpha of .84.

Procedure

After receiving institutional review board approval, we recruited participants from different colleges (e.g., College of Education, College of Engineering) and departments to have a diverse participant pool. A solicitation email, which included a brief explanation and purpose of the study, was sent to professors. The first author scheduled class visitations with professors who were willing to give 30 minutes of class time to recruit volunteer research participants.

A total of 334 students participated in this study. Two steps were followed to clean the data. First, the data set was examined, and 21 cases were removed because of unanswered items on the instruments. The second step was to evaluate and either omit or replace missing data. A descriptive statistic was run to find the percentage of missing values. The results showed that the percentage of missing values was 0.14%. The bivariate analyses and the percentage of missing data showed that the data were missing completely at random. As a result, we replaced missing values with the series mean. No additional adjustments were made to the data set.

Data Analysis

Statistical power analysis. Using the G*Power (Version 3.1) statistical power analysis program (Faul, Erdfelder, Lang, & Buchner, 2007), we conducted an a priori power analysis to determine the minimum number of participants

needed to establish statistical power for this research design at the .80 level given an alpha of .05. The results of this power analysis indicated that a minimum sample size of 114 participants was necessary to detect a moderate effect ($f^2 = .15$) of academic stress for estimating differences between men and women. On the basis of this finding, the sample of 307 college students used in the current study was sufficient to explain differences between genders.

Preliminary analyses. First, we computed descriptive statistics and alpha coefficients for the study variables (see Table 1). Next, we tested the assumptions of multivariate analysis of variance (MANOVA) and multiple linear regression models. Upon analyzing the skewness of the subscales and boxplots, we found that values changed between $-.49$ and $.01$, which was considered acceptable to prove normality (George & Mallery, 2010). We inspected Box's M to assess the assumption of homogeneity of covariances. Box's M ($62.50, p = .06$) indicated that the assumption was met. To assess the assumptions of linearity and homoscedasticity, we inspected standardized residual plots. To assess for multicollinearity, we examined bivariate correlations and variance inflation factors (see Table 1). The results of these preliminary analyses indicated no evidence suggesting that these assumptions had been violated.

Results

We analyzed the results using bivariate correlations, MANOVA, and hierarchical regression. First, we examined correlations between the predictor variables and academic stress (see Table 1). Academic stress was not significantly correlated with achievement motivation. However, gender ($r = .24, p < .001$) and locus of control ($r = .30, p < .001$) were significantly correlated with academic stress. Higher external locus of control scores were associated with higher levels of academic stress. In contrast, there was a negative significant correlation between life satisfaction ($r = -.25, p < .001$) and academic stress, indicating that lower levels of life satisfaction were associated with greater academic stress.

TABLE 1
Descriptive Statistics, Reliability Coefficients, Variance Inflation Factors (VIFs), and Bivariate Correlations for the Study Variables

Variable	1	2	3	4	5	VIF
1. Academic stress	—	.03	-.25**	.30**	.24**	
2. Achievement motivation		—	.34**	-.28**	.12*	1.18
3. Life satisfaction			—	-.28**	.13*	1.18
4. Locus of control				—	.06	1.13
5. Gender					—	1.03
<i>M</i>	150.74	39.76	24.11	10.66		
<i>SD</i>	27.27	6.54	6.54	3.64		
α	.93	.80	.84	.68		

* $p < .05$. ** $p < .001$.

Next, we conducted a one-way MANOVA to determine significant differences between men's and women's levels of academic stressors (i.e., frustrations, conflict, pressures, changes, self-imposed, physiological, emotional, behavioral, and appraisal). Descriptive statistics for each of the dependent variables across genders are presented in Table 2. We used an alpha level of .05 as the criterion for determining statistical significance. Results of the MANOVA indicated a statistically significant difference between gender and the nine dependent variables, Wilks's $\Lambda = .83$, $F(9, 297) = 6.69$, $p < .001$. Approximately 17% of the variance in the model was accounted for in the combined dependent variables across gender, yielding a small effect. In this study, statistical significance was noted with a medium effect size ($f^2 = .20$).

We conducted a follow-up post hoc discriminant analysis to determine how group differences were manifested across the dependent variables. Results indicated that the discriminant function was significant, Wilks's $\Lambda = .83$, $\chi^2(9) = 55.51$, $p < .001$. Physiological stress loaded strongly ($r > .66$) and had a strong relationship ($\beta = .53$) with the discriminant function. On the basis of these results, the female college students were determined to have higher physiological stress compared with their male counterparts.

TABLE 2
Descriptive Statistics Based on Academic Stress

Dependent Variable and Gender	<i>M</i>	<i>SD</i>	<i>n</i>
Frustrations			
Men	19.47	4.68	179
Women	19.03	4.65	128
Conflict			
Men	12.36	2.71	179
Women	12.19	2.90	128
Pressures			
Men	15.27	3.00	179
Women	16.38	2.76	128
Changes			
Men	8.64	2.84	179
Women	9.15	2.94	128
Self-imposed			
Men	21.41	3.87	179
Women	22.45	3.63	128
Physiological			
Men	31.73	10.31	179
Women	38.01	10.64	128
Emotional			
Men	11.67	3.93	179
Women	13.63	4.24	128
Behavioral			
Men	15.22	5.51	179
Women	18.19	5.67	128
Appraisal			
Men	9.45	1.77	179
Women	9.34	1.74	128

Finally, we performed a two-step hierarchical multiple linear regression analysis to evaluate the relationships among achievement motivation, locus of control, academic stress, life satisfaction, and gender (see Table 3). In the first step, achievement motivation, life satisfaction, and locus of control were added to the model as predictor variables with academic stress as the criterion. We included these variables in the first step because they were cognitive factors and were measured by instruments. These predictor variables explained a significant portion of the variance in the participants' academic stress, $F(3, 303) = 19.23$, $p < .001$, $R^2 = .16$. In the second step, we added gender to the model as a predictor variable. Gender was entered into the model last because gender represents a biological factor, and we were interested in the amount of variance in academic stress that this variable explained. The linear combination of these four predictor variables explained a significant portion of the variance in the participants' academic stress, $F(4, 302) = 20.51$, $p < .001$, $R^2 = .21$ ($\Delta R^2 = .05$).

According to Cohen (1992), unique contributions to the overall variance of a model are indicated by ΔR^2 values greater than or equal to .02. Therefore, we determined that the computed ΔR^2 value of .05 in this study indicated that gender was a significant predictor of undergraduate student academic stress, after controlling for achievement motivation, locus of control, and life satisfaction. A post hoc power analysis indicated that power was sufficient for this study ($1 - \beta > .99$), and given our sample size ($N = 307$), a medium effect size was determined ($f^2 = .26$), yielding moderate practical significance.

Discussion

The purpose of this study was to explore which factors were most associated with academic stress among undergraduate students. Our findings support the idea that interventions are needed to ease college students' academic stress. In particular, this study focused on college students' life satisfaction, achieve-

TABLE 3
Predictors of Academic Stress

Variable	Model 1				Model 2			
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Constant	118.28	11.92		9.92	109.59	11.70		9.36
Achievement motivation	0.84	0.24	.20	3.53	0.73	0.23	.17	3.14
Life satisfaction	-1.02	0.24	-.24	-4.26	-1.14	0.23	-.27	-4.89
Locus of control	2.20	0.42	.29	5.24	1.97	0.41	.26	4.82
Gender					13.04	2.87	.23	4.54
<i>R</i> ²			.16**				.21**	
ΔR^2			.15**				.20**	

Note. *N* = 307.

***p* < .001.

ment motivation, and locus of control. The results indicated that achievement motivation was not significantly correlated with academic stress, whereas gender and locus of control were. Similarly, Piña-Watson, López, Ojeda, and Rodríguez (2015) did not find achievement motivation to significantly predict academic stress. In addition, higher academic stress levels in our study were associated with higher levels of external locus of control and lower life satisfaction. Gender was significant in that female college students had higher physiological stress compared with their male counterparts. Our findings are consistent with those of previous studies indicating a significant difference between male and female students' levels of academic stress (Backović et al., 2012; Misra & McKean, 2000; Rahardjo et al., 2013). A possible explanation for this gender difference is that pressures (e.g., deadlines, competition) and changes (e.g., too many changes, changes disrupting life and goals) experienced by women can trigger physiological reactions (e.g., migraine headaches, trembling, sweating) to stressors.

We also found that life satisfaction had a negative correlation with academic stress, meaning that as life satisfaction decreased, academic stress increased. This finding is consistent with previous research. Kaya et al. (2015), for example, found that academic stress had a negative relationship to life satisfaction in their sample of Turkish college students. Specifically, students who had lower life satisfaction had higher levels of academic stress. In addition, Gnilka et al. (2015) found that Taiwanese students reported lower levels of life satisfaction compared with U.S. students. Their findings also suggested that by lowering perceived stress and increasing coping resources, clients' sense of life satisfaction could be substantially improved. In another study, Garriott, Hudyna, Keene, and Santiago (2015) used Lent's (2004) hypothesized model of normative well-being to predict academic and life satisfaction among first- and non-first-generation college students. They found that college self-efficacy predicted academic progress, whereas academic satisfaction (but not academic progress) predicted life satisfaction.

The second variable, locus of control, and in particular external locus of control, was found to have a significant correlation with academic stress. This finding supports previous studies (Carvalho et al., 2009; C. L. Smith, Sapp, Farrell, & Johnson, 1998) in which scholars noted that college students who had higher levels of stress tended to also have a high external locus of control. Conversely, the more internal a student's locus of control, the less academic stress the student experienced. Counselors and educators are therefore encouraged to discover ways to aid students in strengthening their internal locus of control to help decrease academic stressors. In another study, Aspelmeier et al. (2012) found that external locus of control was strongly associated with college adjustment among first-generation college students. As in the current study, many college students are the first in their family to attend college, which can cause added pressure to succeed and, thus, increased stress levels. It is recommended that educators and counselors attend trainings to help students develop a more internalized locus of control and enhance their academic success (Witmer, Cook, Schmitt, & Clinton, 2015).

Achievement motivation, the third variable, was not found to have a significant relationship to academic stress. However, in their study of college preparatory students, Ainslie et al. (1996) found achievement motivation to be strongly related to stress levels. This contrast in findings may be due to the greater cultural diversity in our study. For example, Piña-Watson et al. (2015) examined the role of cognitive and cultural variables on academic motivation among Mexican American adolescent students. Variables such as hope, grit, and *familismo* (familism) positively predicted academic motivation, thus demonstrating the importance that culture plays in students' motivation and their level of success in the university setting. Specifically, the more the students' hope and grit increased, the more their academic motivation increased. Given these findings, Piña-Watson et al. recommended that counselors and educators consider cultural factors when attempting to increase students' academic achievement. Similar to Piña-Watson et al.'s study, our study had a diverse sample—one that reflected the racial, ethnic, and cultural diversity of the geographic area where the study was conducted.

Implications for Counselors

According to Boyraz, Granda, Baker, Tidwell, and Waits (2016), only a small percentage of students take advantage of their college counseling centers. Counselors should provide psychoeducational programs about mental health and how to identify ways that stress negatively affects their academic work. In line with our findings, these programs would help make students aware of their level of self-efficacy and how self-efficacy can positively affect their academic progress. Furthermore, counselors can encourage educators to work closely with students, providing a much-needed support system (Boyraz et al., 2016). In doing so, educators would know when to make effective referrals to trained counselors, who could then provide help to students. Another implication for counselors is to consider social networking for increasing students' sense of belonging, as well as helping to train faculty on cultural awareness and diversity (Chun, Marin, Schwartz, Pham, & Castro-Olivo, 2016). Given that our study found that cultural and diversity factors positively predicted academic motivation, counselors should also work with students to address ways to positively cope with academic stress, such as talking about the source of the stress and adopting a positive attitude.

Tarabochia (2013) developed a holistic approach to providing stress education and stress reduction techniques for middle and high school students by combining several well-being models and integrating the American School Counselor Association's (2004) National Standards for Students into school counseling programs. The author selected 19 wellness models that included five domains of well-being: cognitive well-being, physical well-being, academic well-being, social well-being, and emotional well-being. Each domain of well-being contains stress education or stress reduction techniques that can be incorporated into an existing school counseling program. These stress

education and reduction techniques can be implemented in a classroom, in small groups, or even during individual counseling sessions.

In addition, the Academic Skills Center at California Polytechnic State University (n.d.) provides an online comprehensive stress management program for its students. This program provides a detailed definition of stress and the physiological, behavioral, and psychological effects of stress on college students. Methods for identifying stress and developing a stress planning process, which includes journaling, are also offered. Information for campus counseling is also included as part of the stress management program.

Directions for Future Research

There are multiple suggestions for future research emanating from the current study and its findings. First, researchers in the area of academic stress might consider focusing on identifying efficacious ways for counselors to help students relieve stress. Quasi-experimental studies comparing approaches of varying styles (therapeutic or psychoeducational) and formats (individual, group, or campus-wide program) might shed light on the specific components of treatment most likely to positively affect students' perceptions of academic stress. In addition, qualitative inquiries might help counselors better understand the lived experiences of students challenged by feelings of academic stress, which could lead to more targeted treatment strategies being used.

Second, researchers should consider conducting studies exploring ways counselors could better promote positive psychological and physical health among students through campus-wide programming (Chun et al., 2016). Given that many colleges and universities are asking their counseling centers to do more with less, these types of programs might represent an efficient use of physical resources and staff time. Finally, as the interest in positive psychology increases, furthering the line of research examining the relationship between character strengths and positive student outcomes would be a worthwhile endeavor. In previous studies, researchers found a positive relationship between student character strengths and general life satisfaction among a group of undergraduate students (Lounsbury, Fisher, Levy, & Welsh, 2009). Future researchers can extend this inquiry by examining relationships between character strengths and perceptions of academic stress, potentially finding ways to diminish the impact of stressful events and helping students develop more positive coping mechanisms.

Limitations

The present study stands to add to the empirical literature on academic stress of college students. Nevertheless, several factors might have influenced the results of our study. Therefore, readers are encouraged to interpret the results within the context of the following limitations to accurately gauge how relevant the findings might be to their institutions. First, the participants in this study volunteered to take part in this project. Their willingness to participate could be interpreted as a sign that these students were not overly challenged by the

academic stressors they were facing. Second, the instruments used to collect data in this study were all self-report questionnaires. Interpretations of the data were made under the assumption that the participants were forthright and honest in their responses. Finally, the data analysis included participants from all academic standings (i.e., freshman, sophomore, junior, and senior). However, we did not examine the differences among these groups, which could be another factor to consider.

References

- Ainslie, R. C., Shafer, A., & Reynolds, J. (1996). Mediators of adolescents' stress in a college preparatory environment. *Adolescence, 31*, 913–924.
- American School Counselor Association. (2004). *ASCA national standards for students*. Alexandria, VA: Author.
- Aspelmeier, J. E., Love, M. M., McGill, L. A., Elliott, A. N., & Pierce, T. W. (2012). Self-esteem, locus of control, college adjustment, and GPA among first- and continuing-generation students: A moderator model of generational status. *Research in Higher Education, 53*, 755–781. doi:10.1007/s11162-011-9252-1
- Backović, D., Živojinović, J., Maksimović, J., & Maksimović, M. (2012). Gender differences in academic stress and burnout among medical students in final years of education. *Psychiatria Danubina, 24*, 175–181.
- Boyratz, G., Granda, R., Baker, C. N., Tidwell, L. L., & Waits, J. B. (2016). Posttraumatic stress, effort regulation, and academic outcomes among college students: A longitudinal study. *Journal of Counseling Psychology, 63*, 475–486. doi:10.1037/cou0000102
- California Polytechnic State University, Academic Skills Center (n.d.). *Stress management*. Retrieved from <https://asc.calpoly.edu/ssl/stressmanagement>
- Carvalho, C. F., Gadzella, B. M., Henley, T. B., & Ball, S. E. (2009). Locus of control: Differences among college students' stress levels. *Individual Differences Research, 7*, 182–187.
- Cavazos, J., Johnson, M. B., Fielding, C., Cavazos, A. G., Castro, V., & Vela-Gude, L. (2010). A qualitative study of resilient Latina/o college students. *Journal of Latinos and Education, 9*, 172–188. doi:10.1080/15348431003761166
- Cavazos, J., Johnson, M. B., & Sparrow, G. S. (2010). Overcoming personal and academic challenges: Perspectives from Latina/o college students. *Journal of Hispanic Higher Education, 9*, 304–316.
- Chun, H., Marin, M. R., Schwartz, J. P., Pham, A., & Castro-Olivo, S. M. (2016). Psychosociocultural structural model of college success among Latina/o students in Hispanic-serving institutions. *Journal of Diversity in Higher Education, 9*, 385–400. doi:10.1037/a0039881
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159. doi:10.1037/0033-2909.112.1.155
- Cueva, C. (2006). *An achievement motivation program for young minority students utilizing cognitive-behavioral techniques* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3233955)
- Dave, R., Tripathi, K. N., Singh, P., & Udainiya, R. (2011). Subjective well-being, locus of control, and general self-efficacy among university students. *Amity Journal of Applied Psychology, 2*, 28–32.
- Diener, E., Emmons, R., Larsen, J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49*, 71–75. doi:10.1207/s15327752jpa4901_13
- Diener, E., Luca, R. E., & Oishi, S. (2001). Subjective well-being: The science of happiness and life satisfaction. In C. R. Synder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 63–73). New York, NY: Oxford University Press.
- Dong, Y. (2014). *Examining the role of motivation in the relationship between perceived academic stress and coping among freshmen* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3626190)
- Elliot, A. J. (2006). The hierarchical model of approach–avoidance motivation. *Motivation and Emotion, 30*, 111–116. doi:10.1007/s11031-006-9028-7

- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175–191. doi:10.3758/bf03193146
- Frisch, M. B., Clark, M. P., Rouse, S. V., Rudd, M. D., Paweleck, J. K., Greenstone, A., & Kopplin, D. A. (2005). Predictive and treatment validity of life satisfaction and the Quality of Life Inventory. *Assessment*, 12, 66–78. doi:10.1177/1073191104268006
- Gadzella, B. M. (1991). Differences between men and women on stress producers and coping strategies. *Psychological Reports*, 69, 561–562. doi:10.2466/PRO.69.6.561-562
- Gadzella, B. M., & Masten, W. G. (2005). An analysis of the categories in the Student-Life Stress Inventory. *American Journal of Psychological Research*, 1, 1–10.
- Garriott, P. O., Hudyna, A., Keene, C., & Santiago, D. (2015). Social cognitive predictors of first- and non-first-generation college students' academic and life satisfaction. *Journal of Counseling Psychology*, 62, 253–263. doi:10.1037/cou0000066.supp
- George, D., & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference 17.0 update* (10th ed.). Boston, MA: Pearson.
- Gnilka, P. B., Ashley, J. S., Matheny, K. B., Chung, Y. B., & Chang, Y. (2015). Comparison of coping, stress, and life satisfaction between Taiwanese and U.S. college students. *Journal of Mental Health Counseling*, 37, 234–249. doi:10.17744/mehc.37.3.04
- Karaman, M. A., & Watson, J. C. (2017). Examining associations among achievement motivation, locus of control, academic stress, and life satisfaction: A comparison of U.S. and international undergraduate students. *Personality and Individual Differences*, 111, 106–110.
- Kaya, C., Tansey, T. N., Melekoglu, M., & Çakiroğlu, O. (2015). Stress and life satisfaction of Turkish college students. *College Student Journal*, 49, 257–261.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.
- Lent, R. W. (2004). Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment. *Journal of Counseling Psychology*, 51, 482–509. doi:10.1037/0022-0167.51.4.482
- Lew, A. S., Allen, R., Papouchis, N., & Ritzler, B. (1998). Achievement orientation and fear of success in Asian American college students. *Journal of Clinical Psychology*, 54, 97–108. doi:10.1002/(sici)1097-4679(199801)54:1<97::aid-jclp11>3.0.co;2-f
- Lounsbury, J. W., Fisher, L. A., Levy, J. J., & Welsh, D. P. (2009). An investigation of character strengths in relation to the academic success of college students. *Individual Differences Research*, 7, 52–69.
- McClelland, D. C. (1961). *The achieving society*. New York, NY: Free Press.
- Misra, R., & Castillo, L. G. (2004). Academic stress among college students: Comparison of American and international students. *International Journal of Stress Management*, 11, 132–148. doi:10.1037/1072-5245.11.2.132
- Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies*, 16, 41–51.
- Ojeda, L., Edwards, L. M., Hardin, E. E., & Piña-Watson, B. (2014). The role of behavioral and cognitive cultural orientation on Mexican American college students' life satisfaction. *Journal of Hispanic Higher Education*, 13, 63–74.
- Ojeda, L., Flores, L. Y., & Navarro, R. L. (2011). Social cognitive predictors of Mexican American college students' academic and life satisfaction. *Journal of Counseling Psychology*, 58, 61–71. doi:10.1037/a0021687
- Piña-Watson, B., López, B., Ojeda, L., & Rodriguez, K. M. (2015). Cultural and cognitive predictors of academic motivation among Mexican American adolescents: Caution against discounting the impact of cultural processes. *Journal of Multicultural Counseling and Development*, 43, 109–121. doi:10.1002/j.2161-1912.2015.00068.x
- Powers, S., & Wagner, M. J. (1984). Attributions for school achievement of middle school students. *The Journal of Early Adolescence*, 4, 215–222. doi:10.1177/0272431684043005
- Pozos-Radillo, B., Preciado-Serrano, M. D. L., Acosta-Fernandez, M., Aguilera-Velasco, M. D. L. A., & Delgado-García, D. D. (2014). Academic stress as a predictor of chronic stress in university students. *Psicología Educativa*, 20, 47–52. doi:10.1016/j.pse.2014.05.006

- Rahardjo, W., Juneman, J., & Setiani, Y. (2013). Computer anxiety, academic stress, and academic procrastination on college students. *Journal of Education and Learning*, 7, 147–152. doi:10.11591/edulearn.v7i3.179
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80, 1–28. doi:10.1037/h0092976
- Segrin, C., & Taylor, M. (2007). Positive interpersonal relationships mediate the association between social skills and psychological well-being. *Personality and Individual Differences*, 43, 637–646. doi:10.1016/j.paid.2007.01.017
- Smith, C. L., Sapp, M., Farrell, W. J., & Johnson, J. J. (1998). Psychoeducational correlates of achievement for high school seniors at a private school: The relationship among locus of control, self-esteem, academic achievement, and academic self-esteem. *The High School Journal*, 81, 161–166.
- Smith, R. L., & Troth, W. (1975). Achievement motivation: A rational approach to psychological education. *Journal of Counseling Psychology*, 22, 500–504. doi:10.1037/0022-0167.22.6.500
- Tarabochia, D. S. (2013). A comprehensive stress education and reduction program utilizing a well-being model: Incorporating the ASCA student standards. *Journal of School Counseling*, 11, 1–36.
- Turner, E. A., Chandler, M., & Heffer, R. W. (2009). The influence of parenting styles, achievement motivation, and self-efficacy on academic performance in college students. *Journal of College Student Development*, 50, 337–346. doi:10.1353/csd.0.0073
- Vela, J., Ikononopoulos, J., Hinojosa, K., Gonzalez, S. L., Duque, O., & Calvillo, M. (2016). The relationship among individual, interpersonal, and institutional factors on Latina/o college students' life satisfaction. *Journal of Hispanic Higher Education*, 15, 260–276. doi:10.1177/1538192715592925
- Watson, J. C., & Watson, A. A. (2016). Coping self-efficacy and academic stress among Hispanic first-year college students: The moderating role of emotional intelligence. *Journal of College Counseling*, 19, 218–230. doi:10.1002/jocc.12045
- Wilks, S. E. (2008). Resilience amid academic stress: The moderating impact of social support among social work students. *Advances in Social Work*, 9, 106–125. doi:10.1080/02615470902912243
- Witmer, S. E., Cook, E., Schmitt, H., & Clinton, M. (2015). The read-aloud accommodation during instruction: Exploring effects on student self-perceptions and academic growth. *Learning Disabilities: A Contemporary Journal*, 13, 95–109.
- Yu, A. B., & Yang, K. S. (1994). The nature of achievement motivation in collectivist societies. In U. Kim, H. C. Triandis, C. Kagitcibasi, S. C. Choi, & G. Yoon (Eds.), *Individualism and collectivism: Theory, methods, and applications* (pp. 239–250). London, England: Sage.