January 2014

School Stress, Academic Performance, and Coping in College Freshmen

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Abstract: The 2010 annual freshmen survey from the University of California Los Angeles stated that nearly half of all freshmen report having low to average levels of emotional health. This is the largest percentage of students in the low range of emotional health since the survey began over 25 years ago. Lower levels of mental and emotional health have been found to correlate with higher levels of stress. If students have high levels of stress and ineffective coping skills, this may negatively affect their academic performance. The purpose of my research was to understand how school stress, coping, and academic performance interact with each other. To accomplish this, college freshmen (n = 38) from a mid-sized university in the Rocky Mountain region were asked to complete three surveys: the Student Life-Stress Inventory (Gadzella, 1994), the Coping Inventory for Stressful Situations (Endler & Parker, 1999), and a demographic survey. Correlation analysis suggested that stress and coping were positively and significantly correlated (r[36] = .448, p = .004). Beyond this, emotion coping was also positively and significantly correlated with stress (r[36] = .698, p = < .001). Regression analysis showed that emotion coping accounted for nearly half of the variance in stress (R^2 = .488, p < .001). These results suggest that reacting in an emotional way may be freshmen students' first and most used reaction to stress. It may be that freshmen students only know how to cope with stress in an emotional way. Incoming freshmen may benefit from additional sources of support and tools to deal with stress, such as positive ways to manage stress, and increased knowledge of resources on campus, such as counseling centers.

Keywords: *school stress, coping, academic performance, college freshmen*

University of California Los Angeles' (UCLA) 2010 American Freshmen survey noted two important changes in the incoming students they surveyed. First, almost half of freshmen surveyed (44%) rated their emotional health as average or below average (Pryor, Hurtado, DeAngelo, Palucki Blake, & Tran, 2010). This was the lowest point that freshmen's emotional health has been in the survey's 25-year existence. The survey also found that nearly 30% of all students felt overwhelmed during their senior year of high school. Data from the American Psychological Association (APA, 2013) has also shown an increase in mental illness in entering college freshmen. The above research may point to an increase in stress that incoming freshmen will face. This increase in stress may cause numerous issues for freshmen, affecting their physical and mental abilities (Hudd et al., 2000).

Stress

Psychological research on stress originates with the studies of Dr. Hans Selye, who published *The Stress of Life* (1954), wherein Selye defined stress as: "any nonspecific demand placed upon the body" (p. 32). Selye experimented on rats and eventually found in them an adrenal response that would later be called stress response. Following Selye's definition of stress there have been many, different types of stress identified.

Most recently APA has defined three main types of stress. Acute stress refers to short-term stress placed on a person. For example, being cut off in traffic can cause acute stress (APA, 2013.). Acute stress symptoms can range from headaches and other muscular pain to increases in blood pressure and often increases irritability in the person experiencing it (APA, 2013). Following acute stress is episodic or long-term stress, which is acute stress that a person experiences on a regular basis; this is the stress of a chaotic life. This constant stress shows itself in symptoms such as frequent headaches or migraines, hypertension, chest pain, and potentially heart disease. Following episodic stress is chronic stress, which is the stress that is a constant part of someone's life, whether it be poverty's constant stranglehold on one's opportunities or the stress of living with a dysfunctional family or abusive

relationship. Chronic stress is the stress that people experience day in and day out. Chronic stress leads to much worse symptoms than acute or episodic stress; it can lead to violence and, in the worst cases, can cause someone to take their own life. It often leads people to think that they have no way out of the terrible situation they are in.

Stress and academic performance. Before addressing how stress might affect a student's academic performance, it is important to understand what contributes to performance. Joe Cuseo (2007) identifies seven qualities that promote student success: personal validation, self-efficacy, sense of purpose, active involvement, reflective thinking, social interaction, and self-awareness. Students are most likely to succeed when they feel valued by their school and when they actively participate in learning. Having a strong sense of self will also help students succeed, know where they wish to take their education, and know when to take breaks. Stress can strain many of these qualities and may negatively affect a student's performance. Alternatively having these qualities may minimize the effect of stress on students.

Memory is fairly important to student success, as it would be difficult to answer questions about a book if a student doesn't remember what they had read. As such, the effect of stress on memory can affect student performance. The mental effects of stress can vary; in some cases a small amount of stress can actually improve memory rather than worsening it. Jelicic, Geraerts, Merckelbach, and Guerrieri (2004) found that higher levels of stress increased the number of emotional words that participants recalled. However, Conrad (1996) found that chronic stress impaired rats' ability to correctly navigate a maze. These findings show that constant stress can lead to impaired mental ability; while slight stress could lead to an increase in some performance. Dhabhar and McEwen (1999) show that when animals were exposed to an acute stressor prior to a blood test, their blood cells were redistributed in such a way as to have immune function at its highest. This study may not directly apply to acute stress in humans, but it does show that some stress can be beneficial.

Some studies have shown that stress negatively correlates with self-esteem (Youngs, Rathge, Mullis, & Mullis, 1990). High self-esteem may work as something of a protective bubble to block stress; whereas, low self-esteem seems to increase stress. This is important to note as over the course of the first semester, classes and other social pressure may lower these levels. Moreover, not all students will come in with high levels of self-esteem. Some students may enter college without adequate levels of self-esteem. Freshmen may experience higher levels of stress and may experience depression (Garber, Robinson, & Valentine, 1997; Heyman, Dweck, & Cain, 1992; Hermann & Betz, 2006). Dixon and Kurpius (2008) found stress and depression in college students were significantly correlated. These results indicate protecting students from too much stress may help protect them from depression.

Social support can also have a mitigating factor on stress, further helping students to avoid depression. Heinrichs, Baumgartner, Kirschbaum, and Ehlert (2003) found the presence of social support reduced participants' cortisol levels and their levels of anxiety and stress. It would seem that those people who have a larger social support network are usually able to cope with more stress, and also cope better with that stress.

Coping

A student's approach to coping with stress is just as important to determining success as the level and amount of stress experienced. Knowing how to cope with stress is more important, and often the deciding factor in how students are affected by stress. Whether the student gains support from others, attacks the problem directly, or simply exercises to relieve stress, what matters is that the student understands how to cope with stress in a positive way. Often times the most effective way of coping with stress is a combination of things. Someone may get emotional support from friends or family and then with that support feel ready to adequately attack

the problem. Those students and people who cope well with stress tend to perform best.

Not all coping methods work well; many are maladaptive, causing more harm than help to the person using them. Clear examples are people who use alcohol or drugs to forget about the stress of their life. Not only does coping in this way not actively confront the problems in one's life, it often makes the problems much worse by adding new problems, such as addiction or poor judgment, to one's life.

Lazarus and Folkman (1984) define coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141). In effect, they are defining coping as a person's efforts to deal with stress. Lazarus and Folkman's definition is not the first or only definition of coping, however they have been widely cited since publication.

Lazarus and Folkman propose two kinds of coping: emotion-focused coping and problem-focused coping. Problem-focused coping attempts to identify the problem causing the person stress and then outline strategies to attack the problem. These strategies may include making a list of work to complete or asking a professor for clarification after class. Emotion-focused coping deals with a wide range of activities to lower one's level of distress. This may be through venting to a friend about the hard events of the day, getting consolation from a friend about a disappointment, or going home and attempting to forget something that is causing stress.

Important to note is that problem-focused coping usually occurs when the person believes, or appraises that they can actively do something to deal with the problem. Whereas, emotion-focused coping usually occurs when the person believes that the problem or situation is one that cannot be fixed through action so it must be survived until it passes. Also of note is that people will often get emotional support in order to feel strong enough to deal with the problem at hand.

Sideris (2006) conducted a study in which he compared problem-focused and emotion-focused coping to each other and then to the result of using both. His findings showed that using both problem-focused coping and emotion-focused coping were more effective at lessening the amount of stress a participant felt than using either emotion-focused or problem-focused, alone.

Stress can have very large effects on our lives. Coping styles and strategies can either increase or decrease our experiences of stress. Effective coping strategies coupled with an effective support network will lead to a better ability to manage stress and often leads to the ability to handle larger amounts of stress. The purpose of the current study is to examine how stress, academic performance, and coping interact with each other. Going along with this research purpose was the following question: Can coping and stress predict student GPA?

METHODS

Research Design

Students' stress levels, coping levels, and academic performance were assessed with a stress inventory, a coping inventory, and a demographic survey which asked students about their previous semester GPA and other factors that might relate to stress. Stress for this research project was defined as: "the nonspecific demand placed on any individual and the response the individual has to that demand," based on the definitions of stress by Selye (1976, p. 32) and Lazarus and Folkman (1984). Coping was defined as: "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus and Folkman, 1984, p. 141). Student grade point average (GPA) was used to measure academic performance.

Instruments

Stress was measured with the Student-Life Stress Inventory (SLSI) designed by Gadzella (1994). The SLSI is a 51-item inventory that asks participants to rate on a 5-point Likert scale how

true statements are for them. The SLSI breaks down into two sections. The first focuses on asking students where they have felt stress from: school, lack of resources, deadlines, and others. The second section gives the participant a series of statements asking how he or she reacts when under high levels of stress.

The coping inventory used for the study was the Coping Inventory for Stressful Situations (CISS) designed by Endler and Parker (1999). The CISS is a 48-item scale that asks the participant to rate on a 1-5 Likert scale how often they react to a very stressful situation with the options written. The CISS breaks its responses into 3 main coping types: task, emotion, and avoidance. Avoidance further breaks down into social avoidance and distraction.

Participants were also asked to fill out a 9 question demographic survey. The demographic survey asked about their age, GPA for last semester, expected GPA for the current semester, ethnicity/race, gender, work status, living arrangement, extracurricular activities, and on average, how much they slept per night.

Participants

Thirty-eight freshmen students were surveyed, the most relevant demographic data relating to my results was that the majority of my students were female and white. Other important demographic data can be seen in Table 1.

Table 1. Demographics

Age	Frequency
18	14
19	23
20	1
Gender	**Frequency**
Females	26
Males	12
Race	**Frequency**
African-American/Black	2
Caucasian	28
Hispanic/Latino(a)	4
Mixed Race	4

Procedure

To survey my participants, I went into college composition classes and explained my research project to the students. Following this introduction, I asked if anyone had any questions and let all students know they did not have to participate if they did not want to. I then passed out the survey packet to all students who were willing to participate. Finally, I waited in the classroom until the surveys were finished and then collected them in an envelope and left.

Data Analysis

With α set to .05, Pearson correlation analyses were run to look at the correlations among stress (measured by the totaled scores from the SLSI), coping (measured by the totaled scores from the CISS), and GPA. Due to finding a significant correlation between stress and coping, I next ran a regression analysis with GPA as the dependent variable. Coping and stress were the independent variables in the regression analysis. The regression analysis was repeated with gender removed.

RESULTS

Table 2 shows the results of correlation analysis among stress, coping, and GPA. Coping and stress were significantly correlated (r (36) = .448, and p = .004). Neither coping nor stress was significantly correlated with GPA.

Following the correlation analysis I ran a regression analysis to predict GPA with stress and coping, no significance was found and table 3 shows these results. I also ran a regression with total stress as the dependent variable, with GPA and total coping as constants. The analysis showed that GPA and stress are significant predictors of coping (α = .05, R^2 = .227, and p = .018), accounting for 22.7% of the variance in the model. Next, a regression using stress as the dependent variable with coping and GPA as constants showed that GPA and coping are significant predictors of stress, accounting for 20.1% of the variance in the model (α = .05, R^2 = .201, p = .031). Multicollinearity did exist.

As previously stated, the CISS breaks down into emotion, task, and avoidance. Emotion coping and total stress were significantly correlated ($\alpha = .05$, $r = .698$, $p = < .001$). Regression analysis showed that emotion coping is a significant predictor of stress, accounting for 48.8% of the variance in stress (Table 4).

Table 2. Correlations.

Instrument	GPA	SLSI
SLSI	$r = -.096$	
CISS	$r = -.024$	$r = .448*$

Table 3. Regression with Coping and Stress predicting GPA.

Regression	GPA	Significance
CISS+ SLSI	$R^2 = .042$	.518
CISS	$R^2 = .042$	.248
SLSI	$R^2 = .009$	.587

Table 4. Regression with CISS Emotion predicting Stress.

Regression	SLSI	Significance
CISS Emotion	$R^2=.488$	<.001

DISCUSSION

As previously stated, my research purpose was to look at the inter-relationship of stress, coping, and academic performance. I also asked if stress and coping would be able to predict students' GPA, I did not find a relationship here. My results did show stress and coping were correlated and the emotional coping category of my coping survey accounted for nearly half of all the variation in stress. The correlation between stress and coping is expected but it also makes it difficult to study these two constructs. The correlation between stress and coping gives further credence to the other results.

The fact that coping and GPA predicted stress and that stress and GPA predicted coping, along with the correlation between coping and stress, heavily suggests that coping and stress are interrelated. The predictive relationship between GPA and stress in relation to coping should be considered preliminary due to the fact that coping and stress have high multicollinearity, suggesting that the CISS and the SLSI may, in fact, assess similar things. This further suggests the entanglement of coping and stress. Not only does the multicollinearity suggest a strong connection between stress and coping, it also means that my results may not transfer to other research very well. The CISS and SLSI may not be different enough tests to accurately measure stress and coping as separate constructs.

The most interesting finding of the current research is related to the relationship between emotion coping on the CISS and stress. Emotion focused coping was positively correlated with stress and emotion coping also accounted for nearly half of the variance (44%) in stress. The regression analysis and correlation suggests two important things. First, emotional outbursts may increase stress levels. Second, freshmen may only know how to cope with stress in an emotional way, or emotional responses are their first and go to method to deal with large amounts of stress.

This suggests many things about both the participants in my study and college freshmen on the University of Northern Colorado campus. First, these findings may imply that using a negative emotional response, such as getting frustrated at oneself for procrastinating, or feeling depressed or overwhelmed by the amount of work one has to do, likely increases stress levels rather than lowers them. Following this, one may also imply that negative emotional responses may be the first response that freshmen students have to a large amount of stress. Finally, it may be that many freshmen do not know other ways to deal with stress besides reacting with a negative emotional outburst.

If incoming freshmen are responding to high levels of stress with a negative emotional reaction than freshmen may need more support and tools to cope with stress in a more beneficial way. One

place to start may be to hold workshops for incoming students that educate students about different coping strategies. Teaching students that neither problem-focused nor emotion-focused coping is as effective as using both of them together may be a good place to start (Sideris, 2006). For example, an RA in a dorm may be able to give some of his or her incoming students emotional support in acknowledging how difficult the change from high school to college can be, and then give their students strategies for organizing and studying. These support and tools may help freshmen adjust to the new level of work college requires. Additionally, informing students of available resources on campus, such as tutoring services and the counseling center, would likely be very beneficial. The most important approach is to help student find a balance between school and other activities.

Limitations

There are many complications in this study that limit how far this study may be generalized. The largest problem of the study was the small sample size. A priori power analysis suggested that a samples size of at least 65 participants would be necessary in finding a small effect at a .05 significance level. Given that I had a little over half this amount, it is possible that stress and coping may predict GPA, but that I simply did not have enough participants to find this effect. Another issue with my sample is that it may not have been representative of the overall population as I only surveyed students from spring introductory college composition courses. I chose college composition classes because I believed that I would find a mixture of different majors; that said, it is possible that I only sampled English majors or did not have a very large mix of majors.

As stated above, using only college composition classes likely applied a selection bias to my research that may have had a large impact on my internal validity. The accuracy of self-report surveys also puts a limit on how definite these results are. The large variance in some of the demographic questions also limited the scope of the analysis. The results likely cannot be generalized beyond other freshmen students who were taking an introductory college composition class at the same time as the participants in my study.

CONCLUSION

Further research into how student stress and coping affect student performance are necessary to adequately answer whether stress and coping can predict a student's GPA. If I were to replicate this study, I would be sure to achieve an adequate sample size to test for the effect. As well as increasing the sample size, I would also conduct interviews of students to attempt to gain further insight into how school stress truly affects their performance.

Given the increasing levels of stress among college students, future research looking into the information and tools provided to freshmen students during their orientation would be invaluable to learning more about how to help reduce these stress levels. Further, it would be beneficial to answer whether freshmen simply have more stress due to larger responsibilities in college or if it is due to lack of knowledge and tools to cope with stress. Additionally, one may also desire to conduct research looking into how many services are offered for freshmen (or all students) and how many students actually use these services. Furthering our knowledge about freshman college student stress levels will help to improve things for future freshmen and increase retention, as well as help freshmen to be more successful in their first year of college.

ACKNOWLEDGEMENTS

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