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Self-leadership and stress among college students: Examining the moderating role of coping skills†

Sherry A. Maykrantz, PhD, CHES[a] and Jeffery D. Houghton, PhD[b]

[a]School of Health Sciences, Salisbury University, Salisbury, MD, USA; [b]West Virginia University, Morgantown, WV, USA

ABSTRACT

Objective: Stress remains a major health concern among college students today. Consequently, research on student stress is imperative, from both an organizational and an individual perspective. This research study explores the moderating role of coping skills on the relationship between self-leadership and stress among college students. **Participants:** Data from 643 full-time undergraduate students attending a 4-year public university in the mid-Atlantic region were collected in February 2017 and analyzed using a moderated regression model. **Results:** The results indicate self-leadership practices do reduce student stress levels and that this relationship is moderated by student coping skills. **Conclusion:** The findings from this study deepen our understanding of how self-leadership practices may decrease student stress and showcases self-leadership as an effective tool for reducing college student stress.

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According to leadership expert Bernard Bass, "leadership has been built into the human psyche because of the long period we need to be nurtured by parents for our survival."[1] From the beginning, we learn to follow the leadership of our parents for the satisfaction of our basic needs, such as food and comfort. As we grow, others begin to take the place of our parents as our leaders. In the 1980s, leadership scholars took leadership to a new level by suggesting that, in addition to the leadership that comes from others, one can and should lead oneself.[2] Self-leadership is a process of self-influence through which individuals lead themselves.[2,3]

One of the greatest challenges individuals face in leading themselves is the effective management of stress. Stress is defined as "a mind-body arousal that can, on one hand, can save our lives and on the other, fatigue body systems to the point of malfunction and disease."[4] Stress becomes negative when it surpasses our ability to cope in a healthy manner. Coping can be described as the ability with which one handles a stressful event.[5] Colleges and universities across the nation are facing a serious health problem, and stress is the culprit.[6] While stress is inevitable, it is becoming more and more prevalent among college students, creating an increasing health crisis at our nation's colleges and universities.[7,8] Stress can contribute to health problems directly through physiological effects like sleep disturbances,[9] depression and suicide,[10] and recurring or frequent illness, or indirectly through maladaptive coping behaviors like smoking,[8] drug and alcohol abuse,[11,12] and overeating. Coping is "considered to be of critical importance in determining whether a stressful event results in adaptive or maladaptive outcomes."[13] Given the serious consequences of stress, the need to reduce stress levels and strengthen coping skills is evident. In response, some researchers have suggested that self-leadership has the potential to reduce stress and enhance coping.[14] The purpose of the current study is to examine the moderating role of coping skills on the relationship between self-leadership practices and stress among college students.

Nearly four decades ago, leadership theorists Charles Manz and Henry Sims suggested that individuals can "manage their own behaviors by setting personal standards, evaluating their performance in terms of these standards, and by self-administrating consequences based on their self-evaluations."[15] Instead of leaders exercising control over people, self-leadership

CONTACT Sherry A. Maykrantz samaykrantz@salisbury.edu, School of Health Sciences, Salisbury University, 1101 Camden Avenue, Salisbury, MD 21801, USA.

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inspires the individual to exercise influence over themselves. Self-leadership is comprised of the three distinct categories of strategies: behavior-focused strategies, natural reward strategies, and constructive thought strategies.[16] Self-leadership involves a variety of self-imposed, behavior-focused strategies designed to help individuals shape their behaviors in the performance of necessary but unpleasant tasks that may be lacking in intrinsic motivation.[2] Self-leadership also entails self-influence strategies that capitalize on the naturally rewarding aspects of a task activity,[2] which implies that individuals perform tasks not because they are told, but because they genuinely want to. This effectively translates "should" into "want" in terms of task performance and becomes one of the main building blocks of self-leadership. Constructive thought strategies include positive self-talk and positive mental imagery.[16] Empirical research findings across disciplines ranging from organizational management to sport psychology have provided consistent support for a relationship between constructive thought strategies and enhanced individual performance.[16]

Self-leadership theorists have advanced conceptual models exploring the potential relationship between self-leadership and stress. For example, Lovelace et al.[17] advanced a model suggesting that when people in high stress work environments engage in self-leadership practices, they will experience more healthful regeneration and engagement leading to greater feelings of control relative to their task situation. Working along similar lines, Houghton et al[14] presented a model that suggests "that effective emotional regulation and self-leadership, as mediated through positive affect and self-efficacy, has the potential to facilitate stress coping among students." Although they did not empirically test their model, they did gather some preliminary qualitative data and called for future researchers to explore the model relationships.

Responding to the recommendations of Houghton et al.,[14] Wang et al[23] found that self-leadership is associated with positive coping skills and is instrumental in judging stressful situations. Although this study provided good support for showcasing the relationship between self-leadership and positive coping, it only examined coping (problem-focused and emotional-focused coping strategies) and falls short in exploring the relationship between self-leadership, coping, and *actual* student stress.

A tremendous amount of research on stress and college students has been highlighted in the literature. Every semester, the American College Health Association (ACHA) surveys college students from across the nation, measuring an array of health concerns. The Spring 2016 Executive Summary Report discussed a survey of 80,139 undergraduate students at 137 public institutions.[18] Respondents reported stress (33.8%) as significantly affecting their academic performance, which is defined by the ACHA as receiving a lower grade on an exam, project, or course, and/or dropping or failing a course. This is a 3.8% increase from 2015. Stress was ranked number one out of 30 health factors listed in the 2016 report. Alarmingly, over half of the respondents (63%) reported using alcohol to cope within the past 30 days. Furthermore, respondents indicated that they felt overwhelmed (86%), exhausted (82%), sad (66%), and lonely (60%) within the past 12 months.

College students use a variety of means to cope, including both adaptive and maladaptive coping strategies.[11,19] Internet usage involving problematic online behaviors has been explored as one type of maladaptive coping strategy used by college students to deal with stress.[20] Binge drinking (ie, having more than 4–5 drinks in 2 hr) is yet another maladaptive behavior that has been noted in several studies as one of the more favored ways that college students cope with stress.[11,12,21,22] Additional research findings suggest that students often cope with stress independently, instead of utilizing social support, which may lead to maladaptive coping behaviors.[8]

While there is a fair amount of research on coping and stress together,[8,12,13,19] there is very little research on stress as the outcome, moderated by coping. In addition, there is limited research on predictions of reducing college student stress using coping skills as a separate variable. This study aimed to fill these identified gaps by examining the relationship between self-leadership practices and student stress, using coping skills as a moderator. Based on the theoretical and empirical bases reviewed above, we advance the following research hypotheses:

H1: There will be a negative statistically significant relationship between self-leadership practices and student stress.

H2: There will be a negative statistically significant relationship between student coping skills and student stress.

H3: Student coping skills will moderate the relationship between self-leadership practices and student stress.

A summary of our conceptual moderation model of the relationships between self-leadership, student stress and coping is shown in Figure 1.

Methods

Participants

After IRB approval, undergraduate students from a public 4-year university located in the mid-Atlantic region were invited via email to participate in this study. A total of 712 completed the online survey in February 2017; however, 69 cases were deleted due to missing data, resulting in final sample size of 643. The majority of the respondents were female (76%) while the remaining 24% were male.

Measures

Self-leadership. The 9-item Abbreviated Self-Leadership Questionnaire (ASLQ)[24] was used to measure self-leadership practices. The ASLQ is a short version of the 35-item Revised Self-Leadership Questionnaire (RSLQ),[25] which is the most widely used and empirically validated self-leadership scale.[26] The ASLQ has demonstrated good reliability and construct validity that are comparable to the psychometric properties of the original RSLQ.[27,28] Sample items include: "I establish specific goals for my performance," "When I have successfully completed a task, I often reward myself with something I like," and "I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with." The ASLQ showed a Cronbach alpha of .73 for the current sample.

Coping. The 28-item Brief COPE Inventory[29] was used to measure coping strategies, with an overall Cronbach alpha of .79 for the current sample. However, after eight items were deleted the from the Brief COPE inventory due to the relevance of the questions, the Cronbach alpha dropped from .79 to .76. The Brief COPE Inventory is a short version of the 60-item COPE inventory,[30] which has been used successfully in a substantial number of health-related studies.[29] Empirical research suggests that the Brief COPE scale compares favorably with the original inventory and is an appropriate measure of coping behaviors.[31] Both inventories assess coping behaviors across fourteen dimensions including Positive Reframing, Substance Abuse, and Self-Blame. Sample items include: "I've been trying to see it in a different light, to make it seem more positive," "I've been using alcohol or other drugs to help me get through it," and "I've been criticizing myself."

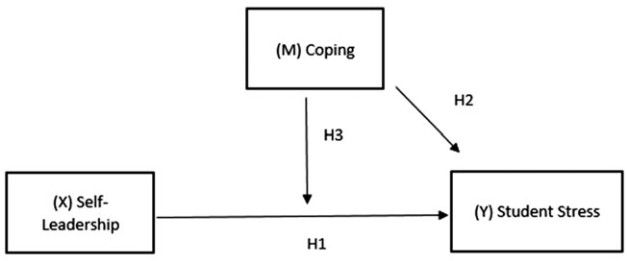


Figure 1. Conceptual diagram of the moderation model.

Student stress. The 10-item Perceived Stress Scale,[32] which measures stress-related thoughts and feelings within the past 30 days, was used to measure student stress levels. The PSS is the most widely used stress scale in social science research and consistently demonstrates strong reliability, validity, and measurement invariance.[33] The scale reflected a Cronbach alpha of .87 in the current sample. Sample items include: "In the last month, how often have you … felt that you were unable to control the important things in life?" " … felt nervous and stressed?" and " … felt confident about your ability to handle your personal problems?" All survey questions employed a Likert-type scale response.

Data analysis

We used SPSS 24 with the add-on PROCESS macro to test our hypotheses.[34] More specifically, we used a moderated regression analysis as the means to empirically test how the moderating variable (coping skills, *M*) strengthens the relationship between self-leadership (*X*) and student stress (*Y*). We mean centered our variables, creating a conditioned value, which is useful in the interpretation of the coefficients.[35] Mulitcollinearity was assessed by scanning a correlation matrix of the predicting variables in order to see if any of them were highly correlated, which they were not. In addition, a collinearity diagnostic test was run in SPSS to examine the variance of inflation (VIF). The results confirmed collinearity was not a problem because the VIF was very close to 1 and clearly less than 10.[36]

Results

Table 1 shows descriptive statistics, reliability, and Pearson correlations for our study variables. Table 2 displays the results of our moderated regression, which was used to test the hypotheses. The overall model was significant, $F(3, 639) = 14.8$, $p < .001$,

Table 1. Descriptive statistics, reliability, and Pearson correlations ($n = 643$).

Variables	Mean	Std. deviation	Cronbach's alpha	Correlations SL	Coping	Stress
1. Self-leadership	36.77	4.21	.731	–	.230**	–.084
1. Coping	46.67	7.92	.765	.230**	–	.216**
1. Stress	23.16	4.18	.873	–.084	.216**	–

** $p < .01$.

$R^2 = 76$. The interaction was added to the model, $F(3,639) = 5.97$, $p < .05$, $\Delta R^2 = 01$, resulting in a 1% change in the model. Our results explain 7.6% of the variance due to the variables self-leadership, coping, and their interaction.

Hypothesis 1 proposed that there would be a negative statistically significant relationship between self-leadership practices and student stress. A simple moderated regression was conducted to test X (self-leadership) on Y (student stress), which revealed a significant relationship, $b = -.143$, $t(3,639) = -3.21$, $p < .001$, as shown in Table 2. Consequently, Hypothesis 1 was supported, with the results indicating a negative statistically significant relationship between self-leadership and student stress. Hypothesis 2 proposed that there would be a negative statistically significant relationship between student coping and student stress. We tested the simple direct effect of M (coping) on Y (student stress) and found a significant relationship, $b = .134$, $t(3,639) = 6.16$, $p < .000$, as shown in Table 2. However, Hypothesis 2 was *not* supported. Contrary to our prediction, the results indicated a highly significant *positive* relationship between coping and student stress. Hypothesis 3 proposed that coping skills would moderate the relationship between self-leadership practices and student stress. Hypothesis 3 was supported, as shown in Table 2, which reveals an interaction effect of XM (self-leadership × coping) $b = -.012$, $t(3,639) = -2.44$, $p < .014$, indicating that the relationship between self-leadership practices and student stress was moderated by coping skills.

Table 2. Model summary and moderation regression ($n = 643$).

Variable	*b*	*SE B*	*t*	*p*
Self-leadership	–.143	.044	–3.21	.001**
Coping	.134	.021	6.16	.000***
Interaction	–.012	.005	–2.44	.014*
R^2	.076			.000***
F	14.8			
ΔR^2	.010			.014*
ΔF	5.97			

*$p < .05$. **$p < .01$. ***$p < .001$

Comment

Our findings show a negative statistically significant relationship between self-leadership practices and student stress. The importance of self-leadership as a potential tool for managing student stress is essential at a time when stress levels are steadily increasing across college campuses nationwide.[6,9,18] Previous research has established that there are many benefits related to understanding student stress.[6,9] Self-leadership theory provides a useful framework for explaining the relationship between self-leadership and student stress, suggesting that when self-leadership practices are used, student stress levels may be significantly reduced. Our study is among the first to examine the relationship between self-leadership and student stress. Stress in general is very complex, but for college students it is even more complex and can be detrimental to their health.[6,9] Self-leadership facilitates more and better control, and when students have the ability to control their surroundings and their own outcomes, they are more likely to be able to effectively manage their own stress levels.

We also explored the hypothesis that there would be a negative relationship between coping skills and student stress. Previous research supports this hypothesized relationship, suggesting that high coping skills would result in lower student stress.[13] However, our results did not support this hypothesis. Indeed, our findings showed a *positive* statistically significant relationship between coping skills and student stress. Essentially, when coping skills are high, then high stress levels are reported. This finding comes as a surprise and points toward the importance in understanding the different types of coping skills. High levels of coping skills could indicate either adaptive (good) or maladaptive (bad) coping skills, with the latter potentially leading to higher stress levels.

Understanding coping skills in relation to student stress is not only timely but also crucial at a time when stress levels are rising and maladaptive coping mechanisms seem to be more widely acceptable. For example, a recent study examined coping styles among college students and discovered maladaptive coping was the strongest predictor of stress, depression, and

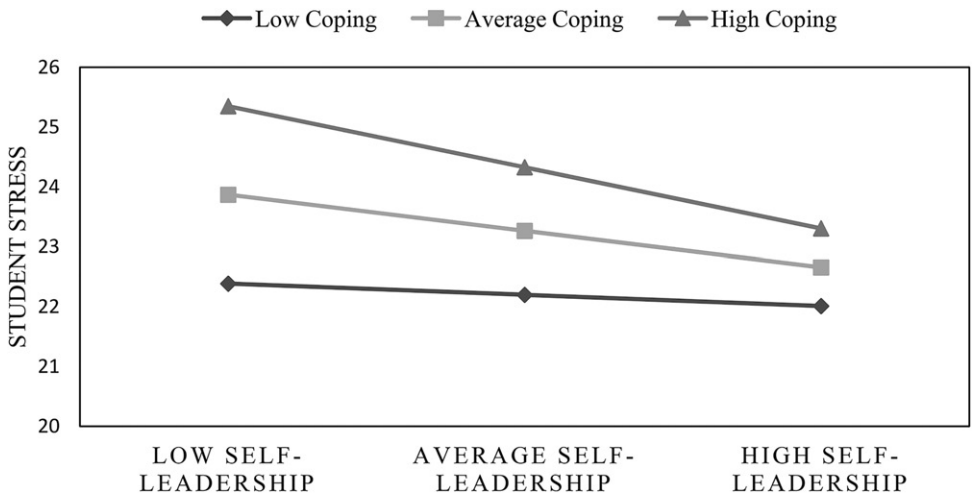


Figure 2. Interaction effects.

anxiety.[19] This study was instrumental in exposing the dangers of maladaptive coping on the developing minds of young college students and highlighted the idea that transitioning to college requires certain developmental skills for managing new tasks and new surroundings. College students who aren't equipped with the appropriate coping skills to handle their newly acquired self-independence are likely to experience higher stress levels. Looking at these findings from a practical standpoint, it seems likely that the more students deal with stress in an unhealthy or maladaptive way, such as blaming and criticizing themselves, the more stress they will experience. Likewise, consistent with the findings of Nobiling and Maykrantz,[37] students who deal with stress by using alcohol and drugs to cope (maladaptive coping) will usually experience more stress.

Our third and final hypothesis contended that coping skills would moderate the strength of the relationship between self-leadership and student stress and the results indicated that it did. As proposed in Figure 2, our findings indicate that the relationship between self-leadership and stress may be dependent upon the level of coping skills. When coping skills are low, there is little change in the relationship between self-leadership and student stress levels. However, when self-leadership is involved, stress levels decline. In fact, the lowest reported stress levels occur when low coping skills are coupled with high self-leadership. For average coping skills, there was a nominal change in the relationship between self-leadership and student stress. Finally, high coping skills showed the strongest relationship, indicating that high coping skills significantly increase student stress levels. Student stress levels are at the highest when high coping skills are reported and the relationship between self-leadership and stress is more significant for high coping when compared to the other two coping levels: low and average.

These findings are significant because they indicate that students are not coping with stress effectively. High coping is associated with high stress levels, which means when students do not cope well, or cope in ineffective or maladaptive ways, their stress levels increase. Indeed, prior research suggests that when students turn to maladaptive behaviors such as drug use or binge drinking as a favored coping strategy, it only spawns more stress.[12]

In summary, our findings suggest that self-leadership theory may help to explain how stress can be effectively managed and reduced among college students. Our findings surprisingly revealed a positive relationship between coping skills and student stress, indicating students who had the highest stress levels also had high coping skills. This result may be explained in part by maladaptive coping processes. Students may turn to alcohol or drugs as an effective way to cope, but such behaviors are considered maladaptive and detrimental to student stress and well-being. A primary purpose of this research was to examine the moderating role of coping skills on the relationship between self-leadership and student stress. Our findings demonstrated that coping skills did alter the relationship between self-leadership and student stress. The most significant finding in the moderating role of coping skills was that high coping skills resulted in high student stress and substantially weakened the relationship between self-leadership and student stress. The findings from this study make an important contribution to the existing literature on self-leadership, highlighting how beneficial self-leadership practices can be at reducing student stress among

college students and serving as a potential catalyst for future research exploration.

Theoretical implications

Self-leadership theory states that individuals will lead, influence, regulate, and motivate themselves to achieve their goal.[2,16] Our results provide insight into how self-leadership practices may result in reducing stress among college students. Moreover, our study is the first in the empirical literature to use coping skills as a moderator on student stress, as well as the first to examine the relationship between self-leadership and student stress. Our findings showcase self-leadership as a potentially effective tool for managing and reducing student stress. Self-leadership offers the opportunity for students to take responsibility for themselves and the notion that one can be responsible for leading oneself through life is exciting, especially in today's world.

Practical implications

From a practical standpoint, this study provides simple explanations of how self-leadership practices influence student stress. Additionally, this study generates useful explanations for various coping levels as it relates to stress. Understanding how coping affects the relationship between self-leadership and stress offers an opportunity for college administrators, faculty, and health promotion and wellness staff to take an ethical responsibility for the students. One particularly intriguing interpretation of our findings is that students who engage in self-leadership strategies upon entering college may be more likely to move toward the use of more constructive and adaptive coping techniques, as compared to many of their peers who may be embracing more maladaptive coping strategies such as binge drinking and drug use.

Consequently, our study provides incentives for college leaders, administrators, faculty, and health promotion and wellness staff to implement self-leadership interventions as a means of directly addressing student stress and enhancing positive and adaptive coping strategies. While other interventions and programs involving mindfulness and the evaluation of mind/body[38,39] have been suggested for helping to reduce stress in college students, we believe that self-leadership training interventions, perhaps embedded in freshmen orientation or freshmen experience courses, hold particular promise for better equipping students for the stress they will encounter during college. Houghton et al.[14] provide specific recommendations for integrating self-leadership into academic programs and classes in management and business. We suggest that exposure to self-leadership strategies as a stress management tool could benefit students across multiple disciplines. Indeed, the implementation of self-leadership programs and interventions in academic institutions could serve as a professional development opportunity for faculty and staff, as well as for students.

Policies supporting self-leadership interventions to lower student stress levels may benefit not only students but also the university as well. For example, lowering student stress rates increases student health and performance, potentially increasing the return on investment for the student. A primary goal of higher education is student retention and implementing a policy that encompasses the use of self-leadership practices, coupled with adaptive coping skills, could support this goal. Our study suggests that self-leadership is related to lower student stress and, more importantly, that self-leadership practices interact with good coping skills, which in turn reduces student stress. Self-leadership could also be effective in further helping students to decrease other undesirable behaviors, such as self-medicating, binge drinking, drug use, and poor study skills. At the institutional level, self-leadership practices among students could be effective in increasing other positive outcomes including student retention, academic achievement, and graduation rates.

Although examining the overall stress rates of students was not a primary purpose of our study, the reported stress rates in our study deserve some attention because they provide additional incentive for organizational leaders in higher educational institutions to be proactive in helping students to effectively deal with stress. Overall, 93.1% of all respondents in our study reported experiencing some type of stress within the last month, an extremely high figure by any standard. In contrast, less than 2% of the respondents reported never feeling stressed within the last month. These findings offer an opportunity to dig deeper into the cause of high stress, and more importantly, into what programs can be implemented to help student manage their stress levels.

Limitations

The recommendations and conclusions stemming from our study are subject to certain limitations. First, coping was measured as a continuous moderating

variable, which made it difficult to distinguish adaptive (good) coping from maladaptive (bad) coping. Second, the cross-sectional research design only measured respondents' attitudes and behaviors related to self-leadership, coping skills, and stress. It did not address personal characteristics, prior knowledge, and/or experiences. Nor did it address perceived competence or confidence that may affect individual levels of self-leadership practices, coping skills, or stress levels. Third, the cross-sectional research design used a Web-based self-reporting survey to collect the data, which may have presented a social appeal bias. Finally, the cross-sectional research design used a convenient sampling method of college students; therefore, the results may not be generalizable.

Conclusion

Based on the findings from this study, we advance several recommendations for future research involving self-leadership, student stress, and coping skills. First, considering the fact that only 7.6% of the variance was explained by our research model, future research should explore other variables that could explain additional variance. Another valuable area of inquiry would be to conduct a study using qualitative methods. Qualitative research seeks to understand people's experiences and how their experiences help to explain certain phenomena. Expanding on the current research by conducting a qualitative study would allow for a more in-depth understanding of how and why: researchers could seek to determine why students are stressed and how self-leadership contributes to their ability to manage their stress levels.

Finally, the findings from this study create an opportunity to explore coping in both adaptive and maladaptive ways (ie, as a categorical variable). Several studies have concluded that maladaptive coping results in poor outcomes, such as stress, depression, and anxiety.[11,19] The current study assessed coping skills as a continuous variable; therefore, the actual breakdown of adaptive and maladaptive coping behaviors is unknown. Additional research could be beneficial in pinpointing the ways in which students cope and could aid in developing interventions to curb the use of maladaptive coping.

Stress still remains a primary health concern among college students;[6,9,18] therefore, research about student stress is important. This study examined the role of coping skills in moderating the relationship between self-leadership practices and student stress. The findings from this study deepen our understanding of how self-leadership practices may effectively reduce student stress and highlight the need for assisting students in developing effective and adaptive coping skills. Our results shine a spotlight on the health-related issue of college student stress, while simultaneously showcasing self-leadership as a potentially effective tool for reducing student stress. Additionally, our findings encourage college students to recognize that they have the ability to lead themselves through stressful situations. Self-leadership is a practice, a skill that can be taught, and it is simple enough for anyone to adopt. To conclude, self-leadership theory provides an excellent framework for stress reduction that may be emulated across multiple disciplines in higher education resulting in higher levels of student well-being and personal effectiveness.

Conflict of interest disclosure

The authors have no conflicts of interest to report. The authors confirm that the research presented in this article met the ethical guidelines, including adherence to the legal requirements, of the United States and received approval from the Institutional Review Board of Salisbury University.

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