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The Effect of Self-Regulation on Academic Success Among College Students with Traumatic Life Events

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Abstract

The current study investigated the relationship between traumatic life events, academic performance, and self-regulation to predict why some students persevere in college. Students with more trauma were hypothesized to have lower GPAs, high self-regulators would have higher GPAs, and self-regulation would moderate the relationship between traumatic life events and GPA. There was no significant correlation between traumatic life events and GPA (N = 59). High self-regulators had marginally significant higher GPAs, but self-regulation was not found to moderate the relationship between traumatic life events and GPA. The implications of these findings advance our understanding of the critical variables that may help colleges better understand and identify reasons why some students drop out, whereas others are retained.

Keywords: college students, traumatic life events, self-regulation, academic persistence

The Effect of Self-Regulation on Academic Success Among College Students with Traumatic Life Events

For many, the college experience can be some of the best years of someone's life. For some however, they can be some of the most difficult. The momentous experience that college is supposed to provide for students may be mitigated by a host of negative life events and stressors that a student may bring with them to college, or have experienced during college (Frazier et al., 2009). Over time, these negative life events may manifest themselves into trauma-like symptoms that negatively impact their studies – especially their GPA and attendance, and ultimately maybe even their ability to complete their degree (Boyratz et al., 2016). Survivors of traumatic life events such as illnesses, life-threatening accidents, abuse, death of loved ones, and violence are more likely to be absent from school and drop prematurely than those with no history of traumatic life events (Pereira et al., 2018). The adverse emotions that survivors of traumatic life events experience, such as depression, hopelessness, and sadness, are associated with lower GPA and lower retention rates among college students (Eisenberg et al., 2009). These negative life events do not just impact a student's mental health but can negatively impact their physical health as well (Anders et al., 2012, 2014).

Anders et al. (2012) compared the difference between college students who were exposed to traumatic life events over their lifetime to students who were not. They hypothesized that the number of traumatic life events that college students experienced over their lifetime would be associated with lower physical and mental health functioning. The students took a survey that measured traumatic life events and subjective well-being. The study found that students who experienced more traumatic life events reported larger unhealthy changes in physical (weight loss/gain, getting sick more often, increase/decrease in sleep) and mental functioning (increases

in depression, anxiety, feelings of hopelessness, and decreases in life satisfaction) than those who reported fewer or no traumatic life events. Anders et al. (2014) repeated their 2012 study but looked at students who experienced traumatic life events within a 2-month period, instead of lifetime exposure. Students who experienced traumatic life events in the past 2 months were not as mentally or physically healthy as those who had not experienced any traumatic life events in the past 2 months. Whether traumatic life events are experienced over a lifetime, or a short period of time, these studies confirm that students who experience traumatic life events are more adversely affected than those without these experiences (Anders et al., 2012, 2014).

Overall, the mental and physical health consequences for these students tend to be quite costly. Additionally, traumatic life events negatively affect a student's satisfaction with their studies at college (Boyras et al., 2015) and their levels of motivation to succeed (Owens & Chard, 2006). However, these traumatic effects do not affect all these students equally. Some students are impacted more seriously than others, and research has identified several factors that can help predict which students are more likely to be affected. For example, self-regulation, resiliency, attachment styles, and social support are all factors that can shape how students are affected by their trauma (Banyard & Cantor, 2004).

Among these several factors, self-regulation has been argued to be most important (Duru et al., 2014; Pintrich & DeGroot, 1990). For students to be academically successful, students must be motivated to regulate their cognition, effort, and emotional reactions to classroom performance. Understanding self-regulation is important because it influences motivation, thought processes, emotional states, and behavior (Duru, et al., 2014). Self-regulation is defined as the process by which one monitors, controls, and modifies the self, (or their) thoughts, feelings, and behaviors (Carver & Scheier, 1981). For example, a student high in self-regulation

would be more likely to turn down a social opportunity to “hang out” the night before a test they still need to study for, compared to a low self-regulator. In general, a high self-regulator will be more flexible to the demands of situations they encounter, tend to be more successful at school and work, and have better psychological health when compared to those who are low self-regulators (Duru, et al., 2014). A number of studies have looked at how self-regulation can help explain why some college students may persevere better than others who have similar traumatic experiences.

Villavicencio and Bernardo (2013) looked at the relationship between emotions and self-regulation and how they can predict academic achievement. They hypothesized that high self-regulation and positive feelings towards school, specifically enjoyment and pride, are predictors of high academic achievement. They also hypothesized that enjoyment and pride moderate the relationship between self-regulation and academic achievement. In other words, for students who report higher levels of pride and enjoyment in school, grades would be higher for those who report higher levels of self-regulation. The students completed a survey that measured academic self-regulation, academic achievement, and their enjoyment and pride towards their school and studies. Villavicencio and Bernardo (2013) found that enjoyment and pride both moderated the relationship between self-regulation and grades. For those who reported higher levels of enjoyment and pride, their self-regulation positively correlated with their grades. For students who reported low levels of pride, their self-regulation had no relationship with their grades. However, those who reported lower levels of enjoyment, their self-regulation negatively correlated with their grades. The type of emotions and attitude one has for their studies is important when it comes to achieving academic success. The more positive one is towards their

schooling, the more enhanced the positive effects of self-regulation, and the more likely they are to achieve academic success.

Duru et al. (2014) wanted to explore the relationship between students' levels of burnout, academic achievement (GPA), and self-regulation. They hypothesized that students' self-regulation skills would mediate the relationship between burnout and academic achievement. Three hundred and eighty-three students completed surveys measuring burnout and self-regulation. Duru and colleagues (2014) found that self-regulation was positively associated with academic achievement and that academic achievement was negatively associated with burnout. Students who scored high on self-regulation had higher GPAs than students who scored lower on self-regulation. Furthermore, students with higher levels of burnout had lower GPAs than students with lower levels of burnout. Duru et al. (2014) also found that self-regulation mediates the relationship between burnout and academic achievement. Duru et al. (2014) provide a compelling conclusion for why self-regulation is an important variable of interest: "Individuals with high self-regulation skills can manage their emotions, thoughts, behaviors, and time more effectively, and use their power and resources more successfully. At the same time, they have less emotional exhaustion, and show less indifference and apathy toward their academic responsibilities" (p. 1282).

In sum, we know that higher self-regulation is associated with higher academic performance (Duru et al., 2014; Pintrich & DeGroot, 1990), positive attitudes towards school can moderate the relationship between self-regulation and academic achievement (Villavicencio & Bernardo, 2013), traumatic life events are related to poor academic performance (Anders et al., 2012; Eisenberg et al., 2009), traumatic life events are related to poor mental and physical health (Anders et al., 2012, 2014), and lastly, traumatic life events negatively affect a student's

motivation to succeed (Owens & Chard, 2006). Although the few studies conducted on traumatic life events and academic performance found that traumatic life events are associated with lower academic performance (Anders 2012, 2014; Eisenberg et al., 2009; Owens & Chard, 2006), it is unclear how a student's ability to self-regulate may impact this relationship. More specifically, might a student's self-regulation moderate the relationship between traumatic life events and academic achievement, such that a high self-regulator's GPA isn't as affected by their traumatic life events, compared to a low self-regulator? Self-regulation may be the variable that best predicts why some students with traumatic life experiences persevere in school, and why others do not. One notable study investigated the relationship between traumatic life events and self-regulation among college students (Boyras et al., 2016).

Boyras et al. (2016) wanted to explore the reasons why traumatic life events have a harmful effect on college outcomes, such as an increase in academic difficulties and students dropping out. Specifically, they looked at how traumatic life events affect self-regulation and how self-regulation then affects academic achievement and one's desire to continue enrollment in college. They hypothesized that students who enter college with more traumatic life events will experience more difficulties in regulating their effort, which will negatively affect their GPA and college persistence. Boyras et al. (2016) measured traumatic life events, academic self-regulation, and GPA. They found that students who enter college with more traumatic life events reported lower levels of self-regulation which negatively affected their GPA and their enrollment in college. Although there was no direct impact of high trauma symptoms on students' grades and retention, Boyras et al. (2016) concluded that high trauma symptoms increase the risk of lower grades and dropping out because their ability to persevere is reduced.

However, Boyraz et al. (2016) did not look at the moderating effects of self-regulation and how the degree of self-regulation may help predict the strength of the relationship between academic achievement and traumatic life events. Studying the moderating effects of self-regulation on academic achievement and traumatic life events might contribute to a better understanding of why some students with trauma persevere in college. No study has been found that has investigated whether self-regulation moderates the relationship between traumatic life events and academic performance. In other words, self-regulation can be critical in understanding the strength of the relationship between traumatic life events and academic performance. Students who are high self-regulators may not see their academic performance as affected by traumatic life events. However, low self-regulators may see their academic performance more greatly, and negatively, affected by their traumatic life events. Being able to predict who will be more negatively affected by traumatic life events, may also better prepare institutions to address the needs of those students, and provide a more focused approach to improving the quality of their college experience, and retaining these at-risk students.

The current study investigated the relationships between traumatic life events, academic success, and self-regulation among college students. It was hypothesized that students with more traumatic life events will have a lower GPA overall, than those with fewer traumatic life events. It was also hypothesized that students who are high self-regulators will have a higher GPA than low self-regulators. Further, if Boyraz et al. (2016) findings are supported, then traumatic life events and self-regulation should negatively correlate. Lastly, we hypothesized that self-regulation may have a moderating effect on the relationship between traumatic life events and GPA. Thus, high self-regulators should show no relationship between traumatic life events and GPA because academic performance should be less likely to be affected by traumatic life events

for high self-regulators. Low self-regulators should show a negative relationship between traumatic life events and GPA because their academic performance would be more greatly, and negatively, affected by traumatic life events.

Method

Participants

Data was collected from 59 students at a Penn State Commonwealth Campus from four different classes (Human Development and Family Studies $n = 20$, Psychology $n = 14$, English $n = 9$, and Math $n = 16$). There were 34 females and 23 males (2 missing), and 52 (88%) identified as white/caucasian. The average GPA was 3.44 ($SD = .41$), the average age was 22.1 ($SD = 6.4$; $Mdn = 21.0$), and the range of ages was 18-56. Twenty-two students were sophomores (37.3%), 21 were juniors (35.6%), and 16 were seniors (27.1%). Of 59 student participants, 57 reported at least one traumatic life event ($M = 4.17$, $SD = 3.48$; Mode = 3.00; Range = 0.00 - 20.0).

Materials

Students completed a five-page survey that measures traumatic life events and self-regulation. As with Anders and colleagues (2012, 2014), traumatic life events were assessed using the “Traumatic Life Events Questionnaire” (TLEQ) which is a 23-item survey (Kubany, 2004). The TLEQ is part of a trauma inventory to assess trauma history, and PTSD, and is intended to be used as a treatment planning tool (see Kubany et al., 2000, for instrument validation). The TLEQ asks about a variety of traumatic events, such as experiencing a life-threatening illness, family violence, sexual assault, and motor vehicle accidents. A sample question from the TLEQ asks “Were you involved in a motor vehicle accident for which you received medical attention or that you were badly injured or killed someone?” (Item 2). Each item is based on a *yes* or *no* answer, reflecting whether the event was experienced. Due to

restrictions in time allotted for recruitment and space and length of the survey, it was not practical to include all questions from the inventory, as we did not intend to treat or diagnose. Thus, only the first question on whether the event occurred or not for each traumatic life event item was used.

Two different, but very short, instruments were used to measure self-regulation. General self-regulation was measured using the “Self-Regulation Scale” which is a 10-item survey (Diehl et al., 2006). A sample question asks “It is difficult for me to suppress thoughts that interfere with what I need to do” (Item 5). The questions are on a 4-point scale ranging from *not at all true* (1) to *completely true* (4). As with Villavicencio and Bernardo (2012), academic self-regulation was measured using 22-items from the self-regulated learning strategies section of the much larger 44-item “Motivated Strategies Learning Questionnaire” (MSLQ) (Pintrich & DeGroot, 1990). Boyraz et al. (2016) measured self-regulation using the MSLQ as well but used a different set of questions from a different version of the instrument. A sample question asks “I find that when the teacher is talking I think of other things and don't really listen to what is being said” (Item 46). The questions are on a 7-point scale ranging from *not at all true of me* (1) to *very true of me* (7). Academic performance was measured using GPA scores that were self-reported by participants. Demographic information was collected for race, grade level, GPA, age, and gender.

Procedure

The study was approved by the Institutional Review Board. A convenience sample of four classes were selected (Advanced Child Development (429), Introduction to Abnormal Psychology (270), Effective Writing: Writing in the Social Sciences (202A), and Elementary Statistics (200)) and professors from those classes provided consent for the researchers to recruit participants from their class. Freshman level classes were intentionally excluded because

freshman would not have a GPA to report during the Fall data collection period. Two consent forms were handed out to every student. Students were instructed to read the form in full, and to sign the consent form if they agree to volunteer to participate. Students turned in one consent form to the researcher and the student kept the other consent form. After obtaining informed consent, the survey was handed out. Typed instructions of the study were read to the participants. Participants were reminded not to put their name on the survey. Students were asked to read the instructions carefully and fill out the survey. Once completing the survey, students put their survey in a folder. The entire procedure took approximately 15 minutes for participants to complete. Participants could not be immediately debriefed after participating because the campus is small and debriefing while data collection is ongoing risks contaminating the sample. Participants were debriefed at the end of the semester.

Results

There was no significant correlation between GPA and general self-regulation, GPA and academic self-regulation, GPA and traumatic life events, traumatic life events and general self-regulation, or traumatic life events and academic self-regulation, $ps > .05$. There was a positive correlation between traumatic life events and age, $r(57) = .339, p = .009$. The older an individual was, the more traumatic life events reported. There was a positive correlation between age and academic self-regulation, $r(56) = .263, p = .046$.

A composite self-regulation score was created by adding the general self-regulation scores to the academic self-regulation scores. There was no significant correlation between composite self-regulation and traumatic life events, $p > .05$. There was a positive correlation between age and composite self-regulation, $r(56) = .288, p = .029$. There was a near significant positive correlation between composite self-regulation and GPA, $r(44) = .271, p = .068$. Considering the other near significant positive correlation between GPA and academic self-

regulation, $r(44) = .263, p = .077$, it appears that high self-regulators tend to perform better in school, although this did not reach the .05 level of significance.

Independent sample t-tests were conducted comparing males and females on traumatic life events, general self-regulation, academic self-regulation, and composite self-regulation. Males did not differ from females on traumatic life events, $t(55) = .154, p = .878$, general self-regulation, $t(55) = .531, p = .598$, academic self-regulation $t(54) = .721, p = .474$, or composite self-regulation $t(54) = .775, p = .442$. There do not appear to be any sex differences on any of the relevant measures.

A one-way ANOVA found no significant differences between grade levels (freshman, sophomore, junior, and senior) on general self-regulation, academic self-regulation and composite self-regulation, $ps > .05$. However, there was a statistically significant difference between grade level and traumatic life events, $F(2) = 5.256, p = .008$. The higher the grade level, the more traumatic life events reported. Juniors reported significantly more traumatic life events ($M = 5.81, SD = 4.09$) than sophomores ($M = 2.59, SD = 1.74$).

A multiple regression analysis was conducted to examine the relationship between student GPA and various potential predictors – age, gender, general self-regulation, academic self-regulation, and traumatic life events. The multiple regression model with all five predictors was not significant, $R^2 = .109, F(5, 38) = .926, p = .475$. Our model of five independent variables (predictors) explains only 10.9% of the proportion of variance in student GPA.

A partial correlation was conducted to determine the relationship between an individual's GPA and the number of traumatic life events reported while controlling for self-regulation. There was no partial correlation between the dependent variable, GPA ($M = 3.44, SD = .41$), and the

independent variable, traumatic life events ($M = 4.0$, $SD = 3.4$), while controlling for self-regulation ($M = 132.8$, $SD = 16.7$), $r(43) = -.069$, $n = 46$, $p = .652$.

A test of the moderating effect of self-regulation on traumatic life events and GPA was conducted using a hierarchical multiple regression to assess the statistical significance of the interaction between traumatic life events and self-regulation. There was no moderator effect of self-regulation, as evidenced by the addition of the interaction term explaining a non-significant additional 1.1% of the total variance, $\Delta R^2 = .011$, $\Delta F(1, 42) = .491$, $p = .487$. There was no significant relationship between traumatic life events and GPA at any level of self-regulation.

Discussion

There was no support for the hypothesis that students who report more traumatic life events had a lower GPA than those with fewer traumatic life events. This finding was not consistent with previous research that predicted a negative relationship between traumatic life events and academic performance (Anders et al., 2012; Eisenberg et al., 2009). The hypothesis that high self-regulators have higher GPAs than low self-regulators was marginally supported. Students who scored higher on self-regulation had a higher GPA than those who scored lower, but this did not quite reach statistical significance. This pattern of results was consistent with previous research that found those with higher self-regulation skills tend to be more successful in school (Duru et al., 2014; Pintrich & DeGroot, 1990).

The study found no support for the last hypothesis that self-regulation moderates, or has any influence, on the relationship between a student's GPA and their history of traumatic life events. Although Boyraz et al. (2016) did not test self-regulation as a moderator variable, they found that students who reported more traumatic life events had trouble with regulating their

effort which negatively impacted their academic performance. We, on the other hand, did not find support for this conclusion.

Although gender differences were not hypothesized, analyses were still conducted to find that males and females did not differ on any of the measures tested. Gender differences are typically found on types of traumatic life events experienced (Banyard & Cantor, 2004; Boyraz et al., 2016). For example, women are more likely to report sexual abuse and emotional abuse type of trauma (Boyraz et al., 2016). But we did not analyze how males and females reported on each trauma type within the questionnaire, as this was beyond the scope of the current study.

It was also found that students who were older or in a higher grade level had experienced more traumatic life events. This finding was expected because participants who are older have been around longer to experience more traumatic life events than those who are younger or in a lower grade level. Additionally, the older an individual was, the higher they scored on the self-regulation scales. This finding was also unsurprising as teenagers transitioning into young adulthood would be expected to improve how well they regulate themselves. Although the aforementioned relevant studies did not analyze this relationship, there is research to support this positive age and self-regulation relationship (Murphy et al., 1999).

With this particular sample, the multiple regression model including age, gender, traumatic life events, self-regulation and general self-regulation could not predict a student's GPA. Statistically significant models depend on sample size and the strength of the underlying relationships. The latter is more likely the issue, since we did not find the expected co-relationships between our variables of interest. There is also the possibility that the relationship is not linear. A successful model could be used to help identify future students at-risk of

academically underperforming and dropping out. More research on the relationship between traumatic life events, academic performance and college persistence is necessary.

This study had a few important limitations. The student sample at this particular college campus may not be representative of the college samples used in previous studies. This campus is a small commuter campus and most students live at home, which may buffer the negative effects of traumatic life events that previous studies predicted. The sample mean GPA of 3.44 was also unusually high ($SD = .41$). This means we may not have captured enough underperforming students (and with traumatic life experiences) to adequately explore the role of self-regulation in explaining college persistence. We speculate that the unusually high GPA was more a reflection of the classes surveyed than a fair representation of students on campus. Two of the sections of Math and English selected tend to have a lot of students in qualifying programs such as engineering and nursing that require higher GPAs to remain in their respective program. Furthermore, the decision to use an instrument that measures the number of traumatic life events experienced, to serve as a proxy for trauma was most likely a limitation. The number of traumatic life events experienced may not necessarily reflect trauma or trauma symptoms. For example, parents divorcing may be extremely traumatic to one student, but not at all to another. The full TLEQ diagnostic instrument does include a follow-up question about whether “fear, helplessness, or horror” was experienced by the participant, in the form of another yes or no answer (Kubany, 2004). Although an improvement, a “yes” answer still does not capture the full extent of how traumatic an event was to the participant, that a scale would. Additionally, the frequency of the occurrence of traumatic life events was also not measured. One instance of witnessing family violence may not result in the same trauma experience as witnessing a life span of family violence. Future studies should consider using an instrument that accounts for

these limitations to accurately measure the impact of traumatic life events. We offer one more recommendation for future research – to include one additional predictor variable purported to be as important to college persistence as self-regulation: resilience.

Banyard and Cantor (2004) investigated students' attitudes towards their trauma for the purpose of learning why some students make the transition through college successfully while others struggle or leave school after only a short amount of time. Banyard and Cantor (2004) speculated that those who can make positive meaning from their trauma would have greater resilience to the trauma and thus persevere in college. Resilience is the successful “bounce back” or adaptation to overcome significant adversity, in the form of a high-risk situation or threat (Luthar et al., 2000; Norman 2000). If students can become resilient and make positive meaning from their trauma, then they will be less affected by their trauma. They hypothesized that students with a history of exposure to traumatic events who made positive meaning of their trauma as well as having strong coping strategies, would have greater resilience to the traumatic events and their academics would not be as affected. They found that students who experienced more traumatic events had more difficulty adjusting to college and had lower academic scores. However, trauma survivors who believed they could control what happened to them, or how they responded to what happened to them, or learned something positive or became stronger from their events tended to be more resilient. This means that although students with trauma are less likely to adjust to college successfully, those with a greater sense of control tend to be more resilient and their academic performance is less likely to suffer.

Banyard and Cantor (2004) found that high levels of resilience can positively impact how college students process their trauma, thus resulting in their academics not being affected by their traumatic life events. Students with high levels of resilience also tend to overcome their trauma

more quickly than students with lower levels of resilience (Bulathwatta et al., 2016). Including both variables, self-regulation and resilience, can test the predictive power of each of these variables on their own, and both combined. Perhaps students with trauma who are most likely to academically succeed are the ones who score high in both self-regulation and resilience.

One of the main purposes of this study was to test self-regulation as a moderator variable to better understand the relationship between GPA and traumatic life events and contribute to our knowledge of college persistence. Namely, might self-regulation predict why some students with traumatic life experiences persevere in college? Unfortunately, we could not adequately test the moderating effect of self-regulation because we did not find the expected negative correlation between traumatic life events and GPA. Thus, it remains unclear whether self-regulation moderates the relationship between traumatic life events and academic performance. Although we did not find evidence for the hypothesized role of self-regulation, we hope our challenges, limitations, and recommendations help encourage improvements in methodology for those who study college students with trauma. Future studies should account for the limitations reported and continue investigating the role that self-regulation may play in explaining college persistence among students with trauma.

The college experience may exacerbate mental health anxieties for students with traumatic life experiences and/or trauma symptoms, that contribute to burnout, poor academic performance, and to dropping out altogether (Anders et al., 2012, 2014; Boyraz et al., 2016; Duru et al., 2014; Eisenberg et al., 2009; Owens & Chard, 2006; Pereira et al., 2018). However, not all students are equally affected, and where some students drop-out, others persevere. But why? The “why” is the driving force behind this line of research. This is critical to understand, especially with this particular student population, as they are more vulnerable to drop out. Given

that the percentage of college students who have experienced at least one type of trauma, has been found to be as high as 85% (Anders et al., 2012; Frazier et al., 2009; Owens & Chard, 2006) it is even more vital to better understand this student population so that institutions can provide better support to retain them (Anders et al., 2012; Boyraz et al., 2016). Better support may mean increased education in mental health for school counselors, academic advisors, and faculty mentors, increasing academic and support systems, providing mental health screenings, and having mental health sources readily available.

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