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First semester academic functioning of college students : the role of stressful and traumatic life events.

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FIRST SEMESTER ACADEMIC FUNCTIONING OF COLLEGE STUDENTS: THE ROLE OF STRESSFUL AND TRAUMATIC LIFE EVENTS

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DEDICATION

This dissertation is dedicated to my grandmother, Frances Schnipke, who always encouraged my love of learning and will always be greatly missed, as well as the Cardinal Covenant Program students, past and present, who inspired a burgeoning zeal for this work that I hope never fades.

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ABSTRACT

FIRST SEMESTER ACADEMIC FUNCTIONING OF COLLEGE STUDENTS: THE ROLE OF STRESSFUL AND TRAUMATIC LIFE EVENTS

Ashlee J. Warnecke

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A large number of the nearly 20 million students who were attending American colleges in 2015 will not graduate. One factor that may affect the success of students is the influence of past experiences, including past adversity, or exposure to traumatic or non-traumatic stressors. The present study sought to better describe and understand the role of stress/trauma history in college students from low socioeconomic backgrounds. The potential relationship this history has with academic outcomes was explored. Additionally, as not all students with a history of stressful and traumatic life events struggle academically, self-reported resilience, as well as resiliency factors, were included in analyses to determine the potential role these variables may have. Self-reported history of stressful/traumatic life events, resilience, and various demographic factors was collected at college orientation for a group of students (N = 54) with low socioeconomic backgrounds (family income below 150% of the poverty level). Academic record information was collected at the end of the first semester. Overall, the present sample was similar to other college students in terms of event exposure (93% total, 57% traumatic), as well as mental health symptoms and self-reported resilience and resiliency factors. Resiliency variables were correlated with one another, but not with event

exposure or academic outcomes. Total event exposure was significantly correlated with fall course withdrawals, and for each event reported, a student was 24% more likely to withdraw from a course. Exploratory regressions examining event exposure weighted by perceived effect on life predicting fall GPA and fall D/F grades revealed that this accounted for 14% and 11% of the variance, respectively. Including one potential resiliency factor in the regression model did not improve the model in a hierarchical regression. This research has implications for educators, mental health professionals, and college administrators.

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INTRODUCTION

College students are a unique and growing subset of the population. Currently, they are of particular interest, as the rates and intensity of psychological problems of college students have increased dramatically (Hunt, & Eisenberg, 2010). For example, according to the World Health Organization (WHO) Global Burden of Disease study, mental health problems account for nearly half of the overall disease burden for youth and young adults ages 12-24 (Patel, Flisher, Hetrick & McGorry, 2007; WHO, 2002). Corresponding with enrollment in postsecondary education, the onset of many psychological disorders occurs between the ages of 18 and 24 years. In 2008, over half of college students met DSM-IV TR criteria for a current psychological disorder within the past year (Blanco et al., 2008). Additionally, the number of 18 to 24 year-olds enrolled in college in 2013 was 39.9%, an approximately 4% increase from 2000 (National Center for Education Statistics, 2015). Although a large number of individuals attend college, not all of these students are successful. When considering four-year colleges in America, reported drop-out (self- and university-initiated) rates range from 50% to 65% (Boyraz, Granda, Baker, Tidwell, & Waits, 2015; Boyraz, Horne, Owens, & Armstrong, 2013). Many of these students drop out after the first year of college (Boyraz et al., 2015). Grade point average (GPA) is the most often studied precursor of dropping out, with students who have a low GPA being more likely to drop out than students with higher GPAs (Boyraz et al., 2015; Boyraz et al., 2013; Barry, Whiteman, & MacDermaid Wadsworth,

2012). Although GPA is the most often studied precursor to dropping out, a number of other factors could be involved.

Among these factors are whether or not students are prepared for college and financial difficulties. Many students are currently unprepared for college because of issues with secondary education. However, studies that control for high school GPA or ACT/SAT scores still find a relationship between GPA and dropout rates (Boyraz et al., 2015; Boyraz et al., 2013). When one considers the rising costs of postsecondary education, finances seem plausible as the main reason that students would leave college. Although some research supports finances as a contributor to college dropout rates, this research also reports that this is not a direct relationship. Finances and economic background influence dropout rates by varying the level of initial commitment to educational goals (Mallette, & Cabrera, 1991). Therefore, other factors are likely playing a role in this relationship. Because of this, and given the increase in psychological difficulties among college students, this research sought to identify clinical factors, such as stress reactions, that could contribute to educational outcomes.

Financial difficulties and lack of preparedness for college share a common factor – they can both increase the stress experienced by a college student. College students report the daily hassles they experience related to transitioning to college, as well as the stress related to constant evaluation and high demands, lead to decreased quality of life. The top sources of reported stress include increased workload and new responsibilities (Ross, Niebling, & Heckert, 1999). Although daily hassles and minor stressors are the most commonly reported difficulties, some college students experience stressors that could be considered traumatic. Traumatic stressors are traditionally defined as events or

situations that involve actual or perceived death, injury, or sexual violence, as well as learning about or witnessing these events (American Psychiatric Association, 2013). Approximately 66% of incoming college students report exposure to at least one traumatic stressor through either directly experiencing or witnessing a traditionally defined traumatic stressor prior to beginning college. Both gender and socioeconomic status (SES) have been associated with trauma severity when considering the type of trauma, as well as the number of traumas reported. Specifically, women and those of lower socioeconomic status are more likely to report a high number of traumas, as well as report more severe traumas (Read, Ouimette, White, Colder, & Farrow, 2011).

Research points to traumatic stressors in particular as a factor that increases dropout rates. A study comparing military-affiliated and civilian students found that combat-exposed veterans reported more trauma exposure and increased dropout rates than veterans without combat exposure or civilian students (Barry et al., 2012). Furthermore, in a study examining semester-by-semester enrollment in college students with a history of childhood abuse, dropout rates were higher in those students with a history of childhood abuse compared to those without a childhood abuse history for all but two semesters. By the end of senior year, only about 45% of abuse survivors were still enrolled, compared to 60% of non-abuse survivors. Those with a history of multiple abuse types had the highest dropout rates, being enrolled at a rate of only 35% at the end of senior year (Duncan, 2000). Similarly, in a study that examined the relationship between trauma exposure, post-traumatic stress disorder (PTSD) - one potential mental health outcome of trauma - and drop-out rates, those with trauma exposure and PTSD symptoms dropped out at a rate of 35%, while those with trauma exposure and no PTSD

symptoms dropped out at a rate of 20% after the first year (Boyraz et al., 2015). Syndromal distress after trauma, though, does not seem to be necessary to increase dropout rates, as some past research has found increased dropout rates in the absence of self-reported distress or mental health disorders, including PTSD (Duncan, 2000; Hardaway, Larkby, & Cornelius, 2014). These results were not better accounted for by other factors, such as delinquent behaviors. Therefore, research supports that trauma exposure is associated with increased dropout rates from college, even in the absence of diagnosable mental health sequelae. However, it should be noted that subthreshold symptoms and distress may be present, but not adequately accounted for by the methodology used in prior research.

Given the relationship between trauma exposure prior to attending college and dropout rates, as well as the often reported relationship between GPA and dropout rates, the question of a possible relationship between trauma exposure and GPA arises. In many cases, GPA is used in research as a representation of academic functioning, performance, or achievement. Therefore, the present research focused on academic functioning, the most inclusive of these terms. As GPA is one measure of academic functioning among many, this broadened focus was necessary, particularly as some past research has not found a relationship between GPA and drop-out rates, bringing into question what other variables may be involved, or whether GPA truly represents the core of academic functioning outcomes. A meta-analysis that examined correlates of GPA found that 41 of 50 factors, including demographics, prior academic performance, motivation, personality traits, and context, were significantly related to GPA (Richardson, Abraham, & Bond, 2012). This is further evidence that defining academic functioning by GPA may only lead

to inadequate conclusions. The outcome being considered, therefore, in the present research, is academic functioning (see Appendix A for full definition), broadly defined to include GPA, as well as other measures of academic functioning.

Additionally, this research examined college students' histories of traumatic and non-traumatic stressors as a predictor of academic functioning. Although past research has found traumatic stressors to be particularly problematic with relationship to drop-out rates (Barry et al., 2012; Boyraz et al., 2015; Duncan, 2000; Hardaway, Larkby, & Cornelius, 2014), authors tend to use varying definitions of trauma, requiring a more inclusive definition to fully understand the relationship between trauma/stress and academic functioning. For example, some past research indicates that neglect may be more detrimental than abuse when considering academic outcomes (Hildyard, & Wolfe, 2002). Traumatic stressors can include a variety of events, such as witnessing violence, being in an accident, or experiencing a natural disaster, among other things. See Appendix A for a full working definition of traumatic stressors/trauma.

Furthermore, past research reports relationships between events that could be considered stressful (see Appendix A for definition), but not traumatic, and academic functioning. Socioeconomic status, and a history of living in an impoverished environment, is one such stressful but not traumatic event that has been examined. Indeed, early familial poverty during childhood, compared to familial poverty during adolescence, has been associated with long-term academic outcomes, particularly in those families with the lowest SES (Duncan, Brooks-Gunn, Yeung, & Smith, 1998). This is critical to understanding the effects of stress and trauma, as most research has focused on traumatic stressors without considering the effects of daily, minor stressors, which may

be particularly relevant to college students, or the effects of long-term stressors such as SES, as previously noted.

Although many students with a history of exposure to traumatic and non-traumatic events drop out of college, or show poor academic functioning, not all of these students have this experience. Furthermore, although Martin and Elmer (1992) reported that a history of severe abuse led to poor groupwise outcomes across domains, they also found a range of individual differences, including some individuals who completed higher education and obtained jobs, while having families and strong social ties. Research providing evidence that not all students with a history of stressors have poor outcomes calls into question what the difference is between those students who have poor outcomes and those who do not have poor outcomes. One possibility is resilience. Resilience has been most commonly defined as good outcomes, despite threats to development or adaptability (Masten, 2001). Although common, this definition, while descriptive of the construct, does not describe how best to measure resilience. This issue will be discussed in detail later in this paper. While resilience was once thought to be rare, much research now indicates it is a common outcome following adversity (Bonanno, & Mancini, 2008). Recent research, though, has again called into question how common resilience is following highly stressful life events, suggesting that in some cases it may be the least common outcomes following highly stressful life events (Infurna, & Luthar, 2016). This underscores the importance of continuing to examine resiliency processes to gain a better understanding of resilience. See Appendix A for a full working definition of resilience.

Traumatic/Non-Traumatic Stressors and Academic Performance

Little past research has examined the relationship between stressors and academic performance. However, in the research that has, all cross-sectional studies have found a significant association between traumatic and non-traumatic stress exposure and academic functioning. However, these studies varied greatly in terms of design and operational definitions. In one of the few studies to consider both traumatic and non-traumatic events, Anders, Frazier, & Shallcross (2012) found that individuals who experienced more events reported poorer outcomes, including lower GPA. The number of non-traumatic events and directly experienced events tended to be most strongly correlated with negative outcomes. For example, non-traumatic events and direct events were more correlated with distress (r =. 39 and r = .42, respectively) than were traumatic events and indirect events (r = .23 and r = .26, respectively). A similar pattern was noted for other outcomes, including PTSD, life satisfaction, and overall mental health. Although the correlations for GPA are somewhat smaller and there is less difference between those who have experienced different event types, overall the study provides evidence that considering the type of stressful event, as well as the number of stressful events could be important. Additionally, it provides foundational evidence of the relationship between life stressors and GPA. In a study that considered cumulative trauma exposure, but not cumulative adversity, exposure to high levels of cumulative trauma exposure was associated with poorer academic functioning (Banyard, & Cantor, 2004).

Although both of these studies examined traumatic and non-traumatic stress exposure and academic functioning, supporting the effect of these stressors in the absence of mental health problems, one cross-sectional study focused on PTSD and its

relationship to academic functioning. Specifically, combat-exposed military students were more likely to report PTSD symptoms, which was then associated with lower GPA, decreased extrinsic academic motivation, and lower academic persistence (Barry, Whiteman, & MacDermaid Wadsworth, 2012). A qualitative study found similar results to the cross-sectional studies previously discussed. Fifteen students with self-reported abuse histories noted difficulty concentrating while studying and taking tests. These students also noted that participation in class discussions was difficult due to feelings of fear and shame (Thomas, 1998).

Prospective studies have also examined PTSD symptoms or status and not trauma or stress exposure as the main predictor of academic functioning. These studies are consistent in finding a relationship between PTSD symptoms or status and academic functioning. Specifically, PTSD status at the end of the first year predicted poorer academic outcomes in the second year; alcohol did not mediate this effect (Bachrach, & Read, 2012). Boyraz, Horne, Owens, and Armstrong (2013) found that increased PTSD symptoms at the end of the first year of college led to increased dropout rates in the second year of college, but GPA mediated this effect for women. Additionally, involvement in on-campus activities and higher levels of perceived academic integration in the first semester was associated with higher first-year GPA, which was related to increased likelihood of returning to college in the second year. Similarly, Boyraz, Granda, Baker, Ridwell, and Waits (2015) found that GPA mediated the relationships between PTSD and drop-out rates, while they also found that effort regulation (the ability to complete academic tasks regardless of distraction or level of interest) mediated this

mediation in both men and women. The model was supported even after controlling for participation in on-campus activities and ACT scores.

Consistent with the research reported thus far, in a study considering women who reported on history of sexual assault, those women with teen victimization entered college with a lower GPA and earned lower grades during their first semester. Although exposure to traumatic and non-traumatic stressors during college is not a focus of this research, it is notable that this study found that women sexually assaulted during the first semester of college had lower GPA's by the end of the semester than those who had not been assaulted. A greater proportion of GPA's fell below 2.5 among women for whom the reported sexual assault was rape (Jordan, Combs, & Smith, 2014).

In one of the only studies to examine non-traumatic stressors, Nikulina, Widom, and Czaja (2011) examined the effects of childhood neglect and poverty on academic achievement outcomes. Childhood neglect, familial poverty, and neighborhood poverty each separately predicted academic achievement, with increased neglect or poverty predicting decreased academic achievement. Similarly, when considering traumatic events, such as childhood physical abuse, sexual abuse, and neglect, Perez and Widom (1994) reported that 20 years after the abuse, survivors of childhood abuse and neglect scored significantly lower than matched controls on measures of Intelligence Quotient (IQ) and reading ability, and their highest grade level completed was lower. There were also differences between the various types of maltreatment, with neglect survivors generally having the worst outcomes, then physical abuse survivors, and finally sexual abuse survivors. However, the use of IQ and reading ability as the academic functioning

outcome in this study is quite different conceptually than many of the other outcome measures used.

Only one study (Rosenthal & Wilson, 2003) did not report that a history of traumatic or non-traumatic stressors was related to poorer academic functioning in college students. This study examined exposure to community violence in high school, and whether this was related to academic performance (GPA) in college. Even when considering psychological distress as a mediator, no relationship was found.

Limitations of the Literature

When considering the research available in this area, a number of limitations are noteworthy. For example, although we sought to use academic functioning as the broad category for potential outcome variables, with the hope that this term would be inclusive, it was often unclear how the academic outcome variable used was being conceptualized. In most cases this was due to a lack of consistency in measures and terminology. Outcomes ranged from performance based measures, including GPA (e.g. Anders et al., 2012; Bachrach, & Read, 2012; Boyraz et al., 2015; Boyraz et al., 2013; Jordan et al., 2014; Rosenthal, & Wilson, 2003), to process based measures, including academic adjustment and motivation (e.g. Banyard, & Cantor, 2004; Barry et al., 2012). Some studies considered reading ability to be a measure of academic functioning (e.g. Nikulina et al., 2011; Perez, & Widom, 1994). Furthermore, for some of these outcome variables, such as GPA, authors used different phrases, including academic achievement and academic performance as the terminology for the outcome variable. Although in some ways, this is potentially useful in representing the variety of academic functioning domains, research has not yet examined their conceptual or operational overlap.

The use of such a wide range of outcome measures and terminology is problematic for a number of reasons. Primary among these is that it can lead to erroneous conclusions regarding outcomes across studies. For example, an author who uses the phrase academic achievement to describe GPA may not realize there is already a published study considering the same concepts, but using the phrase academic performance. Another reason this is problematic is related to conceptual clarity and agreement in the field regarding what outcome measures should be used and what types of questions these outcome measures are answering. This is particularly important when considering academic functioning due to the potentially interdisciplinary nature of this research. The literature included in this introduction was primarily found in educational and psychological research journals. A common pattern noted was for educational researchers to define academic functioning broadly, by including academic adjustment, motivation, GPA, or dropout rates (which are not conceptualized as academic functioning in this dissertation), while psychological researchers were more likely to define academic functioning by GPA only.

In addition to the lack of consistency in outcome measures and terminology, the focus on GPA as the sole measure of academic functioning is a limitation in the literature. It can be difficult to draw conclusions regarding relationships between GPA and other variables due to the complicated nature of GPA. A student's GPA is influenced by a variety of factors, including decisions made by the student (e.g., courses being taken), baseline academic achievement (e.g., ACT scores), cognitive functioning (e.g., IQ), and personal factors (e.g., stress levels, SES; Richardson, Abraham, & Bond, 2012). As many of the studies did not control for baseline academic achievement, such as ACT scores,

many of these studies may have potential confounding variables influencing GPA and limiting the conclusions that can be drawn. Furthermore, how GPA was defined varied across studies, with some researchers defining GPA as current semester only (e.g., Jordan et al., 2014), and others defining it as cumulative GPA (e.g., Boyraz et al., 2015; Boyraz et al., 2013). This is problematic as GPA can vary greatly from one semester to another. Researchers also varied in whether they considered GPA categorically (e.g., Jordan et al., 2014) or continuously (e.g., Anders et al., 2012; Barry et al., 2012), and whether GPA was self-reported (e.g., Anders et al., 2012; Jordan et al., 2014) or obtained from transcripts (e.g., Bachrach, & Read, 2012). Self-reported GPA may be inaccurate, and GPA defined categorically does not consider the full range of potential outcomes, potentially limiting the conclusions that can be drawn from these studies.

In addition to GPA having weaknesses as an outcome variable due to the number of factors related to it, GPA also may not fully capture academic functioning conceptually (Richardson et al., 2012). At best, GPA is one representation of academic performance or achievement, which is only one part of academic functioning. Some studies, such as those that included measures of academic adjustment or motivation had a broader definition of academic functioning, but still did not include some potentially important information. Many college students withdraw from courses, repeat courses, receive incompletes in courses, and change majors due to poor grades. Some past research, though not in the context of stress and trauma survivors, has found that cognitive variables, such as perseveration, are related to course withdrawals, repeated courses, and course failures (Robertson, Lewine, & Sommers, 2014). This type of research underscores the importance of academic variables that are not GPA as being

relevant to academic functioning. Although a student may have a high GPA and maintain continued enrollment, if this is due to withdrawing from courses, GPA is not a trustworthy indicator of academic functioning for that student. Although studies consistently reported a relationship between a history of traumatic and non-traumatic stressors and the included academic outcome, it is difficult to determine the reason for this. It could be due to the robust effect of these stressors across outcomes. Another possibility is that this is due to inconsistent operational definitions and the lack of inclusion of potentially important academic functioning variables. In order to evaluate which of these alternatives is true, it will be necessary for future work to include a variety of academic functioning outcome measures.

The majority of studies previously discussed examined an academic outcome variable that was predicted by past trauma. In many cases, this was operationally defined as a categorical yes or no response to a specific type of past trauma. In some cases, this information was obtained via self-report (e.g. Anders, et al., 2012; Bachrach, & Read, 2012; Barry et al., 2012), but at other times was obtained via court records, with those individuals who had a history of a specific type of past traumatic event recruited based on these records (e.g. Perez, & Widom, 1994). Although this way of defining a history of traumatic events is common, and does provide information, there are a number of limitations to this approach. Sampling bias is one limitation, as sampling specifically from courts includes only a specific subset of individuals with a past traumatic event. Additionally, these individuals are participating in court proceedings, which can create stress and add to the existing burden. Therefore, these individuals may have increased stress related to those not involved in a court proceeding.

Another limitation is the basic definition of what constitutes past trauma. The studies discussed primarily defined trauma based on the definition in the Diagnostic and Statistical Manual of Mental Disorders (DSM). Although this is useful as a way to provide consistency in research and definitions, it is problematic due to the recent updates to the definition of trauma in the newest version of the DSM. The definition was broadened to include witnessing or learning about an event as a potentially traumatic event, in contrast to previous definitions, which focused on directly experiencing a trauma. Furthermore, in the newest version of the DSM, a stipulation that the event leads to feelings of fear, helplessness, or horror has been removed (American Psychiatric Association, 2013). As this new version of the DSM was only recently released, the authors were using best practices at the time. However, as the definition/operationalization of trauma has changed, research has had to change with it, creating two literatures that are only partially compatible. Given the lack of available literature on the new definition of trauma, it is possible that the previous definition is more accurate and trauma is now being defined too broadly. The inconsistency in the definition, though, and lack of available literature, are subjects that require further attention in future research.

The issue of using a DSM definition becomes particularly relevant for studies that considered PTSD diagnostic status instead of event exposure. The first concern is related to changing DSM definitions and disorder categories. In addition, someone who was traumatized but did not develop PTSD may still have poor outcomes, as some of the other studies included seem to indicate. However, these individuals are excluded from study when PTSD diagnostic status is considered. PTSD is only one potential outcome of

traumatic events, and does not consider non-traumatic events at all. Therefore, using PTSD status to operationally define trauma exposure is a major limitation.

The variation of study designs is also a potential limitation. Although the cross-sectional and prospective studies reported similar findings, some of the prospective designs found stronger relationships for certain time points compared to others, while no relationship was found for some time points. This highlights the importance of follow-up, particularly long-term follow-up. Additionally, although some researchers indicate first-year students are the most critical to consider when examining the influence of a history of stressors (Boyraz et al., 2015; Boyraz et al., 2013), other research seems to provide evidence of an effect of stressors beyond the first year of college. Cross-sectional studies or prospective designs through the first year provide valuable information. However, limiting the time frame under consideration may not allow for a full understanding. This could be particularly true when considering college students due to the variability in the courses taken each semester. Additionally, the first year of college is a potentially unique time, as the stress of adjusting to a new environment is still prominent. Therefore, research that includes only the first year of college may be confounded by adjustment-related stress. Finally, a student's history of traumatic and non-traumatic stressors could change over the course of college as new experiences occur.

Although most of the available literature found a relationship between a history of exposure to traumatic and non-traumatic stressors and poorer academic functioning outcomes, very few of these studies included a potential mediator or moderator of this relationship. Indeed, in some of the literature, the academic functioning outcome variable was a mediator in a larger model (e.g., GPA predicting drop-out rates), and the

relationship of interest in this research would not have been discussed in the studies if not for the proposed mediation model. In those studies that included GPA as a mediator in a larger model, a relationship was always found between trauma/stress exposure and GPA, perhaps speaking to the strength of this relationship, as the relationship was reported despite this not being a primary outcome of interest of the studies (Boyraz et al., 2015; Boyraz et al., 2013).

Two studies included a mediator of the relationship between trauma/stress exposure and the academic functioning outcome. In both cases, the academic outcome variable was GPA and the authors examined a history of traumatic stressors. One of these studies sought to determine if problem alcohol use was a mediator (Bachrach, & Read, 2012). The authors found that problem alcohol use did not mediate this relationship. However, this study classified participants based on PTSD status, not necessarily a history of traumatic events. This limits the generalizability of the reported lack of mediation. However, if this were replicated, it could be an indicator of the strength of the relationship between a history of exposure to traumatic events and academic functioning in college students.

The other mediator considered was effort-regulation. Boyraz et al. (2015) included this variable as a potential mediator of the relationship between traumatic events and GPA in a larger model. They did this due to previous research showing that effort regulation is the most predictive component of the Self-Regulated Learning model for a variety of other outcomes. The model was supported, with effort regulation mediating the effect of a trauma history on current GPA in college students (those who started college with increased PTSD had lower effort regulation, which in turn led to lower GPA's). The

model remained significant after controlling for a variety of other potentially important factors, including participation in on-campus activities and ACT scores. Although this study is also limited by defining trauma exposure in terms of PTSD status, if further research supports these findings, it could provide insight into how a history of trauma exposure can affect academic functioning outcomes in college students, particularly as effort regulation is part of a broader model that could guide conceptual thinking.

In terms of moderators, no studies formally examined a moderator of the relationship between trauma/stress history and academic functioning. One study reported gender differences, a model only being found to be significant for women and not men (Boyraz et al., 2013). This study also reported that, for females, involvement in on-campus activities and levels of perceived academic integration were associated with higher GPA, which could be an indicator that these variables may be valuable to consider as potential mediators or moderators in future research.

There are a number of potentially important mediators/moderators, beyond those included in past research. As will be discussed in the next section, the process of resilience may be crucial to understanding why some people experience negative outcomes and others do not. Given past support for effort regulation as a mediator, cognitive flexibility and self-monitoring could be potential mechanisms to examine, as students with high effort regulation skills show persistent commitment to goals regardless of outside factors and are capable of regulating the use of learning strategies. Flexibility in thinking and coping in particular has been noted to be a resilience factor. Social support and opportunities for growth and mentorship are also avenues of resilience. Given the previous support for academic integration and participation in on-campus

activities affecting the relationship between stressors and outcomes, these should also be examined, particularly given the ability to intervene in these areas. Finally, the occurrence of traumatic and non-traumatic stressors during college is another possible mediator. Although not considered in past research, unmeasured traumatic and non-traumatic stressors during college could be contributing to academic outcomes.

The Potential Role of Resilience

Definition of Resilience

Although the literature provides evidence that college students who have a history of traumatic and/or non-traumatic stressors experience poorer academic functioning outcomes than those without these past stressors, this is not true for all students. In some studies, up to half of the traumatized sample did not experience poor academic functioning outcomes (Boyraz et al., 2015). Although mediators and moderators previously mentioned in this paper may play a role, resilience is another important factor that could influence outcomes. The most widely accepted definition of resilience is good outcomes despite serious threat to adaptation and development (Masten, 2001). Based on this definition, in order for resilience to exist, risk must exist first. Resilience can be considered as an outcome after exposure to stress or trauma, but in this research it is included as a potential process, via resiliency resources, through which someone who has experienced stress or trauma may or may not have poor functional outcomes, such as academic functioning. It should also be noted that resilience is a multi-dimensional construct. Therefore, an individual could be resilient with respect to one outcome, but not another. For example, in this paper, although the broad term of resilience is being used, the most specific category of resilience being considered could be termed “academic

resilience." Other suggested domains of resilience include emotional and behavioral (Luther, Cicchetti, & Becker, 2000). Determining the role of resilience in guiding other outcomes is important, as there are many sources of resilience, which will be discussed throughout this section. Although when first researched, resilience was thought to be rare, it is now conceptualized by many as a common process following a potentially traumatic event (Bonanno, & Mancini, 2008). It is worth noting, though, that emerging work attempting to replicate the results pointing to resilience as the most common outcome following highly stressful life events was unable to do so in some cases (Infurna, & Luthar, 2016). The authors report that by varying the model specifications used in examining trajectories following adversity, resilience can range from the most common outcome to the least common outcome following a highly stressful life event. The authors point to the importance of taking this into consideration when discussing rates of resilience, as these rates may be unstable. This model sensitivity also underscores the difficulties in resilience research broadly. One of these difficulties is that per the definition of resilience, it is not possible to study resilience and name it such until a risk has occurred. Additionally, many researchers study resilience as a single self-report measure, instead of focusing on factors of the resiliency process. The present dissertation sought to merge these two approaches in order to meet the field where it currently is, while also extending it as discussed in more detail later.

There are two major approaches to studying resilience. One of these is variable-focused, which answers questions regarding relationships between degree of risk, outcomes, and potential qualities of the individual/environment that may compensate for or protect from the negative consequences of the risk. This way of thinking results in

concepts like the compensatory effect, or the idea that adding enough positive assets could offset risk. Additional ways of increasing resilience in this model would be to alter the asset/risk ratio, or reduce risks. Research using this model has found that parenting qualities, intellectual functioning, and SES are the most influential for outcomes, including academic achievement, and negative life experiences have much less power in affecting outcomes than these variables. The other approach is the person-focused approach, which compares individuals from different levels of risk to differentiate resilient individuals from non-resilient individuals. These types of studies reveal that a lack of resilience occurs when adversity is high and protective resources are low (Masten, 2001).

There are also a number of theoretical models of resilience. Specifically, these are a compensatory model, a protective model, a challenge model, and an inoculation model (Fergus, & Zimmerman, 2005). In the compensatory model of resilience, a promotive factor operates in the opposite direction of a risk factor. In the protective model, on the other hand, resources moderate or reduce the effects of risk on producing negative outcomes. The challenge model posits that the association between a risk factor and outcome is curvilinear, suggesting that both low and high levels of risk are associated with poor outcomes. Moderate levels of risk, though, encourage individuals to learn how to overcome it and to practice using resources. The final model – inoculation – is similar to the challenge model, but is extended by considering a longitudinal focus. Essentially, this model incorporates the first two models mentioned, as compensatory and protective factors may be included as part of the model at a given time point in an individual's life (Fergus, & Zimmerman, 2005).

Research on Resilience

Much past literature on resilience has sought to identify factors that may lead to resilience in individuals. A wide variety of factors have been related to resilience. Some of these, such as parenting qualities, intellectual functioning, and SES are the most commonly studied mechanisms of resilience, as previously mentioned (Bonnano, & Mancini, 2008; Galea et al., 2008; Masten, 2001; Werner, 1995). Other factors include gender and ethnicity, with females and those of Latino ethnicity being less resilient. For both groups, this could be due to ongoing stress and SES disadvantage. This could also be due to reporting differences and the difference in expression of mental health symptoms among those of Latino ethnicity could potentially contribute to this finding (Galea, et al., 2008). Additionally, flexible coping and external supports seem to be important for resilience (Bonnano, & Mancini, 2008; Garmezy, 1991).

Long-term studies of resilience tend to point to its malleability over time. Studies that have considered long-term outcomes also note that emerging adulthood, the developmental period encompassing many college students, is a unique time, with possibilities for changing the life course. Additionally, there is increased independence, advanced cognitive development, opportunities for growth in planning capacity and adult support. Opportunities themselves, therefore, may create the necessary conditions for positive change in emerging adults (Masten, Obradović, & Burt, 2006). Given that beginning college is an opportunity, efforts to make this a successful adjustment experience with appropriate support and guidance could enable the resilience process. The concept that resilience could be modified during emerging adulthood is also consistent with the inoculation model of resilience, as it posits change over time.

Furthermore, although the foundation for resilience begins in childhood and adolescence, individuals who are labeled resilient in childhood or adolescence may not be resilient in emerging adulthood. The opposite of this can also be true (Luecken, & Gress, 2010; Masten et al., 2004). Those studies that have examined long-term outcomes find that core resources from childhood, as well as the unique resources of emerging adulthood were related to the successful transition to adulthood. This was true for academic attainment, as well as other outcomes (Masten et al., 2004).

The studies that have reported these results generally used a variable-focused approach, though some have used a mixed variable-focused and person-focused approach. Little research has been conducted that has examined the role of resilience in college students who may or may not be experiencing academic difficulties. Although only one study (Masten et al., 2004) discussed academic attainment as an outcome, it does provide evidence of the potential importance of resilience.

Life Events and Resilience. Although it is possible that only resilient trauma survivors make it to college, other possibilities should also be considered. Conceptualizing resilience as an ongoing process instead of a static trait is necessary in considering these other possibilities. The primary alternative is that although some level of resiliency has occurred to enable individuals with a history of traumatic and stressful life events to make it to college, neither resiliency nor life events are static. Therefore, where someone falls on the continua of resilience and life events could fluctuate after entering college.

When considering life events and resilience, it has been found that past adversity, whether traumatic or not, was a significant predictor of current PTSD symptoms, beyond

the proximal reported event (Lloyd, & Turner, 2003). Although this study focused on PTSD as an outcome, it provides support for the importance of adversity in decreasing resilience. This fits with a person-focused approach to resilience, wherein how high the risk is for an individual becomes important. It should also be noted that this study has potential limitations due to the way in which adversity was measured, as multiple occurrences of the same event were not included in the final count.

One study (Seery, Holman, & Silver, 2010) found that a curvilinear relationship may exist between adversity and outcomes. These authors reported that those with some cumulative lifetime adversity reported lower global distress, lower functional impairment, lower PTSD symptoms, and higher life satisfaction than those with no cumulative adversity. However, those who had experienced a large amount of cumulative adversity showed poorer outcomes than those with some cumulative adversity, as well as those with no cumulative adversity. Therefore, although the relationship was curvilinear, it was not symmetrical, with those who had high levels of cumulative adversity having the worst outcomes (Seery, Holman, & Silver, 2010). This study again points to adversity as having a role in resilience. These authors draw attention to a relationship that is potentially more complex than a simple linear model wherein increased adversity leads to less resilience, which leads to worse outcomes. Although this study did not examine academic functioning specifically, it did examine a wide variety of outcomes. Therefore, it is possible that this relationship may also exist for academic functioning outcomes.

Summary

While there is evidence that academic performance and stress/trauma are related, there is a clear need for greater clarity and focus as we move forward. Terms must be

defined carefully, and academic performance must be measured appropriately. Stress across the continuum from non-traumatic to traumatic needs to be considered. Additionally, resiliency resources need to be taken into account, as this may be one way in which individuals have good outcomes despite a history of stressful and traumatic life events.

Based on the present literature, a relationship seems to exist between a history of traumatic and non-traumatic stressors and poorer academic functioning outcomes in college students. Some (e.g. LeBlanc, Brabant, & Forsyth, 1996) have argued that only resilient trauma survivors make it to college. If this were true, it could indicate that other factors interact with resilience to determine which individuals make it through college. Perhaps due to this or due to malleability of resilience over time, approximately half of those with a history of traumatic and non-traumatic stressors show poor academic functioning outcomes, despite the potential resilience needed to make it to college. Of those with poor outcomes, only about half seem to have a diagnosable mental health condition, such as PTSD (Boyraz et al., 2015). However, some evidence for resilience is shown, as approximately half of those with a history of stressors do succeed in college. This is still somewhat lower, though, than the general population, as approximately 60% of the general population completes their education at the institution at which they began college (National Center for Education Statistics, 2015). Although past research of potential mediators or moderators has been limited, results point to coping, particularly coping flexibility as being potentially important. Additionally, social support, a resilience resource, may be a key factor, as involvement in on-campus activities is associated with higher GPA.

Research on resilience, particularly that using person-focused approaches, associates high levels of adverse life events with lower levels of resilience, despite the number of potentially "good" variables from the variable-centered approach that are present to counteract this adversity. This is consistent with the inoculation theory of resilience, as little to no adversity may not provide the necessary opportunity to practice using resources and skills to overcome the adversity. A high amount of adversity, though, overwhelms these resources. A moderate amount of adversity provides opportunities to practice resilience.

Based on this review of the literature, it is proposed that research in this area begin with clarifying basic relationships, as this is necessary before testing a full model. The relationships to be examined are those between non-traumatic stressors and academic functioning outcomes and traumatic stressors and academic functioning outcomes. In both cases, resilience needs to be considered, as the resilience process may be affecting these relationships. The present research sought to characterize resilience and traumatic and non-traumatic stressors in college students from a low socioeconomic background, thereby controlling for economic status.

Study Purpose and Hypotheses

The purpose of this study was to better understand the role of stress (e.g., trauma history) and resilience in academic performance. Therefore, the first aim (Aim 1) of the study was to provide descriptive information (i.e. measures of central tendency and variability) on the variables of interest in a sample of college students from a low SES background. These variables included history of exposure to traumatic and non-traumatic stressors, anxiety, depression, and PTSD, as well as resilience (defined here as internal

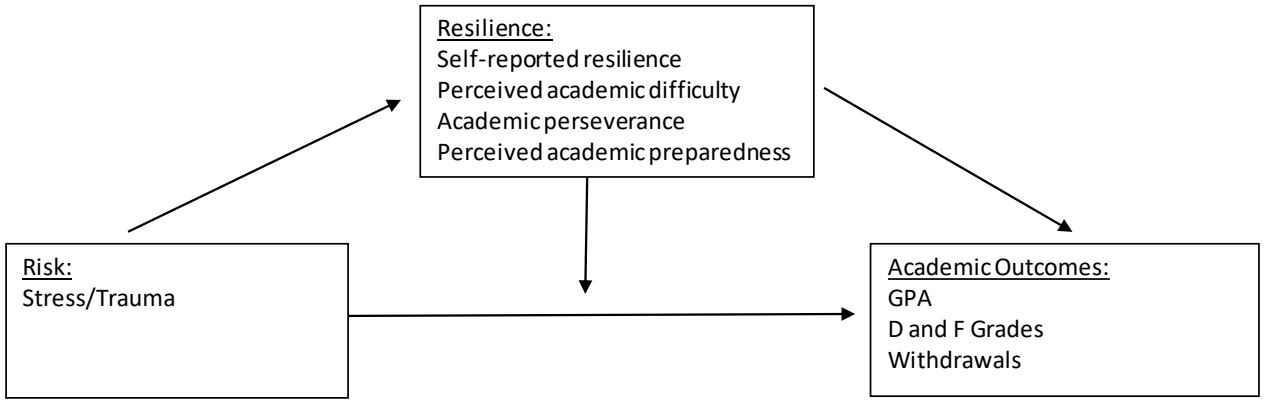
and external resources that can contribute to resilience processes; brief resilience scale, expected academic difficulty, perceived academic preparedness, academic perseverance), GPA, number of D and F grades (DF) and Withdrawals (W). It was hypothesized based on previous research that rates of traumatic stressor exposure would be around 75%, while rates of exposure to both traumatic and non-traumatic stressors would be near 100%.

The second aim of the study (Aim 2) was to examine the basic relationships between the variables of interest, including history of exposure to traumatic and non-traumatic stressors, anxiety, depression, and PTSD, as well as resilience (brief resilience scale, expected academic difficulty, perceived academic preparedness, academic perseverance), GPA, and DF and W (see Appendix B for groupings of variables, e.g., predictors versus outcomes; see Figure 1 for depiction of model). Negative correlations were expected between the predictor and the variables through which there may be an indirect effect separately, for example between history of stress/trauma and perceived academic preparedness. The exception to this was expected academic difficulty, for which a positive relationship with stress/trauma history was expected. Additionally, a positive correlation was expected between the variables through which there may be an indirect effect and GPA, with the exception of expected academic difficulty. A positive relationship was also expected between the predictor and DF and W. A negative correlation was expected between the variables through which there may be an indirect effect and DF and W, with the exception of expected academic difficulty. A negative correlation was expected between the predictor and GPA. Therefore, it was hypothesized that stressful and traumatic events would be associated with poorer academic

performance, though the magnitude of this association was not hypothesized, due to the current state of the literature. Additionally, it was expected that resiliency factors would be associated with better academic performance. Again, due to the current state of the literature, the magnitude of this association was not hypothesized.

The third aim of this research (Aim 3) was to determine predictors of GPA, DF, and W. This aim was, therefore, divided into three sub-aims. In the first of these (Aim 3a), it was hypothesized that GPA would be predicted from potential control variables (High School GPA, credit hours enrolled, gender, ethnicity, anxiety, depression, PTSD), predictor variables (stress/trauma), and variables through which there may be an indirect effect (self-reported resilience, expected academic difficulty, perceived academic preparedness, academic perseverance). Aims 3b and 3c use the same process, but sought to predict DF and W, respectively. It was expected that in all three cases, the addition of the predictor variables would significantly improve the ability to predict the outcomes, beyond that of the control variables to do so. Furthermore, once the variables through which there may be an indirect effect were added in the third step, these variables would significantly predict the outcome variables, while the predictive value of the predictor variables would decrease. In all cases, self-reported resilience would be the variable through which there would be an indirect effect on the relationship between stress/trauma and the given academic outcome.

Figure 1. Model



METHODS

Population and Sample Selection

A sample of 57 Cardinal Covenant students from the class of Fall 2016 were recruited for this study. Of the 57, three were under the age of 18 and therefore not eligible per our IRB approved protocol, resulting in a final sample of 54 students. The Cardinal Covenant program provides complete financial assistance (tuition, room, board, and books) to students who apply for the program and are at 150% of the federal poverty level. The application for the program requires applying to the university, submitting an additional essay, meeting minimal academic requirements (20 ACT composite score and 2.5 High School GPA), being a Kentucky resident, completing a FAFSA, having a complete financial aid file, and meeting certain grant requirements (Pell Grant, CAP Grant, and Kentucky Educational Excellence Scholarship). This population is ideal for beginning this line of research, as every participant will have some risk in his or her background (low SES), while still providing a potential range of other risk factors, as well as resiliency factors. Recruitment occurred in collaboration with Cardinal Covenant program staff who have agreed to grant researchers access to program specific meetings. Baseline data was collected at the Cardinal Covenant program orientation held at the beginning of the academic year. Information from the academic record of those students who completed packets, including transcript data and information from the Beginning

College Survey of Student Engagement, was collected later (this process is described in more detail below).

Measures

Demographic Form. The demographics form covers basic personal and contact information including name, sex/gender, birthdate, age, phone number, and email address. Additional collected data included the student's academic, family and social information. The academic section inquired about student course load, course enrolled, and titles of courses. The social section inquired about employment and housing. The family section requested information about the source and amount of family annual gross income, if known by the student.

Predictors.

Life Stressor Checklist-Revised (LSC-R). The LSC-R was designed to screen for traumatic events, as well as events that may be considered stressful but not traumatic (Wolfe, et al., 1996). The questionnaire assesses 30 events, ranging from a serious accident to serious financial problems to physical abuse. For each event an individual endorses, two to five follow-up questions are asked, depending on the event. These follow-up questions include "Did you believe that you/someone else could be killed or seriously harmed," "At the time, did you experience intense fear, helplessness, or horror," and "how much has it affected your life in the past year." Two other questions assess for age at the beginning and end of the event. These questions were removed, as this information is not needed for the current study and could have increased the distress of participants and/or encouraged participants to provide information for which a formal report must be made. These questions were replaced with a question asking the individual

how many times they had experienced the event. Due to these follow-up questions, not only does the measure assess for an event occurring, but also assesses for distress related to the event.

The LSC-R can be scored a variety of ways. The first of these is to simply give one point for each endorsed event and count up the total, yielding scores ranging from 0-30. The second option is to assign weights to the endorsed life stressors. This score then ranges from 0-150 and reflects an individual's subjective rating of a how the stressor affected the person's life in the past year. Each positively endorsed life event is assigned points ranging from 1-5 according to how they answer the question regarding distress over the past year. For the present study, both scoring methods will be conducted. In the present sample, the internal consistency of the measure was fair at .76.

This measure can be scored to assess for traumatic events only. Traditionally, scoring this measure this way calls for the event to be endorsed, as well as follow-up questions regarding feeling fear, hopelessness, and horror at the time of the event and perceived threat of harm/death to self or others. This scoring, though, is based on DSM-IV criteria, not DSM-5. Therefore, for the present dissertation, events will be defined as traumatic if they meet criteria of actual threat to life (e.g., experiencing a serious accident) or if the individual endorsed perceived threat of harm/death to self or others. The requirement that the individual endorse fear, hopelessness, or horror at the time of the event was dropped, as this is not consistent with DSM-5.

Test-retest reliability can range across items. For example, a Kappa of .52 has been reported for physical abuse, while a Kappa of .97 has been reported for miscarriage (McHugo et al., 2005). Additionally, concurrent validity has been supported with other

measures of stress and trauma, such as the Impact of Event Scale-Revised and the Symptom Checklist 90-Revised (Ungerer et al., 2010).

It should be noted that by using this measure this study will not be examining stressors occurring during the first semester of college. While both traumatic and non-traumatic stressors are common during this time, the focus of this study is on how prior exposure to these events affects outcomes from the first semester of college. Future work, as part of the larger data collection and ongoing longitudinal study, may examine the effects of these events that occur after college has begun.

Potential Control Variables. A number of potential control variables will be considered in the statistical analyses (note that final inclusion of control variables is dependent upon testing for multicollinearity). The first set of these include information obtained from the demographic form, such as high school GPA, enrolled credit hours, gender and ethnicity. High school GPA is being included to control for baseline academic functioning, and strengthen the conclusions that can be drawn regarding first semester GPA. Number of enrolled credit hours is being included as an increased number of credit hours could influence a student's performance across the course of the semester. Gender and ethnicity are being included as previous research shows that these variables can influence both traumatic experiences (Hatch, & Dohenrenwend, 2007) and academic outcomes (Boyraz et al., 2013). Anxiety, depression, and PTSD are also being included as control variables. Past research is mixed on the possible contribution of distress to academic outcomes (Boyraz et al., 2015; Duncan, 2000; Hardaway, Larkby, & Cornelius, 2014). Therefore, accounting for the possible effects of these variables will enable clearer conclusions to be drawn regarding the effects of stress and trauma.

***Information from demographic form*.** A number of variables from the demographic form will be included as control variables in analyses. These include high school GPA, enrolled credit hours, gender, and ethnicity.

Beck Anxiety Inventory (BAI). The Beck Anxiety Inventory (BAI; Beck, 1990) is one of the most commonly used measures of anxiety. The 21-item self-report instrument was designed to assess the severity of anxiety symptoms and discriminate anxiety from depression in adolescents and adults. The age range for the measure is 17 to 80 years. Each of the items on the BAI is a simple description of a symptom of anxiety measured on a 4-point Likert scale (0=none to 3=frequently; Beck, 1990). Total scores are calculated by adding all 21-items, ranging from 0 to 63. The internal consistency of the BAI was shown to be adequate in a meta-analytic study, ranging from .81 to .95 in nonclinical samples. Internal consistency in the present sample was similar to those previously reported at .96. The original validation study for the measure shows two factors: Somatic and Affective symptoms. However, Factor analytic studies show a range between one and six factors underlying the 21 items measure. The consensus of the literature supports two first-order dimensions, Somatic and Subjective, and one second-order dimension of Anxiety.

Beck Depression Inventory-II (BDI-II). BDI-II, is a widely used 21-item self-report instrument designed to measure the severity of depressive symptoms over the past two weeks. The age range for the measure is 17 to 80 years. The items correspond to the diagnostic criteria for depressive disorders in the DSM-IV, rated on a 4-point Likert scale (0=none to 3=frequently). Total scores are calculated by adding all 21-items, ranging from 0 to 63. The internal consistency of the BDI was shown to be adequate in a meta-

analytic study, ranging from .81 to .95 in nonclinical samples. Internal consistency in the current sample was similar, at .91. Both the BDI and BDI-II validation studies in college students found two dimensions. The original study found the Somatic-Affective and Cognitive dimensions, while the BDI-II found Cognitive-Affective and Somatic dimensions.

Primary Care PTSD Screen (PC-PTSD). The PC-PTSD is a commonly used screener for PTSD (Prins et al., 2003). This brief, 4-item screener addresses that four aspects of PTSD that do not seem to be confounded with general psychological distress: re-experiencing, numbing, avoidance, and hyperarousal. Individuals respond "yes" or "no" to each of the items. A total score is then calculated. Individuals can receive a score from 0-4 on the measure. Past research has shown that the optimal cutoff score for potential clinical diagnosis of PTSD is 3. Using this cutoff score, past research found that the PC-PTSD outperformed a well-established measure of PTSD, the PTSD-Checklist (PCL) in terms of overall quality, sensitivity (.78 compared to .46) and specificity (.87 compared to .79). Additionally, compared to the Clinician-Administered PTSD scale (CAPS), which is administered in an interview format, the PC-PTSD correctly identified 78% of cases and missed 22% of cases, while the CAPS correctly identified 61% of cases and missed 39% of cases (Prins et al., 2003). Internal consistency for the present sample could not be conducted for this measure due to missing data.

Variables through which there may be an indirect effect. A number of measures of resilience and resiliency factors are examined. These are being included as variables through which there may be an indirect effect for a number of reasons. The first of these is the conceptual importance of resilience and the need to consider reasons why

not all those who experience stress and trauma have negative outcomes. Resilience, which is defined as good outcomes despite risk, could account for this process (Masten, 2001). Past research, supports this possibility, though this possibility has never been examined directly in academic outcomes (Lloyd, & Turner, 2003; Seery, Holman, & Silver, 2010). A self-report measure of resilience is included, as well as two potential resiliency factors, as this will allow for an examination of the relationship between self-reported resilience and resiliency factors, as well as provide multiple sources of information regarding resilience.

Brief Resilience Scale. The Brief Resilience Scale measures an individual's self-reported ability to bounce back from stressful events (Smith et al., 2008). The Brief Resilience Scale is a unidimensional measure with six items, which are summed for a single score. Participants are asked to rate on a scale of 1 (strongly disagree) to 5 (strongly agree) how much they agree with each of the 6 statements. In student samples, average scores have been found to be between 3.53 and 3.57. Test-retest reliability has been reported to be .69. The Brief Resilience Score has been reported to be positively correlated with other resilience measures, optimism, social support and purpose in life. It has been reported to be negatively correlated with measures of pessimism, denial, and self-blame (Smith et al., 2008). Additionally, a methodological review of measures of resilience that reviewed 19 resilience measures reported the Brief Resilience Scale was found to be one of the best measures psychometrically in terms of reproducibility, interpretability, and internal consistency (Windle, Bennett, & Noyes, 2011). Internal consistency in the present sample was fair at .75.

Expected Academic Difficulty, Perceived Academic Preparedness, Academic Perseverance subscales from the Beginning College Survey of Student Engagement (Expected Academic Difficulty-BCSSE, Perceived Academic Preparedness-BCSSE, Academic Perseverance-BCSSE). The BCSSE is administered to incoming students prior to the start of fall classes. In its entirety, the measure examines first year students' high school academic and co-curricular activities, as well as their expectations for participating in educationally purposeful activities during college. The BCSSE has 42 items and nine subscales, three of which are used in the current study: Expected Academic Difficulty, Perceived Academic Preparedness, and Academic Perseverance. The Expected Academic Difficulty subscale has four items, with response options ranging from 1 to 6. Each scale is expressed as an 11-point scale by first recoding each item to a range of 0 to 10 points and then taking the average score among the group of items. The Perceived Academic Preparedness subscale has 7 items, with response options ranging from 1 to 6. The Academic Perseverance subscale has 6 items, with response options ranging from 1 to 6. Each scale is expressed as an 11-point scale by first recoding each item to a range of 0 to 10 points and then taking the average score among the group of items. In the present sample, internal consistency for the scales was: Academic Perseverance .73; Perceived Academic Difficulty .57; Perceived Academic Perseverance .78.

Academic Outcome Variables

Grade Point Average (GPA). The (GPA) is a calculated average of letter grades earned in school following a 0 to 4.0 scale. GPA is calculated at the end of each semester as well as a cumulative GPA. GPA will be collected at the end of the first semester of the

first academic year and serve as one reflection of academic performance at this time point in the student's academic career. This information will be collected from the student's official transcript. Information on current coursework will be collected to give context, at least descriptively, to the reported GPA's.

Number of D and F grades earned. The number of failing grades (D and F grades) earned by each student were counted at the end of the first semester. The information was collected from the student's official transcript.

Number of course withdrawals (W). The number of course withdrawals was counted for each student at the end of the first semester. This information was collected from the student's official transcript.

Data Collection

Researchers attended the Cardinal Covenant program orientation at the beginning of the academic year. Baseline questionnaires were administered as part of the Cardinal Covenant program. Prior to receiving the packet, participants received information about the purpose of data collection, potential for risks and benefits for participation, confidentiality, procedures for collection of completed packets, and guidelines for discontinuing participation. Packets including an informed consent document and baseline self-report measures were distributed. Students were given as long as they needed to complete the packets and returned them to the researchers when they were finished. These packets, along with pre-admission essays (not being discussed in this dissertation), represent one type of data collected – program required forms and information. The other type of data collected were non-program documents, including transcripts and BCSSE data. These data were collected following the end of the first

semester. Students were sent a letter at this time reminding them of the collection of these data and indicating they could contact researchers to withdraw consent. No participants withdrew consent. IRB approval was obtained to use both classes of data. The details of de-identification and security are available in the IRB approved protocol. Essentially, other than the Primary Investigator of the overarching study from which this dissertation is being conducted, no one had access to the identity of students that could link them to the data.

Data Analysis Plan

Analysis Decisions. Data preparation and analyses were conducted using SPSS v22.0 (SPSS IBM, Armonk, NY, 2013). Data was examined visually through plots and tables to determine if there was any identifiable pattern to missing data. When examining responses on the LSC-R, missing data was identified most commonly for variables asking about the individual's experiences with their own children. This could be due to the sample being relatively young and not having children of their own; therefore, participants may have thought these questions did not apply to them. Given the large number of participants who did not respond to these questions on the measure, total LSC-R scores were still calculated for these individuals, with missing data being assumed to be zero (event not experienced). When calculating the weighted score for the LSC-R, which requires that respondents answer a follow-up question, there were more missing data. Six participants who had indicated they experienced an event did not answer the required follow-up question for at least one endorsed event. Given that the follow-up question asks about perceived effect of the event on the individual's life, these participants were removed from analyses for this variable, resulting in a smaller sample

size for these analyses. When examining the PTSD screener, it was noted that only 29 participants had a total score for the measure. This appeared to be due to many of the participants misunderstanding the directions and not completing the measure if they did not believe they had experienced an event that was "frightening, horrible, or upsetting," as described in the instructions for the measure. Many participants wrote in a zero or a no next to the instructions, providing support for this theory. Due to the small sample size for this variable, only descriptive information will be provided. PTSD, therefore, will not be included in analyses for aim two or three. No other systematic bias was identified; therefore, all participants and variables were retained. Given non-normally distributed data for multiple variables, median and interquartile range are provided for sample demographic information.

Aim One. As many variables included in the study did not have normal distributions, median and interquartile range are provided as the measure of central tendency when appropriate for the variable. Ranges are also provided. For other variables, percent of sample is provided. Visual examination of boxplots revealed two possible outliers for one variable (BDI). However, as a normal distribution is not being assumed, and these data points are a potentially valid representation of a unique sample, these data points are included in analyses. Given the limited range of fall course withdrawals (0-2), this will be collapsed into a dichotomous variable – did/did not withdraw from a course.

Given that some variables are not normally distributed while others are normally distributed, non-parametric tests will be used for other aims. Transforming data requires extra caution during interpretation, making non-parametric tests a better alternative.

Although non-parametric tests can have decreased power compared to parametric tests, given the sample size of the current study, it is probable that this will not greatly influence results. Additionally, although bootstrapping techniques were considered due to non-normal distributions and the small sample size, they are not being used due to the unique nature of this sample and need for caution when considering generalizability to a larger population.

Aim Two. Given the need to use non-parametric tests, Spearman's rank correlations are provided for all variables with the exception of correlations with gender, ethnicity and fall course withdrawals. Point-biserial correlations are provided for these variables. As all assumptions are not met for this analysis (e.g., distribution of continuous variable on each category of the nominal variable), these analyses will be interpreted with caution. For ethnicity, which was not an originally dichotomous variable, categories were collapsed to create a dichotomous variable (white, non-white). This was done due to the small sample size in some of the ethnicity categories. No multicollinearity was identified for any variables, based on examination of variance inflation factor.

Aim Three. Two approaches were considered for aim three, the testing of the indirect effect of resilience on the relationship between traumatic and non-traumatic stressors and academic functioning outcomes. The first was the MacArthur approach. This approach describes the mediator (or indirect effect variable, in the case of this paper) as being used to design and implement a treatment plan, for which the outcome would change based on the mediator variable. In other words, the change in the chain of action would determine treatment. In this approach, the mediator must precede the predictor and the mediator and predictor must be independent (Kraemer, Kiernan, Essex, & Kupfer,

2008). Because of these two factors in particular, this approach was not appropriate for answering the research questions of this paper.

The traditional test of indirect effects put forth by Baron and Kenny (1986) was used, as it requires fewer assumptions be met regarding temporality and does not require consideration of a treatment plan. This approach requires multiple steps to determine if an indirect effect is present. Step one is to determine that the predictor variable(s) predict the outcome. Step two is to determine that that the predictor variable predicts the variable through which there may be an indirect effect. Step three requires that the variable with a through which there may be an indirect effect predicts the outcome in the presence of the predictor variable(s). The final step is to determine that when the variable through which there may be an indirect effect is in the model, the effect of the predictor on the outcome is reduced. In order to enact this approach, regressions are used. Examination of beta weights and change in predictive value of the predictor variables is then used to determine the possible presence of indirect effects. Pending the results of correlations, these steps were completed for each outcome variable.

Sample Size and Statistical Power. An *A priori* statistical power analysis was conducted for calculating the estimations for the sample size of the entire incoming Cardinal Covenant class using G-Power software 3.0.10. With an alpha = .05, sample size = 70, and medium effect size = .15 (Cohen, 1988), the projected achieved power was .89 for the model including one predictor variable when considering change from 0. Final total sample size was 54 students. A post-hoc power analyses using this sample size, as opposed to 70, resulted in an achieved power of .79.

RESULTS

Demographic Characteristics

The majority of the sample was 18 years of age (96%, *n* = 52), female (61.1%, *n* = 33), and White (57.4%, *n* = 31). Self-reported median high school GPA was 3.66 and self-reported median ACT score was 25.89. Most students reported their primary source of income to be themselves (64.8%, *n* = 35) and students were primarily employed on campus (79.6%, *n*=43) for 11-20 hours/week (50%, *n* = 27) while completing a median of 14 credit hours (anticipated enrolled credit hours at baseline data collection was 16, required enrolled credit hours is 12) and primarily living with other students (85.2%, *n* = 46). The most common primary source of income for parents was employment (53.70%, *n* = 29), with annual reported income of parents typically being less than $9, 999 (37%, *n* = 20) and most common highest education level completed by parents being a high school diploma (40.7%, *n* = 22), making the majority of students first generation four-year college students (85.2%, *n* = 46). See Table 1 for full sample descriptive information.

Aim One: Measure Descriptive Information

Table 2 summarizes the descriptive information for all measures discussed below. Note that median scores will continue to be reported for data from the present study, though mean scores from other research will be discussed at times to provide context for the similarities and differences between this sample and other college samples. When

considering the unweighted LSC-R score, the median number of endorsed stressful/traumatic life events was 3.00, with a range of 0-12. This is similar to the mean number of endorsed events reported by a treatment seeking sample (Brown, Recupero, & Stout, 1995). The majority of the sample in this study endorsed at least one stressful/traumatic life event (93%). Fifty-seven percent (n = 31) reported experiencing at least one traumatic event (median = 2). This is lower than expected and inconsistent with other studies with college students, though these studies used different measures, or the same measure as this study with different scoring (Anders, Frazier, & Shallcross, 2012; Elhai et al., 2012; Freeman, & Fowler, 2009; Read et al., 2011). Females reported more total events than males and individuals identifying as multiracial endorsed more events than other ethnicities. The median LSC-R weighted score was 7.50, with a range of 0-36. For this scoring, which incorporates current distress associated with event, males scored more highly than females, and those participants identifying as African American/Black scored higher than individuals from other ethnic groups.

The most commonly endorsed life event was parental separation/divorce (68.5%). Other commonly endorsed events included death of a close other (not unexpected) (48.1%), having a close family member sent to jail (35.2%), witnessing familial violence before age 16 (31.5%), and serious financial problems while growing up (29.6%). See Table 3 for a full breakdown of endorsed events.

Overall, the sample reported minimal symptoms of mental health difficulties (Median scores: BAI (8.50), BDI (6.00), PTSD screener (1)). Each of the mental health measures, though, had a broad range of scores. Two of the measures (BAI and PTSD screener) had ranges that represented the full range of scores on the measure. Of the 29

participants who completed the PTSD measure, 6 (11% total sample, 20% of those who endorsed question one) had scores of 3 or above, meeting the cutoff score for potential PTSD. The percent of the overall sample meeting the cutoff score was similar to those found in validity studies of the measure (Prins et al., 2003; Prins et al., 2015). Scores on the BAI and BDI were lower than scores found in some college samples, with other research reporting mean scores on the BAI as 9.62 (Jansen, Motley, & Hovey, 2010) and mean scores on the BDI as 12.75 and 11.86 (Carmody, 2005; Steer, & Clark, 1997, respectively).

The median score on the BRS was 3.50, similar to the mean score found in other samples of college students, such as 3.53 and 3.57 (Smith, et al., 2008). Median scores on the BCSSE subscales were 30.00 (Expected Academic Difficulty-BCSSE), 47.17 (Perceived Academic Preparedness-BCSSE), and 48.00 (Academic Perseverance-BCSSE)**.** Median scores on the Perceived Academic Preparedness-BCSSE and Academic Perseverance-BCSSE were somewhat higher than mean scores of the overall student sample at the university from which the sample came, as well as the first-generation mean scores. However, this difference was only three to four points in all cases. For the Expected Academic Difficulty-BCSSE, scores were similar to the overall sample from the university and nearly identical to those in the first-generation college student subset (University of Louisville, 2016). Comparison scores for the BCSSE were obtained from a public report released annually by the university, which summarizes aggregate BCSSE data (University of Louisville, 2016).

In order to inform understanding of these measures in this unique sample, all scales were examined for signal items that may have influenced results. No signal items

were identified for any measure. Removal of any single item on any of the scales would not have affected the overall median for the scale and no single item was endorsed with particular frequency.

The median GPA for the fall semester was 3.00. This is similar to first-year GPA reported in other research (Bachrach, & Read, 2012; Harackiewicz, Barron, Tauer, & Elliot, 2002). Most students did not withdraw from any courses and received zero D/F grades. The number of courses withdrawn from ranged from zero to two. The number of D/F/ grades earned ranged from zero to four, with 35.2% of students earning between one and four D/F grades.

Aim Two: Correlations

As shown in Table 4, significant correlations were found between a number of variables. When considering potential control variables, high school GPA was significantly negatively correlated with the weighted LSC-R score and Fall D/F grades (ρ = -.32, $p < .05$ and ρ = -.29, $p < .05$). Ethnicity and ACT score were significantly correlated (r_{pb} = -.40, p <.05), with those of non-white ethnicity tending to have lower ACT scores. Sex was significantly correlated with anxiety and self-reported resilience (r_{pb} = .43, $p < .01$ and r_{pb} = .36, $p < .01$), with females tending to have more anxiety and higher self-reported resilience. Anxiety and depression were significantly positively correlated (ρ = .65, $p < .01$), while resilience was significantly negatively correlated with both anxiety and depression (ρ = -.48, $p < .01$ and ρ = -.33, $p < .01$, respectively). Anxiety and depression were both significantly positively correlated with the unweighted LSC-R score (ρ = .40, $p < .01$ and ρ = .30, $p < .05$, respectively).

For variables through which there may be anindirect effect, self-reported resilience was significantly positively correlated with both academic perseverance and academic preparedness (ρ = .43, p < .01 and ρ = .27, p < .05, respectively). Academic perseverance and academic preparedness were significantly correlated with one another (ρ = .39, p < .05). Contrary to hypotheses, none of the variables through which there may be an indirect effect were significantly correlated with the predictor or any of the outcome variables. Notably, the unweighted LSC-R score was significantly correlated with fall semester course withdrawals (r_{pb} = .30, p < .05), but was not associated with other outcome variables. All outcome variables (Fall GPA, Fall D/F Grades, and Fall Course Withdrawals) were significantly correlated with one another.

In summary, expected correlations were found between many variables, such as anxiety and depression, mental health and self-reported resilience, mental health and self-reported stressful/traumatic life experiences, and the academic outcome variables, among others. In terms of effect size, the correlations that reached the level of statistical significance fell in the medium to large range. It is noteworthy that many correlations that did not reach statistical significance also fell in the medium effect size range, including correlations between the weighted LSC-R score and both Fall GPA and Fall D/F grades, as well as depression and Fall Course withdrawals and Expected Academic Difficulty and Fall GPA, among others.

Aim Three: Regressions

As a requirement for aim three, testing whether there was a potential indirect effect through the resiliency variables for the relationship between stress/trauma history and academic outcomes, assumptions for regression needed to be met. In most cases,

correlations between these variables were not significant, with *p*-values often .30 or higher. Therefore, the assumption of linearity was not met and regression analyses could not be completed as planned. However, for the exception to this - LSC-R unweighted and course withdrawals - a regression analysis was completed, though no variable through which there may be an indirect effect was included in this analysis. Additionally, as the outcome variable – fall course withdrawals, had to be dichotomized due to the distribution, a logistic regression was used. As an indirect effect is not being tested, this regression did not follow the steps proposed by Baron and Kenny (1986) and discussed in the data analyses plan.

Due to the exploratory nature of this study, two other regression analyses were completed. Both of these included the LSC-R weighted score as the predictor, with one regression for the outcome variable of D/F grades (ρ = -.25, p = .08 with LSC-R weighted) and the other for the outcome variable of fall semester GPA (ρ = .26, p = .07 with LSC-R weighted). In both of these regressions, the only control variable included will be high school GPA (ρ = .32, p = .03 with LSC-R weighted) and the only variable through which there may be an indirect effect included will be perceived academic preparedness (ρ = .24, p = .09 with LSC-R weighted). For these two regressions, the Baron and Kenny (1986) approach was used to provide information on the role of the potential variable through which there may be an indirect effect, though the assumptions of this approach are not met, as regressions determining significant relationships between predictor and potential indirect variable, and potential indirect variable and outcome were not significant. Given assumptions of regression and of the approach are violated, these results will be interpreted with caution.

The first regression, using logistic regression to predict fall course withdrawals from total number of stressful/traumatic life events reported (unweighted) was significant, Wald's χ^2 (1) = 4.72, p <.05, β= .13, OR = 1.24, 95% Confidence Interval (1.01, 1.51). For each additional stressful/traumatic event the student was exposed to, they were 24% more likely to withdraw from a course in the fall semester.

The second regression, predicting fall D/F grades from total number of stressful/traumatic life events reported (weighted) while controlling for high school GPA and perceived academic preparedness (potential indirect effect) was significant, F(3, 45) = 1.87, p < .05. The final model predicted 14% of the variance in fall D/F grades, with 11% of that being predicted by self-reported stressful/traumatic life events. Based on comparison to a regression run without the potential indirect variable in the model, adding in this variable did not alter the predictive value of stressful/traumatic life events (no change in standardized beta or r-square change for predictor variable). See Table 5 for full summary of regression two – predicting fall D/F grades.

The final regression, predicting fall GPA from total number of stressful/traumatic life events reported (weighted) while controlling for high school GPA and perceived academic preparedness (potential indirect effect) was significant, F(3, 45) = 2.21, p <.01. The final model predicted 16% of the variance in fall GPA, with 14% of that being predicted by self-reported stressful/traumatic life events. Based on comparison to a regression run without the potential indirect variable in the model, adding in this variable did not alter the predictive value of stressful/traumatic life events (no change in standardized beta or r-square change for predictor variable). See Table 6 for full summary of regression two – predicting fall GPA.

In summary, a logistic regression predicting fall course withdrawals from total number of stressful/traumatic life events reported (unweighted) was significant, with each additional stressful/traumatic event leading to a 24% increase in the likelihood of withdrawing from a course in the fall semester. A regression predicting fall D/F grades from total number of stressful/traumatic life events reported (weighted) was significant, with 11% of the variance in fall D/F grades being predicted by self-reported stressful/traumatic life events. The final regression, predicting fall GPA was significant with 14% of the variance in fall GPA being predicted by self-reported stressful/traumatic life events.

DISCUSSION

The purpose of this study was to better understand the relationship between a history of stressful and traumatic life events and academic outcomes in a socioeconomically disadvantaged sample of college students, and the potential role of resilience in this relationship. Aims included providing descriptive information on this unique sample, as well as examining basic relationships between a history of stressful/traumatic life events, academic outcomes, and resilience. Descriptively, the sample had experienced less stressful/traumatic life events than hypothesized based on previous research in college samples. Also contrary to hypotheses, there were no significant correlations between resilience and either a history of stressful/traumatic life events or academic outcomes. Regression analyses, although they need to be interpreted cautiously, indicate that adding resilience (in this case, self-reported expected academic perseverance) to the regression model did not change the relationship between stressful/traumatic life events and an academic outcome.

One noteworthy aspect of this study was the novelty of the sample – a group of college students selected due to their low socioeconomic status. Despite this difference, the students in this sample appear to be largely similar to samples of college students used in other research. For example, in the case of life events, the present study reported that 57% of the sample experienced a traumatic life event, while past research reports this is typically around 65% (Elhai et al., 2012; Freeman, & Fowler, 2009; Read et al., 2011).

A similar pattern was noted for total number of stressful/traumatic life events, as well as mental health variables, such as depression and anxiety. It is possible that one reason for these results is the timing of data collection. Baseline data collection occurred *before* the first semester of college began. Most other research has collected data on students who are further into their academic careers (Boyraz et al., 2013; Boyraz et al., 2015). Past research consistently describes the "freshman myth," wherein the expectations of freshmen who are entering college are, essentially, too positive and optimistic, when compared to the actual experience of being in college (Baker, McNeil, & Siryk, 1985; Berdie, 1966; Krieg, 2013; Watkins, 1978). Therefore, as this study collected data at an earlier time point than most past research, it is possible the results in the present study were subject to overly optimistic expectations of the participants, leading to lower scores on self-reported mental health than would have been anticipated. In terms of stressful/traumatic life events, collecting data later in the college career provides more time for students to experience stressful/traumatic events or develop a mental health disorder.

Although this explanation is possible, when considering the only variables for which a direct comparison could be made to college students who were not from a low SES background – expected academic difficulty, perceived academic preparation, and expected academic perseverance - the current sample was nearly identical to the rest of the students at the university, particularly first generation college students. Therefore, it is also possible the current research supports a different hypothesis – that students from low socioeconomic status backgrounds do not differ from other students when considering stressful/traumatic life events, mental health symptoms, or resiliency at the beginning of

college. This is contrary to research describing a relationship between low SES and traumatic event exposure (Read et al., 2011). Based on this past work, one would expect the students in this study, who come from a low SES background, would report a higher number of events, particularly traumatic events. Future work in this area would benefit from direct comparisons within the same sample at the same time period to better understand whether students from low socioeconomic backgrounds differ from other students in these domains.

Similarly, expected significant correlations were not identified between stressful/traumatic life event history, resiliency, and academic outcomes. This is consistent with the hypothesis that students from low socioeconomic status backgrounds may be more similar to than different from other students, as well as the idea that only resilient trauma survivors make it to college (LeBlanc, Brabant, & Forsyth, 1996). The significant positive correlation between ACT scores and number of self-reported stressful/traumatic life events may be further evidence in support of this hypothesis. Consistent with the inoculation model of resiliency, perhaps those who experienced a greater number of events had more opportunities to practice using coping resources, resulting in better test scores on a high-stress test – the ACT. To the extent that this conceptualization is what is actually occurring, it may be that the lack of variability of resiliency in the present sample led to the current results. Although this is a possibility, in the present study, self-reported resilience, perceived academic preparedness, perceived academic persistence, and expected academic difficulty all had variability in scores. Future work including emerging adults from low socioeconomic backgrounds who are not college students could provide valuable information on this hypothesis.

Regression analyses indicated that a history of stressful/traumatic life events accounts for approximately 11% or 14% of the variance in grade-related outcomes, and for each additional life events reported, a student was 24% more likely to withdraw from a course. Although this leaves much variability unexplained, this decreases support for the idea that only resilient trauma survivors make it to college, as these data indicate that trauma/stress history seems to have a role in outcomes. Furthermore, although many of the expected correlations between the predictor and outcomes variables did not reach significance, they still had medium effect sizes, indicating a practical importance. Therefore, even if the hypothesis that only resilient trauma survivors is true, it appears that even for these individuals, a history of stressful/traumatic life events is still related to academic outcomes. Future work should examine larger samples of students for longer periods to determine whether the results of these regressions are replicable and correlations reach significance.

In addition to these primary findings, there were three other noteworthy results from the present study. One of these is that although the included measures of resilience (self-reported resilience, expected academic difficulty, perceived academic preparedness, and expected academic perseverance) did not correlate with predictor or outcomes, they were correlated with one another. Therefore, self-reported resilience was associated with other self-reported resiliency factors, consistent with prior research (Smith et al., 2008). Given the complexities of the concept of resilience, and the ways in which it is measured, future work would benefit from continuing to determine relationships between self-report measures, while also moving toward including behavioral measures. For example, prior research indicates that presence of a mentor, particularly during emerging adulthood, may

be one resiliency factor. Therefore, future work could track number of meetings with advisors to gather information about this and provide evidence of how behavioral information may be similar/dissimilar to self-report data. With regards to resiliency prior to college, social competence, which has been previously indicated to be a protective factor in children and adolescents, could be examined through observational methods (Luthar, 1991). This information could be used in studies such as the present one to better understand if different ways of measuring resiliency provide different information or have different relationships with outcomes. In a review on educational resilience, the authors note that multi-informant, multi-method approaches are necessary to move the area forward (Waxman, Gray, & Padron, 2003).

The second of these is that all of the academic outcome variables significantly correlated with one another. Although not a primary aim of the present study, three potential academic functioning outcome variables were included to enable a broadened conceptualization of academic functioning. Past research has utilized primarily GPA, potentially limiting the conclusions that can be drawn due to the many correlates of GPA, including demographics, prior academic performance, motivation, personality traits, and context (Richardson, Abraham, & Bond, 2012). The finding that fall course withdrawals and fall D/F grades are related to GPA is evidence that all of these outcomes variables fall into a similar category. Additionally, although the correlation between fall D/F grades and fall GPA was quite high, the relationship of these variables separately to fall course withdrawals was significant, but not as large. This is support of the importance of considering multiple outcomes, as these variables seem to fall into a similar category, while not having complete overlap. In particular, inclusion of academic outcomes that are

not grade dependent could provide valuable information. Some of these include drop-out rates and course repeats. Future research should continue to pursue examination of academic outcome variables and the relationship, or lack thereof, between these variables and predictors.

The final noteworthy result is the potentially divergent relationships between the weighted and unweighted scores of the traumatic/stressful life event measure and other variables in this study. For ease of discussion, these scores will be referred to as perception of events (weighted) and experienced events (unweighted) for the rest of this paper. Specifically, while number of experienced events was significantly associated with depression and anxiety, as well as course withdrawals, perception of events did not significantly correlate with these three variables. When considering perception of events, correlations approached significance for GPA and D/F grades.

One interpretation of this discrepancy is simply that the wording of the follow-up question required for calculating perception of events is ambiguous. This question asks respondents to rate how much the event has affected life in the past year. Respondents, therefore, are left to decide for themselves whether this effect on life was positive or negative. Literature is increasingly discussing the concept of post-traumatic growth, or positive changes individuals may experience following a stressful or highly traumatic event. For example, some individuals report improved relationships with others or an increased appreciation for life (Tedeschi, & Calhoun, 1996). It is not possible to determine if students in the present study interpreted the question in different ways, or exactly how this may have affected results, though there is some support for this possibility in the data, as perception of events did not correlate with mental health

outcomes. Although negative effect on life does not necessarily mean mental health outcomes must be poor, it is certainly possible that the reason this relationship did not emerge was because when individuals were rating effect on life, they interpreted it to be positive effects, not negative. It is at least plausible that the conflation of positive and negative perceived effects of trauma biased results.

Although this is possible, the results between the experienced events and perception of events, though differential in some ways, were both consistent with prior work on academic outcomes – more stress/trauma leads to worse outcomes. Therefore, another hypothesis should be considered for the differential relationships. This hypothesis is that the results represent a real phenomenon of differences between the sheer number of events experienced versus the perception of how these events are affecting oneself. Perhaps those individuals who indicated the event was significantly affecting their life were distracted from schoolwork due to this, thereby struggling more with grade-based outcomes (GPA and D/F grades earned). Meanwhile, those individuals who had experienced a high number of events previously may have continued to experience stressful/traumatic events during the course of the fall semester, detracting from their ability to remain in and complete courses. Essentially, different coping resources and decisions may be required as a function of perception versus number of experiences. Fewer events, even if the individual perceives the effect of them to be high, may still allow for persistence toward the goal – completing the course. However, as the number of events increases, the perception of effect on life could be less meaningful, as the individual becomes overwhelmed and unable to persist toward the goal, resulting in a course withdrawal.

This speaks somewhat to the idea of cumulative adversity, wherein more events, particularly severe events, leads to worse outcomes (Schilling, Aseltine, & Gore, 2009; Turner, & Lloyd, 1995). The present research suggests that not just the total number of events needs to be examined, but also the perception of the individual regarding these events. Some past research has reported that the emotional response and perception of the event are what actually relate to outcomes, such as PTSD, not the event itself (Boals, & Schuettler, 2009). Little past research has examined both perception of events and experienced event scores of a single measure in one study. One study was identified that used the same measure as the present study (LSC-R) and reported on both scores. In this study, cortisol assessed in hair did not differ based on type of scoring used (Schreier, et al., 2016). As this study was examining a biological domain, perception of events versus experienced events may have been a less important factor in outcomes than in the present study, which examines a functional domain. Given the lack of available literature in this area, future work is needed to clarify how number of events versus perception of the event may show similar or different patterns of relationships with outcomes in a variety of domains.

Limitations. There are a number of limitations to the present study. Primary among these is the use of self-report measures for most variables, with the exception of the outcome variables. Self-report measures, though commonly used in research, rely on the individual completing them to be forthcoming with information, as well as have the insight to complete the measures accurately. Additionally, self-report measures are one potential representation of a construct. In order to assist with construct validation, future work should incorporate behavioral measures to determine whether behaviors match self-

report, or if behavioral predictors are better than self-report measures. For example, in the present line of research, willingness to seek help when needed may be an interesting factor to consider, and one that could be examined by objective behaviors (e.g., number of times a student went to tutoring).

Related to this, one of the self-report measures – the PTSD screener – was not completed by many of the participants. This seemed to be due to not understanding the instructions for the measure. Given that this research was interested in trauma, not being able to examine the relationship between the variables of interest and PTSD symptoms/diagnostic status is a noteworthy limitation. Future work would benefit from using a different measure or perhaps a clinical interview to better understand PTSD symptoms, as well as other mental health symptoms, in this sample.

Another limitation of the present study is that there was only one time point available for the academic outcome variables. Past work indicates that the first year, and the first semester of the first year, may be particularly important to the academic course of students (Boyraz et al., 2015). However, having only the first semester data made it difficult to examine some potentially important outcomes, as the ranges of some of the outcome variables (course withdrawals and number of D/F grades) were relatively constricted. Furthermore, past research focused on drop-out rates as an academic outcome variable. Although one goal of this study was to examine other academic outcome variables, it is possible that the most meaningful relationships exist only with drop-out rates – an outcome that is difficult to examine after only one semester. Future work will benefit from inclusion of further time points while students are in college. However, the current study does take into account pre-college data (e.g., high school

GPA, ACT score), as well as the first-semester academic information, which is a strength of this study compared to past research.

Despite these factors, a significant correlation was found between total number of traumatic/stressful life events reported and course withdrawals for the fall semester, supporting the hypothesis of the present study and past research. To the extent that this finding is an accurate representation of the relationship between stress/trauma and an academic outcome, future work should collect more time points for outcome data. Following students over the course of their academic career to determine whether this trend continues would provide valuable information regarding timing of adverse outcomes and the best time for potential intervention.

A final limitation of the present study was the lack of a direct comparison sample. With the exception of the data from the BCSSE, for which it was possible to compare to the overall university sample, there was no way to determine whether the group of students in this study was similar to or different from the broader sample of students at the same university. Results indicate that on the BCSSE, the present sample was mostly similar to the student body as a whole. Additionally, although it was difficult to compare this sample to samples used in other research due to the use of medians in the current study and the use of means in most other research, it appears there may be differences in this sample (e.g., less anxiety/depression in present sample). However, without a direct comparison, it is difficult to know whether this is a function of the unique sample used in this study, or a function of some difference in the student body as a whole.

CONCLUSION

Contrary to expectation, the present study provided novel evidence that students from a low socioeconomic status who are entering college are largely similar to other students when considering rates of traumatic/stressful life event exposure, mental health concerns, and self-reported resiliency factors. Additionally, a lack of significant relationships between these variables provides support for the hypothesis that only resilient trauma survivors make it to college. However, exploratory regression analyses indicate that this may not be totally true. Future work should focus on replicating these results with larger samples. Additionally, direct comparison samples, both of other college students and of emerging adults from low socioeconomic status backgrounds who are not enrolled in college, would provide valuable evidence regarding the hypothesis that only resilient trauma survivors make it to college. Finally, although not an original aim of the study, the present research reports differential relationships with outcomes for experienced events versus perception of these events. More work is needed in this area to determine if this finding can be replicated, and potential mechanisms behind this difference.

Given the number of students currently attending American colleges and universities, as well as the high number of students who are not successful in this, this research has implications for those who work with college students, including mental health professionals, educators, and administrators. Furthermore, this research has implications for policy, as it provides information about what types of programming may

be most beneficial for students. Providing more support for the present results could also be particularly important as poor academic functioning in college students could affect long-term outcomes, including the ability to complete college and attain career goals. Therefore, understanding when these outcomes occur could lead to long-term benefits for those students struggling to maintain good academic standing.

REFERENCES

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*. Washington, D.C: Author.

Anders, S.L., Frazier, P.A., & Shallcross, S.L. (2012). Prevalence and effects of life event exposure among undergraduate and community college students. *Journal of Counseling Psychology, 59*(3), 449-457. doi 10.1037/a0027753

Bachrach, R.L., & Read, J.P. (2012). The role of posttraumatic stress and problem alcohol involvement in university academic performance. *Journal of Clinical Psychology, 68*(7), 843-859. doi 10.1002/jclp.21874

Baker, R.W., McNeil, O.V., Siryk, B. (1985). Expectation and reality in freshman adjustment to college. *Journal of Counseling Psychology, 32*(1), 94-103.

Banyard, V.L., & Cantor, E.N. (2004). Adjustment to college among trauma survivors: An exploratory study of resilience. *Journal of College Student Development, 45*(2), 207-221. doi 10.1353/csd.2004.0017

Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of *Personality and Social Psychology, 51*, 1173-1182.

Barry, A.E., Whiteman, S.D., & MacDermid Wadsworth, S.M. (2012). Implications of posttraumatic stress among military-affiliated and civilian students. *Journal of American College Health, 60*(8), 562-573.

Beck, A.T., & Steer, R.A. (1990). Manual for the Beck anxiety inventory. *San Antonio, TX: Psychological Corporation.*

Berdie, R.F. (1966). College expectations, experiences, and perceptions. *Journal of College Student Personnel*, *31*, 336-344.

Boals, A., Schuettler, D. (2009). PTSD symptoms in response to traumatic and non-traumatic events: The role of respondent perception and A2 criterion. *Journal of Anxiety Disorder, 23,* 458-462. doi 10.1016/j.janxdis.2008.09.003

Bonanno, G.A., & Mancini, A.D. (2008). The human capacity to thrive in the face of potential trauma. *Pediatrics, 121*(2), 369-375. doi 10.1542/peds.2007-1648

Boyraz, G. Granda, R., Baker, C.N., Tidwell, L.L., & Waits, J.B. (2015). Posttraumatic stress, effort regulation, and academic outcomes among college students: A longitudinal study. *Journal of Counseling Psychology.* doi 10.1037/cou0000102

Boyraz, G., Horne, S.G., Owens, A.C., & Armstrong, A.P. (2013). Academic achievement and college persistence of African-American students with trauma exposure. *Journal of Counseling Psychology, 60*(4), 582-592. doi 10.1037/a0033672

Brown, P.J., Recupero, P.R., & Stout, R. (1995). PTSD substance abuse comorbidity and treatment utilization. *Addictive Behaviors, 20*(2), 251-254.

Carmody, D.P. (2005). Psychometric characteristics of the beck depression inventory in college students of diverse ethnicity. *International Journal of Psychiatry in Clinical Practice, 9*(1), 22-28. doi 10.1080/13651500510014800

Duncan, R.D. (2000). Childhood maltreatment and college drop-out rates: Implications for child abuse researchers. *Journal of Interpersonal Violence, 15*(9), 987-995.

Duncan, G.J., Brooks-Gunn, J., Yeung, W.J., & Smith, J.R. (1998). How much does childhood poverty affect the life chances of children? *American Sociological Review, 63*(3), 406-423.

Elhai, J. D., Miller, M. E., Ford, J. D., Biehn, T. L., Palmieri, P. A., & Frueh, B. C. (2012). Posttraumatic stress disorder in DSM-5: Estimates of prevalence and symptom structure in a nonclinical sample of college students. *Journal of Anxiety Disorders, 26*(1), 58-64. doi:10.1016/j.janxdis.2011.08.013

Fergus, S., & Zimmerman, M.A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health, 26,* 399-419. doi 10.1146/annurev.publhealth.26.021304.44357

Freeman, D., & Fowler, D. (2009). Routes to psychotic symptoms: Trauma, anxiety, and psychosis-like experiences. *Psychiatry Research, 169,* 107-112. doi 10.1016/j.psychres.2008.07/009

Galea, S., Ahern, J., Tracy, M., Hubbard, A., Cerda, M., Goldmann, E., & Vlahov, D. (2008). Longitudinal determinants of posttraumatic stress in a population-based cohort study. *Epidemiology, 19*(1), 47-54. doi 10.1097/EDE.0b013e31815c1dbf

Garmezy, N. (1991). Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *The American Behavioral Scientist, 34*(4), 416-431.

Hardaway, C.R., Larkby, C.A., & Cornelius, M.D. (2014). Socioemotional adjustment as a mediator of the association between exposure to community

violence and academic performance in low-income adolescents. *Psychology of Violence, 4*(3), 281-293. doi 10.1037/a0036375

Hatch, S.L., & Dohrenwend, B.P. (2007). Distribution of traumatic and other stressful life events by race/ethnicity, gender, SES, and age: A review of the research. *American Journal of Community Psychology, 40*(3). doi 10.1007/s10464-007-9134-z

Harackiewicz, J.M., Barron, K.E., Tauer, J.M., & Elliot, A.J. (2002). Predicting success in college: A longitudinal study of achievement goals and ability measures as predictors of interest and performance from freshman year through graduation. *Journal of Educational Psychology, 94*(3), 562-575. doi 10.1037//0022-0663.94.3.562

Hildyard, K.L., & Wolfe, D.A. (2002). Child neglect: Developmental issues and outcomes. *Child Abuse and Neglect, 26*, 679-695.

Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health*, 3-10. doi 10.1016/j.jadohealth.2009.08.008

Infurna, F.J., & Luthar, S.S. (2016). Resilience to major life stressors is not as common as thought. *Perspectives on Psychological Science, 11*(2), 175-194. doi 10.1177/1745691615621271

Jansen, K.L., Motley, R., & Hovey, J. (2010). Anxiety, depression and students' religiosity. *Mental Health, Religion, and Culture, 13*(3), 267-271. doi 10.1080/13674670903352837

Jordan, C.E., Combs, J.L., & Smith, G.T. (2014). An exploration of sexual victimization and academic performance among college women. *Trauma, Violence, & Abuse, 15*(3), 191-200. doi 10.1177/1524838014520637

Kraemer, H.C., Kiernan, M., Essex, M., & Kupfer, D.J. (2008). How and why criteria defining moderators and mediators differ between the Baron & Kenny and MacArthur approaches. *Health Psychology, 27*(2), 101-108. doi 10.1037?0278-6133.27.2(Suppl.).S101

Krieg, D. (2013). High expectations for higher education? Perceptions of college and experiences of stress prior to and through the college career. *College Student Journal, 47*(4), 635-643.

LeBlanc, J.B., Brabant, S., & Rorsyth, C.J. (1996). The meaning of college for survivors of sexual abuse: Higher education and the older female college student. *American Journal of Orthopsychiatry, 66*, 468-473.

Lloyd, D.A., & Turner, R.J. (2003). Cumulative adversity and posttraumatic stress disorder: Evidence from a diverse community sample of young adults. *American Journal of Orthopsychiatry, 73*(4), 381-391. doi 10.1037/0002-9432.73.4.381

Luecken, L. J., & Gress, J. L. (2010). Early adversity and resilience in emerging adulthood. *Handbook of Adult Resilience*, 238-257.

Luthar, S.S. (1991). Vulnerability and resilience: A study of high-risk adolescents. *Child Development, 62*(3), 600-616.

Luther, S.S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543-562.

Mallette, B.I., & Cabrera, A.F. (1991). Determinants of withdrawal behavior: An exploratory study. *Research in Higher Education, 32*(2), 179-194.

Martin, J.A., & Elmer, E. (1992). Battered children grown up: A follow-up study of individuals severely maltreated as children. *Child Abuse and Neglect, 16*, 75-87.

Masten, A.S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*(3), 227-238. doi 10.1037/0003-066X.56.3.227

Masten, A.S., Burt, K.B., Roisman, G.I., Obradovic, J., Long, J.D., & Tellegen, A. (2004). Resources and resilience in the transition to adulthood: Continuity and change. *Development and Psychopathology, 16*, 1071-1094. doi 10.1017/S0954579404040143

McHugo, G.J., Kammerer, N., Jackson, E.W., Markoff, L.S., Gatz, M., Larson, M.J., … & Hennigan, K. (2005). Women, co-occurring disorders, and violence study: Evaluation design and study population. *Journal of Substance Abuse Treatment, 28*(2), 91-107.

National Center for Education Statistics. (2015). Fast facts: Back to school statistics. http://nces.ed.gov/fastfacts/display.asp?id=372

Nikulina, V., Widom, C.S., & Czaja, S. (2011). The role of childhood neglect and childhood poverty in predicting mental health, academic achievement, and crime in adulthood. *American Journal of Community Psychology, 48*, 309-321. doi 10.1007/s10464-010-9385

Patel, V., Flisher, A., Hetrick, S., & McGorry, P. (2007). Mental health of young people: A global public-health challenge. *Lancet, 369,* 1302–1313.

Perez, C.M., & Widom, C.S. (1994). Childhood victimization and long-term intellectual and academic outcomes. *Child Abuse and Neglect, 18*(8), 617-633.

Prins, A., Ouimette, P., Kimerlin, R., Cameron, R.P., Hugelshofer, D.S., Shaw-Hegwer, A. T., …Sheikh, J.I. (2003). The primary care PTSD screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry, 9*(1), 9-14.

Prins, A., Bovin, M.J., Smolenski, D.J., Marx, B.P., Kimerling, R., Jenkins-Guarnieri, M.A.,…Tiet, Q.Q. (2015). The primary care PTSD screen for DSM-5 (PC-PTSD-5): Development and evaluation within a veteran primary care sample. *Journal of General Internal Medicine, 31*(10), 1206-1211. doi 10.1007/s11606-016-3703-5

Read, J.P., Ouimette, P., White, J., Colder, C., & Farrow, S. (2011). Rates of DSM-IV-TR trauma exposure and posttraumatic stress disorder among newly matriculated college students. *Psychological Trauma: Theory, Research, Practice, and Policy, 3*(2), 148-156. doi 10.1037/a0021260

Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin, 138*(2), 353-387. doi 10.1037/a0026838

Robertson, C., Lewine, R., & Sommers, A. (2014). Perseveration and academic failure in healthy male undergraduates. *NACADA Journal, 34*(1), 16-21. doi 10.12930/NACADA-13-005

Rosenthal, B.S., & Wilson, W.C. (2003). Impact of exposure to community violence and psychological symptoms on college performance among students of color. *Adolescence, 38*(150), 239-249.

Ross, S.E., Niebling, B.C., & Heckert, T.M. (1999). Sources of stress among college students. *College Student Journal, 33*(2), 312-318.

Schilling, E.A., Aseltine, R.H., & Gore, S. (2009). The impact of cumulative adversity on young adult mental health: Measures, models, and interpretations. *Social Science & Medicine, 66*(5), 1140-1151. doi 10.1016/j.socscimed.2007.11.023

Schreier, H.M.C., Enlow, M.B., Ritz, T., Coull, B.A., Gennings, C., Wright, R.O., & Wright, R.J. (2016). Lifetime exposure to traumatic and other stressful life events and hair cortisol in a multi-racial/ethnic sample of pregnant women. *Stress, 19*(1), 45-52. doi 10.3109/10253890.2015.1117447

Seery, M.D., Holman, E.A., & Silver, R.C. (2010). Whatever does not kill us: Cumulative lifetime adversity, vulnerability, and resilience. *Journal of Personality and Social Psychology, 99*(6), 1025-1041. doi 10.1037/a0021344

Smith, B.W., Dalen, J., Wiggens, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine, 15*(3), 194-200.

Steer, R.A., & Clark, D.A. (1997). Psychometric characteristics of the beck depression inventory-II with college students. *Measurement and Evaluation in Counseling and Development, 30*(3).

Tedeschi, R.G., & Calhoun, L.G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*(3).

Thomas, E.K. (1998). Abused college students. *Psychology: A Journal of Human Behavior, 35(*3-4), 61-63.

Turner, R.J., & Lloyd, D.A. (1995). Lifetime traumas and mental health: The significance of cumulative adversity. *Journal of Health and Social Behavior, 36*(4), 360-376.

Ungerer, O., Deter, H.C., Fikentscher, E., & Konzag, T.A. (2010). Improved diagnostics of trauma-related disease through the application of the Life-Stressor Checklist. *Psychotherapie, Psychosomatik, Medizinische Psychologie, 60*(11), 434-441. doi 10.1055/s-0030-1247497

University of Louisville. (2016). BCSSE Institutional Report.

Watkins, D. (1978). A note on student satisfaction with university: A case study. *Education Research and Perspectives, 5*, 45-53.

Waxman, H.C., Gray, J.P., & Padron, Y.N. (2003). Review of research on educational resilience: Research Report. *Center for Research on Education, Diversity, & Excellence (U.S. Department of Education).*

Werner, E.E. (1995). Resilience in development. *Current Directions in Psychological Science, 4*(3), 81-85.

Windle, G., Bennett, K.M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes, 9*(8)

Wolfe, J., Kimerling, R., Brown, P.J., Chrestman, K.R., & Levin, K. (1996). Psychometric review of the life stressor checklist-revised. *Measurement of stress, trauma, and adaptation,* 198-201.

World Health Organization. (2002). Estimates of DALYs by sex, cause and level of development

for 2002. Retrieved July 25, 2006.

Yeater. E., Miller, G., Rinehart, J., & Nason, E. (2012). Trauma and sex surveys meet minimal risk standards: Implications for institutional review boards. *Association for Psychological Science, 23*(7), 780-787. doi 10. 1177/0956797611435131

APPENDIX A

Key Definitions

- Academic Functioning: A broad term that encompasses multiple aspects of the academic experience. This term includes factors such as academic performance, academic adjustment, and academic motivation, among others. This is the outcome in this research.
- Academic Performance: One aspect of academic functioning that typically focuses on grades and is most often represented by Grade Point Average (GPA). Other factors could be considered as part of academic performance, though, such as course withdrawals.
- Non-Traumatic Stressor: Stressful experiences that do not meet the definition of a traumatic stressor, but could influence outcomes for an individual. Examples include divorce, poverty, homelessness, moving to a new home, and job loss.
- Resilience: The process through which individuals who encounter risk proceed to overcome that risk. Resilience should not be thought of as a static trait.
- Traumatic Stressor/Trauma: Events or situations that involve actual or perceived death, injury, or sexual violence, as well as learning about or witnessing the events (American Psychiatric Association, 2013). Although trauma can encompass a wide number of experiences, many of the studies in this research focus on a history of abuse or neglect as the trauma being examined. The terms trauma and abuse, however, should not be perceived as meaning the same thing.

APPENDIX B

Variable Groupings

- Predictors
    - Stress and trauma history
- Variables through which there may be an indirect effect
    - Self-reported resilience
    - Expected academic difficulty
    - Perceived academic preparedness
    - Academic perseverance
- Outcomes
    - GPA
    - D and F grades
    - Withdrawals
- Potential control variables
    - High school GPA
    - Enrolled credit hours
    - Gender
    - Ethnicity
    - Anxiety
    - Depression
    - PTSD

Table 1

Sample Characteristics Descriptive Statistics

Variable	Median (IQR) or % of Sample (*n*)
Age 18	96.30% (52)
Female Gender	61.10% (33)
High School GPA	3.8 (.57)
ACT	25 (6)
Completed Enrolled Hours	14 (4.50)
Ethnicity	
White/European	57.40% (31)
African American/Black	13.00% (7)
Hispanic/Latino/a	5.06% (3)
Asian/Pacific Islander	9.03% (5)
Multiracial	11.10% (6)
Income Source	
Parent/Guardians	22.20% (12)
Self (Scholarships/Grants/Work)	64.80% (35)
Employed	
On-Campus	79.60% (43)
Off-Campus	18.50% (10)
On-Campus Employment Hours	
1-10 hours/week	27.80% (15)
11-20 hours/week	50.00% (27)
Greater than 30 hours/week	1.90% (1)
Housing	
Alone	3.70% (2)
With other students	85.20% (46)
With parent/relative/guardian	11.10% (6)
Parental Household Income	
Less than $9, 999	37.00% (20)
$10,000-$19, 999	27.80% (15)
$20,000-$39, 999	25.90% (14)
$40,000 –$59, 999	1.90% (1)
Primary Source of Income for Parents	
Disability	24.10% (13)
Employment	53.70% (29)
Inheritance	1.90% (1)
Public Assistance	1.90% (1)
Other	7.40% (4)
Highest Education Level Parents	
Did not complete high school	13.00% (7)
High school diploma	40.70% (22)
Attended college, no degree	18.50% (10)
Associate's degree	13.00% (7)
Bachelor's degree	11.10% (6)
Advanced degree	3.80% (2)

Note. $N = 54$ except for high school GPA, ACT (53); gender, ethnicity, enrolled hours (52); parental household income (50); primary source of income for parents (48); income source (47); employment on-campus hours (43).

Table 2

Measure Descriptive Statistics

Variable	Median (IQR) or % of Sample (*n*)	Range (when applicable)
LSC-R Unweighted	3.00 (5)	0-12
Gender		
Female	4.50 (5.75)	0-12
Male	3.00 (3.00)	0-9
Ethnicity		
White/European	4.00 (5.00)	1-11
African American/Black	2.00 (5.00)	0-8
Hispanic/Latino/a	3.00 (5.00)	1-12
Asian/Pacific Islander	2.00 (5.00)	0-8
Multiracial	5.00 (4.25)	3-8
LSC-R Weighted	7.50 (12.75)	0-36
Gender		
Female	6.00 (16.00)	0-36
Male	10.00 (16.00)	0-36
Ethnicity		
White/European	8.50 (15.75)	0-36
African American/Black	11.00 (10.00)	1-23
Hispanic/Latino/a	7.00 (7.00)	3-13
Asian/Pacific Islander	4.00 (30.00)	1-36
Multiracial	3.50 (16.50)	1-22
Traumatic Events	2.00 (3)	1-11
BRS	3.50 (1)	2.17-5.00
BCSSE		
Expected Academic Difficulty	30.00 (11)	12-48
Academic Preparedness	47.14 (9.75)	24-60
Academic Perseverance	48.00 (10.71)	28-60
GPA	3.00 (1.40)	0.00-4.00
D and F Grades	0 (1)	0-4
0	63.00% (*n* = 34)	
1	18.50% (*n* = 10)	
2	11.10% (*n* = 6)	
3	3.70% (*n* = 2)	
4	1.90% (*n* = 1)	
Withdrawals	0 (1)	0-2
0	74.10% (*n* = 40)	
1	22.20% (*n* = 12)	
2	1.90% (*n* = 1)	
BAI	8.50 (28)	0-60
BDI	6.00 (11)	0-41
PTSD Screener	1 (2)	0-4

Note. *N* = 54 except for D and F grades (53), withdrawals, gender, ethnicity, BAI (52), BDI (51), LSC-R Weighted (48), traumatic events (31 participants who endorsed at least one event), PTSD Screener (29 participants who endorsed question one).

Table 3

LSC-R Events Descriptive Statistics

Variable	% of Sample (*n*)
Experienced serious disaster	5.60% (3)
Witnessed serious accident	18.50% (10)
Experienced serious accident	7.40% (4)
Close family member sent to jail	35.20% (19)
Self sent to jail	0.00% (0)
Self in foster care/adoption	3.70% (2)
Parental separation/divorce	68.50% (37)
Self separation/divorce	0.00% (0)
Serious money problems	29.60% (16)
Self serious physical/mental illness	24.10% (13)
Experienced emotional abuse/neglect	18.50% (10)
Experienced physical neglect	5.60% (3)
Experienced miscarriage/abortion (women only)	0.00% (0)
Separation from child against own will	0.00% (0)
Child with severe physical/mental handicap	0.00% (0)
Responsible for other's care	20.40% (11)
Unexpected death of close other	25.90% (14)
Other death of close other	48.10% (26)
Witnessed familial violence before age 16	31.50% (17)
Witnessed robbery/mugging/attack	0.00% (0)
Experienced robbery/mugging/attack	0.00% (0)
Experienced physical abuse/attack before age 16	13.00% (7)
Experienced physical abuse/attack after age 16	3.70% (2)
Bothered/harassed by sexual remarks/jokes	20.40% (11)
Experienced forced sexual touching/threat before age 16	7.40% (4)
Experienced forced sexual touching/threat after age 16	3.70% (2)
Experienced forced sex before age 16	1.90% (1)
Experienced forced sex after age 16	7.40% (4)
Experienced other event	5.60% (3)
Event happened to close other	24.10% (13)

Note. $N = 54$ except for experienced miscarriage/abortion (women only) (33), separation from child against own will (47), child with severe physical/mental handicap (48), responsible for other's care (53).

.

Table 4
Correlation Matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. High School GPA	-	.16	.04	.11	.06	.03	.07	-.07	-.07	.07	-.02	.06	-.32*	.22	-.29*	-.04
2. ACT	-	-	.27	-.03	-.37*	.06	-.14	.08	.04	-.10	.18	.36**	-.17	.08	.05	.01
3. Enrolled Hours	-	-	-	-.14	.05	-.12	-.10	-.05	.21	.11	.03	.00	-.14	.01	.03	.17
4. Sex	-	-	-	-	-.12	.47**	.21	-.34**	.16	.03	-.20	.36*	.02	.21	-.24	.05
5. Ethnicity	-	-	-	-	-	-.02	.07	-.19	.07	-.01	-.10	-.25	-.22	.05	-.07	-.11
6. Anxiety	-	-	-	-	-	-	.65**	-.48**	.02	-.17	-.08	.40**	-.08	-.03	-.09	.04
7. Depression	-	-	-	-	-	-	-	-.33*	.06	.02	-.04	.30*	-.05	-.10	.01	.23
8. Resilience	-	-	-	-	-	-	-	-	.01	.43**	.27*	-.01	.18	.09	-.01	-.11
9. Academic Difficulty	-	-	-	-	-	-	-	-	-	.05	-.04	.00	.12	.21	-.08	.06
10. Academic Perseverance	-	-	-	-	-	-	-	-	-	-	.39**	.08	.13	.15	-.04	.06
11. Academic Preparedness	-	-	-	-	-	-	-	-	-	-	-	.09	.24	.00	-.01	-.01
12. LSC-R Unweighted	-	-	-	-	-	-	-	-	-	-	-	-	-.08	-.01	.07	.30*
13. LSC-R Weighted	-	-	-	-	-	-	-	-	-	-	-	-	-	.26	-.25	-.15
14. Fall GPA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.80**	-.48*
15. Fall D/F Grades	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.51**
16. Fall Course Withdrawals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note. *p<.05 **p<.01

Table 5

Summary of Regression Analysis of Fall D/F Grades

Model	*R*	R^2	R^2 change	*F*	df	*p*	*Unstandardized B*	*Standardized beta*	*t*	*p*
Block 1	.17	.03	.03	1.37	1	.25	--	--	--	--
HS GPA	--	--	--	--	--	--	-.68	-.30	-1.98	.06
Block 2	.17	.03	.00	.66	2	.96	--	--	--	--
PAP	--	--	--	--	--	--	.01	.01	.42	.70
Block 3	.38	.14	.11	2.33	3	.02	--	--	--	--
Life Events	--	--	--	--	--	--	-.04	-.37	-2.35	.02

Note. Block 1 = High School (HS) GPA, block 2 = perceived academic preparedness (PAP), block 3 = stressful/traumatic life events (weighted).

Table 6

Summary of Regression Analysis of GPA

Model	*R*	R^2	R^2 change	*F*	df	*p*	*Unstandardized B*	*Standardized beta*	*t*	*p*
Block 1	.13	.02	.02	.78	1	.38	--	--	--	--
HS GPA	--	--	--	--	--	--	.64	.28	1.82	.08
Block 2	.13	.02	.00	.38	2	.98	--	--	--	--
PAP	--	--	--	--	--	--	-.00	-.07	-.50	.62
Block 3	.40	.16	.14	2.64	3	.01	--	--	--	--
Life Events	--	--	--	--	--	--	-.04	.41	2.67	.01

Note. Block 1 = High School (HS) GPA, block 2 = perceived academic preparedness (PAP), block 3 = stressful/traumatic life events (weighted)

CURRICULUM VITAE

Ashlee Warnecke

Education

2013-Present **University of Louisville** – Louisville, Kentucky
Doctoral Candidate, Clinical Psychology, APA Accredited Program
Doctoral Dissertation: (Defended) *First Semester Academic Functioning of College Students: The Role of Stressful and Traumatic Life Events.*
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December 2016 **University of Louisville** – Louisville, Kentucky
Master of Arts in Clinical Psychology

August 2012 **Chatham University** – Pittsburgh, Pennsylvania
Master of Arts in Psychology

May 2011 **Ohio Northern University** – Ada, Ohio
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Clinical Experience and Training

Predoctoral Internship Clinical Experience

July 2017-present **VA North Texas Health Care System, Dallas, Texas**
APA Accredited Predoctoral Internship
Director of Training: Jamylah Jackson, PhD
Anticipated Completion Date: July 11, 2018

Anticipated Rotations January 2018-July 2018

Mental Health Diamond Team
Supervisor: Gloria Emmett, PhD, ABPP Clinical Psychology

- Six-month half-time major rotation in general outpatient clinic, working on an interdisciplinary team to provide comprehensive outpatient care for Veterans of all conflicts. Will have the opportunity to learn and implement Acceptance and Commitment Therapy for Depression.

Mental Health Trauma Team
Supervisor: Anushka Pai, PhD

- Six-month half-time major rotation focusing on treating combat trauma in OEF/OIF/OND veterans, as well as female and male veterans who have experienced military sexual trauma (MST) and female veterans with combat trauma history and/or civilian trauma across the lifespan. Will have the

- opportunity to practice Cognitive Processing Therapy (CPT) and Prolonged Exposure (PE).

Evidence Based Psychotherapy Rotation: Integrated Behavioral Couple Therapy
Supervisor: Lisa Thoman, PhD
- Six-month minor rotation receiving one-on-one training and supervision in Integrated Behavioral Couples Therapy (IBCT)

October 2017-present

Spinal Cord Injury Center, Outpatient
Supervisors: Rebecca Frontera, PsyD; Tara Rosema, PhD
- Three-month full-time major rotation
- Assisted with program development and evaluation, including rotation development and development of groups for those receiving inpatient and outpatient care in the center
- Provided individual therapy to Veterans with a variety of presenting concerns.
- Acted as a member of an interdisciplinary team to complete annual examinations on an outpatient basis, including chart review, self-report mental health measures, cognitive screener, and clinical interview

July 2017-present

Evidence Based Psychotherapy Rotation: Prolonged Exposure
Supervisor: Kristin Julian, PhD
- Six-month minor rotation in Prolonged Exposure (PE)
- Completed diagnostic evaluations to confirm presence of Posttraumatic Stress Disorder (PTSD) before beginning treatment
- Provided individual psychotherapy, suicide risk assessment, safety planning

July 2017-October 2017

Mental Health Gold Team (Substance Use Disorders Team)
Supervisor: Jennifer Mayfield, PhD
- Three-month full-time major rotation in outpatient and residential substance use disorder (SUD) treatment using a Community Reinforcement Approach
- Co-facilitated outpatient process-based groups including Aftercare and Coping Skills; Facilitated residential psychoeducational groups including Coping Skills, Relapse Prevention, Co-Dependent Relationships, and Pros and Cons
- Acted as primary clinician for residential patients, including individual meetings to discuss progress and coordinating with other VA resources
- Received training in and practiced evidence-based practices, including Motivational Interviewing, Cognitive-Behavioral Therapy for SUD, and Contingency Management for Stimulant Use Disorder
- Completed assessments, including medical record review, psychosocial intake interviews, diagnostic interviewing, testing, and report writing
- Participated in and led interdisciplinary team meetings

Doctoral Clinical Practica

August 2016-July 2017

Mindfulness-Based Clinical Team

Noble H. Kelley Psychological Services Center, University of Louisville
Supervisor: Paul Salmon, Ph.D.

- Used empirically supported mindfulness-based psychotherapy with adult clients
- Assisted with 8-week Mindfulness group for permanent base staff of the Kentucky Air National Guard

July 2014-July 2017

Psychological Assessments Practicum
Noble H. Kelley Psychological Services Center, University of Louisville
Supervisor: David Winsch, Ph.D.

- Administered psychodiagnoastic assessments for ADHD, learning disabilities, developmental disorders, and personality disorders
- Wrote integrative reports using assessment information and provided feedback to clients and clients' families

Supervisor: Bernadette Walter, Ph.D.

- Conducted intake assessments for the Psychological Services Center and wrote integrative reports
- Conducted evaluations and provided reports to aid school system in determining eligibility for Advanced Program

Program Development and Evaluation
Noble H. Kelley Psychological Services Center, University of Louisville
Supervisors: Richard Lewine, Ph.D. and Dr. Bernadette Walter, Ph.D.

- Implemented and coordinated drop-in hours to encourage students to seek services
  - Coordinated resources to provide to students, developed a schedule and supervised graduate students, coordinated with program administration, developed necessary forms, including confidentiality and consent forms
- Attended orientation to provide information on services and common mental health issues for college students, assisted with presentation on mindfulness
- Taught lectures for mandatory General Studies course
  - "Ways of Thinking and Decision Making"
  - "Developing Self-Discipline and Self-Compassion"

March 2016-July 2017

Clinical Graduate Teaching Assistant (CGTA)
Noble H. Kelley Psychology Services Center (PSC), University of Louisville
Supervisor: Bernadette Walter, Ph.D.

- Served as a Clinical Assistant at the PSC; Responsibilities included opening and closing the clinic, accepting payments, updating client database, phone intakes for therapy and assessment clients, crisis management for clients walking into and calling the PSC
- Supervised graduate students, conducted chart audits

July 2016-May 2017

United States Army Recruiting Command (USAREC)
Fort Knox, Kentucky
Supervisor: MAJ Jeffrey Bass, PsyD, Licensed Clinical Psychologist

- Performed clinical assessments of Soldiers selected for recruiting duty and reviewed electronic medical records. Consulted with medical providers
- Developed competence working with active duty service men and women and organizational/industrial psychology

November 2015-December 2016

Neuropsychological Assessment Practicum
University of Louisville Hospital, Department of Surgery
Supervisor: Elizabeth Cash, Ph.D.

- Administered neuropsychological assessment battery for cognitive impairment and dementia; conducted collateral interviews with family members; wrote reports
- Completed pre-surgical evaluations (i.e., cochlear implant), conducted cognitive assessments in children with potential central auditory processing disorder; wrote reports
- Assisted with program development, such as creating manuals for future student use, drafting letter for clients, and updating report templates

August 2013-August 2016

Integrative Clinical Team
Noble H. Kelley Psychological Services Center, University of Louisville
Supervisor: Richard Lewine, Ph.D.

- Used empirically supported methods to integrate various models of psychotherapy to best meet the needs of clients with complex clinical presentations
  - Provided tailored therapy to clients presenting with diverse presentations, including severe affective and psychotic disorders
  - Provided therapy to undergraduate students and provided tailored therapy and outreach to Cardinal Covenant Scholarship program students
- Conducted extended intake assessments for clients with complex presentations

Specialized Trainings and Certifications Related to Clinical Work

November 2017 — FIM System® Training and Certification
VA North Texas Health Care System

- Completed training on how to document the severity of patient disability and follow changes in functional status from the start of rehabilitative care through discharge and follow-up.

October 2017 — Clinician Administered PTSD Scale for DSM 5 (CAPS-5)
VA North Texas Health Care System

- Learned to administer the CAPS-5 and demonstrate reliability in coding

July 2016 — Military Culture: Core Competencies for Healthcare Professionals
Center for Deployment Psychology and VHA TRAIN online training

- Completed online training consisting of four modules to gain a better understanding of military ethos, military organization and roles, stressors and resources, and treatment resources and tools for service members and veterans

Office of the Command Psychologist Continuing Education Training

Fort Knox, Kentucky

- Attended full-day workshops on the following topics: "Unconventional Mentoring: Increase Performance Through Building Rapport" and "Competencies of Consultation"

May 2016 — Life After Trauma: Using ACT to Revitalize Interrupted Lives
Webinar, International Society for Traumatic Stress Studies
Presenter: Robyn Walser, PhD

- Overview of using Acceptance and Commitment therapy in treating trauma, specifically focused on integration of value-based concepts

October 2015 — SafeZone Training
University of Louisville LGBT Center

- Attended two-day training on how to provide an atmosphere of support and understanding for LGBT individuals; learned about advocating against homophobic and heterosexist comments

Peer-Reviewed Publications

Szabo, Y.Z., **Warnecke, A.J.**, Newton, T.N., & Valentine, J. (2017). Associations between rumination and posttraumatic stress symptoms: A systematic review and meta-analysis. *Anxiety, Stress, & Coping, 30*(4), 396-414.

Newton, T.L., Fernandez-Botran, R., Lyle, K.B., Szabo, Y.Z., Miller, J.J., & **Warnecke, A.J.** (2017). Salivary cytokine response in the aftermath of stress: An emotion regulation perspective. *Emotion, 17*(6), 1007-1020.

Warnecke, A.J., Szabo, Y.Z., Burns, V.E., Fernandez-Botran, R., Miller, J.J., & Newton, T.L. (2016). Sheltering for safety in community women with divorce histories. *Violence Against Women 23*(13), 1638-1655.

Peer, J.R., **Warnecke, A.J.**, Baum, C.A., & Goreczny, A. (2015). Stigmatization of people with schizophrenia: Perspectives of graduate students in various healthcare fields. *International Journal of Mental Health, 44*, 186-199.

Warnecke, A., Baum, C., Peer, J., & Goreczny, A. (2014). Intercorrelations between individual personality factors and anxiety. *College Student Journal, 48*, 23-33.

Isacco, A., **Warnecke, A.**, Ampuero, M., Donofrio, L., & Davies, J. (2013). Evaluation of a leadership program for fraternity men. *Journal of Men's Studies, 21*(3), 217-235.

Zoladz, P., **Warnecke, A.**, Woelke, S., Burke, H., Frigo, R., Pisansky, J., Lyle, S. M., & Talbot, J. (2013). Pre-learning stress that is temporally removed from acquisition exerts sex-specific effects on long-term memory. *Neurobiology of Learning and Memory, 100*, 77-87.

Zoladz, P., Clark, B., **Warnecke, A.**, Smith, L., Tabar, J., & Talbot, J. (2011). Pre-Learning stress differentially affects long-term memory for emotional words, depending on temporal proximity of the learning experience. *Physiology and Behavior, 103*, 467-476.

Manuscripts in Progress

Warnecke, A.J., Davis, D.M., & Lewine, R. (*In Preparation*). Academic functioning of socioeconomically disadvantaged college students: The role of stressful and traumatic life events.

Lewine, R., **Warnecke, A.J**., Davis, D., Sommer, A.A., & Manley, K. (*In Preparation*). An exploratory analysis of linguistic predictors of successful academic performance among economically disadvantaged first year students.

Poster Presentations

Warnecke, A.J., Davis, D.M., Manley, K., McKendree, C., & Lewine, R. (November 2017). Emotional obstacles to academic success in stress and trauma exposed economically disadvantaged students. Poster presented at the International Society for Traumatic Stress Studies, Chicago, IL.

Szabo, Y.Z., **Warnecke, A.J.**, Newton, T.N., & Valentine, J. (November 2016). Rumination and posttraumatic stress symptoms in trauma-exposed adults: A systematic review and meta-analysis. Poster presented at the International Society for Traumatic Stress Studies, Dallas, TX.

Warnecke, A.J., Szabo, Y.Z., Burns, V., Fernandez-Botran, R., Miller, J., & Newton, T.L. (November 2015). Sheltering for safety in community women with divorce histories. Poster presented at the International Society for Traumatic Stress Studies, New Orleans, LA.

Peer, J., Goreczny, A. J., Baum, C., & **Warnecke, A.** (November 2014). Promoting independence among individuals with intellectual disability: Impact on choice, control, and inclusion. Poster presented at the Annual Convention of the Association for Behavior and Cognitive Therapies, Philadelphia, PA.

Warnecke, A.J., Baum, C., Peer, J., & Goreczny, A. (November 2013). Relationships between anxiety and various personality factors among Psychology, Physical Therapy, and Occupational Therapy graduate students: Implications for training. Poster presented at Association for Behavioral and Cognitive Therapies Conference, Nashville, TN

Peer, J., **Warnecke, A.J.**, Baum, C., & Goreczny, A. (November 2013). Stigmatization of individuals with schizophrenia: Perspectives of graduate students from Psychology, Physical Therapy, and Occupational Therapy fields. Poster presented at Association for Behavioral and Cognitive Therapies Conference, Nashville, TN

Baum, C., Peer, J., **Warnecke, A.J.**, & Goreczny, A. (November 2013). Graduate students stress, anxiety, and depression: Future time, future problems? Poster presented at Association for Behavioral and Cognitive Therapies Conference, Nashville, TN

Warnecke, A.J., Burke, H.M., Frigo, R.M., Woelke, S.A., Pisansky, J.M., Robinson, C.M., Wolters, N.E., Talbot, J.N., & Zoladz, P.R. (November 2013). Pre-learning social evaluative stress exerts sex-specific effects on long-term picture memory. Poster presented at Society for Neuroscience Conference, San Diego, CA

Warnecke, A., Burke, H., Frigo, R., Pisansky, J., Woelke, S., Holcomb, E., Talbot, J., & Zoladz, P.R. (October 2012). Pre-learning stress selectively impairs long-term memory in males who exhibit a robust cortisol response to stress. Poster presented at Society for Neuroscience Conference, New Orleans, LA

Zoladz, P., Clark, B., **Warnecke, A.**, Smith, L., Tabar, J., & Talbot, J. (November 2010). Pre-learning stress differentially affects long-term memory for emotional words, depending on temporal proximity of the learning experience. Poster presented at Society for Neuroscience Conference, San Diego, CA

Research Experience and Training

2015-present Graduate Research Assistant, University of Louisville
Advisor: Dr. Richard Lewine (PI)

- Contributed to design, execution, and management of longitudinal study examining risk and resilience in students from low socioeconomic backgrounds; Analyzed data using SPSS statistical software

2013-2016 Graduate Research Assistant, University of Louisville Stress & Health Lab
Advisor: Dr. Tamara Newton (PI)

- Contributed to the design, execution, and management of acute stress study; developed research questions and hypotheses about gender differences and rumination; Analyzed data using SAS statistical software
- Assisted in development and implementation of cognitive task study using Inquisit software
- Proficient in using SNAP, Qualtrics, and Survey Monkey software
- Aided in training and supervising undergraduate and graduate research assistants

2011-2012 Independent Research Study, Chatham University
Advisor: Dr. Anthony Goreczny (PI)
- Designed and implemented an independent research study on graduate students, stress, and personality factors; Analyzed data using SPSS data analysis software

2011-2012 Research Assistant, Pennsylvania Center for Women and Politics
Advisor: Dr. Jackie Filla (PI) and Dr. Dana Brown
- Assisted with literature searches and information gathering
- Aided in data gathering via direct observation, mail surveys, and phone surveys
- Completed data analysis using Excel

2011-2012 Graduate Research Assistant, Chatham University
Advisor: Dr. Anthony Isacco (PI)
- Worked with a team of researchers to examine the psychology of gender
- Performed literature reviews; Assisted with transcribing and coding data using ATLAS.ti data analysis software
- Aided in the preparation of manuscripts

2009-2011 Undergraduate Research Assistant, Ohio Northern University
Advisor: Dr. Phillip Zoladz (PI)
- Assisted with the development, implementation, and management of studies on stress, memory, and learning
- Aided with selecting, training, and supervising new research assistants
- Served as Head Research Assistant in the lab for one year

Teaching Experience

2016-2017 Clinical Graduate Teaching Assistant (CGTA)
Interviewing Skills Practicum, Summer 2016
- Instructed first year clinical doctoral students in basics of interviewing, provided written feedback on student reflections, facilitated role plays on issues of suicidality, multicultural issues, and mental status examination

Psychologist Assessment, Spring 2017
- Instructed first year clinical doctoral students in basics of assessment administration and report writing (assessment measures taught include the WAIS-IV, WISC-V, MMPI-2), provided written feedback on student practice administrations and facilitated role plays of test administration

2016 Guest Lectures
Personality Psychology, Summer 2016
- Taught a two-day lecture series on Modeling Theory, including examples and discussion

Abnormal Psychology, Summer 2016
- Taught a two-day lecture series on trauma and stressor-related disorders, as well as dissociative disorders, including case examples and discussion

2013-2016 Graduate Teaching Assistant, University of Louisville
Social Psychology, Spring 2016
- Held office hours and review sessions for students. Graded written assignments
- Proctored and graded examinations using Scantron and Blackboard software

Developmental Psychology, Spring 2016
- Attended lectures and aided in examples. Met with students individually

Cognitive Psychology, Spring 2015 and Fall 2015
- Aided in demonstrations and examples
- Aided with proctoring and grading quizzes and examinations. Met with students individually to review examinations

Personality Psychology, Summer 2015
- Assisted with preparing materials, including lecture materials
- Held office hours for students. Graded assignments, including papers

Abnormal Psychology, Fall 2013-Spring 2015
- Taught lectures on mood disorders and substance abuse
- Led review sessions before examinations and held office hours for students

2010-2011 Undergraduate Teaching Assistant, Ohio Northern University
Experimental Psychology, Fall 2010 & Spring 2011
- Prepared in-class exercises
- Worked with faculty member to read and grade papers
- Aided a group of undergraduate students in designing, implementing, analyzing, and disseminating a research study

Language Partner
- Helped Saudi Arabian students with English language skills and coursework

Introduction to Psychology Tutor
- Worked flexibly to provide as-needed assistance to Introduction to Psychology students

Trainings Related to Teaching

2014-2015 Graduate Teaching Assistant Academy, University of Louisville
- Participated in a series of interactive lectures on topics including engaging students, using technology, creating materials and developing a philosophy of teaching
- Joined with a group of other students to create a presentation on a classroom technology using team-based learning
- Completed a micro-teaching session, for which feedback was given

2014 Title IX: Navigating Multiple Roles as Graduate Students
- Discussed Title IX, as well as the Clery Act, and the practical implications of these guidelines when working with students at a university

Professional Organizations

2015-present Student Member International Society for Traumatic Stress Studies
2010-present Student Affiliate American Psychological Association (APA)

2014-present APA Division of Psychotherapy (Division 29) Member
2010-present Psi Chi, the International Honors Society in Psychology
2010-2014 Student Member Society for Neuroscience

Professional and Service Activities

Community Engagement

January-March 2018 Student Co-Representative to Diversity Training Committee
VA North Texas Health Care System, Mental Health Service Line
- Provided feedback on diversity training
- Participated in program development, outreach opportunities, and discussions on diversity-related issues

2016-2017 Women's Center Outreach Representative
University of Louisville
- Worked collaboratively with staff to plan and implement events for female students
- Coordinated with staff to provide resources to female students
- Conducted workshops and presentations on stress management, self-compassion, coping skills

2014-2016 Psychological Services Center Representative
- Provided information on mental health and illness, and available resources to attendees
  - Depression Screening Day October 2015, 2016
  - Military Child Appreciation Day April 2016
  - Eastern Star Baptist Church Health and Wellness Fair September 2015
  - National Association for Black Veterans, Gathering of the Eagles, Military Appreciation Day, Kentucky State Fair August 2015
  - Women Veterans Conference April 2015
  - Zion Baptist Church Health Fair September 2014

2014-2016 Regional Science Fair Judge, Louisville, Kentucky

- Worked with other judges and interacted with students to evaluate science fair projects and promote young peoples' interest in science and research

2015 Student Volunteer, International Society for Traumatic Stress Studies
- Assisted with checking individuals into conference, directing them to poster presentation set-up, counting attendance at symposium, on-site registration

University Engagement

2014-2017 Graduate Student Ambassador
University of Louisville School of Interdisciplinary and Graduate Studies
- Answered questions, provided campus tours, and assisted at events for prospective students and current students
- Worked with faculty, staff, and other graduate students to facilitate ceremonies, including the doctoral hooding ceremony

2015-2017 Graduate Student Co-Representative

Department of Psychological and Brain Sciences

- Assisted with orientation and welcome activities for incoming students
- Provided feedback to faculty regarding student concerns
- Aided in planning interview events for potential students
- Helped to organize student liaison system

2014-2015 University of Louisville Graduate Student Council

- Department of Psychological and Brain Sciences – Proxy Representative

2010-2011 Undergraduate Psi Chi President

- Managed the Ohio Northern University Psi Chi chapter, including initiation of new member, budgetary concerns, and activities

Undergraduate Psychology Club Vice President

- Aided with planning activities and club management

Community Presentations

June 2016 "Coping with Stress"
August 2015 "College, Stress, and Mindfulness"
July 2015 "Negotiating College and Mental Health and Illness"

Journal Reviewer

2014-present Ad-Hoc Reviewer, *Translational Issues in Psychological Science*
August 2014 Student Co-Reviewer, *Journal of Interpersonal Violence*

Honors and Awards

2017 Certificate of Appreciation for Exemplary Service and Excellent Leadership
- *Department of the Army, Fort Knox*

2017 Excellence in Clinical Work
- *University of Louisville, Department of Psychological and Brain Sciences*

2016 Excellence in Professional Service
- *University of Louisville, Department of Psychological and Brain Sciences*

2014 Mathilda B. Canter Education and Training Student Paper Award
- *APA Division 29*

2011 Outstanding Graduating Senior in Psychology Award
- *Ohio Northern University*

2010 Outstanding Senior (by credit hour) in Psychology Award
- *Ohio Northern University*

2009 Phi Kappa Phi Honor Society
2008 Alpha Lambda Delta Honor Society
2007-2011 Presidential Scholar Scholarship Program
- *Ohio Northern University*

2007-2011 United Auto Workers Richard T. Gosser Scholarship Program
2007-2011 Ohio Board of Regents Robert C. Byrd Honors Scholarship Program