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IMPACTS OF GENDER-BASED VIOLENCE AND HARASSMENT ON GRADUATE
STUDENT ACADEMIC FUNCTIONING

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Philosophy in Education at Virginia Commonwealth University.

by

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Abstract

IMPACTS OF GENDER-BASED VIOLENCE AND HARASSMENT ON GRADUATE STUDENTS' ACADEMIC FUNCTIONING

By Jennifer W. Underwood, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Education at Virginia Commonwealth University.

Virginia Commonwealth University, 2019

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Researchers and practitioners have increasingly focused on institutional responses to campus gender-based violence/harassment, yet they have paid far less attention to graduate student experiences than to undergraduate student experiences. Graduate students operate in a different context from undergraduates, and therefore specific knowledge of gender-based violence/harassment in the lives of graduate students is needed. The purpose of this exploratory, nonexperimental study was to better understand the prevalence of adult gender-based violence/harassment and adverse childhood experiences (ACEs) among graduate students, as well as to understand the relationship between those experiences and participants' mental health and academic functioning. The study's theoretical framework combined critical adult learning theories with cognitive perspectives on adult learning, including the neurobiology of trauma. Data used in the current study were originally collected as part of an institutional campus climate survey on gender-based violence; responses from $n = 684$ of the randomly selected participants were used in the current study's analyses. Participants commonly reported both adult gender-based violence/harassment experiences and ACEs. The results of two OLS regressions indicated that experiencing more types of adult gender-based violence/harassment or more types of ACEs

was associated with higher levels of negative affect and lower levels of mindfulness. Among participants who experienced gender-based violence/harassment in graduate school, independent samples *t*-tests showed that individuals who reported at least occasional academic functioning difficulties had lower levels of mindfulness and higher levels of negative affect than those who did not experience difficulties. Overall, the findings suggest the need for trauma-informed policies and practices within graduate education and higher education in general.

Chapter One: Introduction

While the #MeTooPhD movement has pushed conversations about sexual harassment to the forefront of many higher education spaces (Anderson, 2018; Gluckman, Read, Mangan, & Quilantan, 2017; Korn, 2018), gender-based violence and harassment are neither new nor rare in academia. This is not surprising as college campuses are workplaces, educational systems, and residential communities that are embedded within the systems and structures of larger society (Stevens, Armstrong, & Arum, 2008) where gender-based violence and harassment are prevalent (Black et al., 2010). Much of the existing research on campus gender-based violence/harassment, however, has focused on the needs and experiences of cisgender, white, heterosexual, undergraduate women (Linder & Harris, 2017; National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal, Smidt, & Freyd, 2016). The purpose of the current study was to expand the research on campus gender-based violence/harassment to focus on the experiences and academic functioning of a diverse sample of graduate student survivors.

Theoretical Approach

Critical adult learning theory, cognitive perspectives on adult learning, and the neurobiology of trauma comprised the study's framework. Epistemologically, critical theorists believe both that realities are socially constructed and that systems of oppression have tangible and meaningful impacts on people's lives (Onwuegbuzie, Johnson, & Collins, 2009; Paul, Graffam, & Fowler, 2005). Broadly, critical theory highlights the structures and systems that perpetuate violence and oppression against marginalized groups, including those marginalized because of gender identity, sexual orientation, and race/ethnicity (Cunningham, 1992; Paul et al., 2005). Those structures and systems of oppressions are interlocking, meaning that the effects of oppression are entangled for those with multiple marginalized identities (Combahee River

Collective, 1995; Tisdell, 1993). When applied to adult learning, critical theory highlights the role of power within educational systems, including graduate education (Caffarella & Olson, 1993; Chapman & Sork, 2001; Tisdell, 1993). Critical adult learning theory also connects students' experiences of violence and oppression outside of the classroom to their experiences and performance in the classroom (Tisdell, 1995, 1998).

Whereas critical adult learning theory focuses on the structural and environmental impacts on learning, cognitive adult learning perspectives focus on the individual cognitive processes of learning. These processes are often holistically referred to as cognitive architecture (Sweller, 2012). The elements of cognitive adult learning that were of particular relevance to the current study were memory and schema (Merriam, Caffarella, & Baumgartner, 2007). Various structures of the brain work together to acquire, process, and store information (Merriam et al., 2007; Taylor, 2006). The information is stored in long-term memory and organized as schemas (Merriam et al., 2007). Piaget originally developed the concept of schema, which is the cognitive structure that he theorized children create to interact with and understand their world (Crain, 2000). Schemas serve a similar function for adults as for children. They provide the brain structure and context to interpret and organize new with existing information in memory; new knowledge and experiences can further develop and/or change existing schemas (Crain, 2000; Merriam et al., 2007).

According to the neurobiology of trauma, traumatic experiences create both short and long-term changes in cognitive brain functioning, including learning processes (Cross, Fani, Powers, & Bradley, 2017; Perry, 2006). These impacts come from both previous traumas (such as in childhood or earlier in adulthood) and current traumas (Anda et al., 2006; Cross et al., 2017). During situations where the brain senses danger, the limbic system shuts down higher-

level cognitive functioning to devote all resources to survival (Perry, 2006; Taylor, 2006). This not only changes the way information is encoded into memory and processed through schemas, but also creates neural pathways of those connections (Cross et al., 2017). People who have experienced repeated trauma or cumulative stress have cycled through these states so often that the neural pathways are semi-permanently altered, leading to heightened stress responses even when no threat is present (Perry, 2006). The resulting changes in brain functioning can negatively impact adult learning through memory and cognition, as well as through social and emotional reactions in the classroom (Kerka, 2002; Perry, 2006). The interlocking systems of oppression and neurobiological impacts of trauma combine to shape graduate students' experiences of violence/harassment and the impacts of those experiences on their academic functioning.

Background

Most research on gender-based violence/harassment within college student populations has focused on undergraduate students to the exclusion of graduate students (National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). As used in the current study, gender-based violence/harassment encompasses broad sexual assault, intimate partner violence, stalking, and sexual harassment. Each term is defined in more depth at the end of this chapter. Although the data on graduate school violence/harassment is scant, one recent study showed that 70% of female graduate students and 54% of male graduate students had experienced at least one form of gender-based violence/harassment during graduate school (Rosenthal et al., 2016). One of the only studies to compare the prevalence of specific types of gender-based violence/harassment between graduate and undergraduate students showed that graduate students experienced lower levels of all forms of gender-based violence (Cantor et al.,

2015). These rates varied by gender identity, with trans and gender non-conforming graduate students often having higher rates than cisgender undergraduate women (Cantor et al., 2015; Coulter et al., 2017).

Because an undergraduate degree is a standard prerequisite for graduate programs, understanding the rates of adverse childhood experiences (ACEs) and undergraduate experiences of gender-based violence/harassment provides a general picture of the levels of trauma students might bring with them to graduate school. In previous research, between 30% and 53% of college students reported two or more ACEs (Karatekin, 2018; Khrapatina & Berman, 2017). Rates of gender-based violence/harassment experiences vary greatly between institutions and among types of violence/harassment (Cantor et al., 2015; Krebs, Lindquist, Berzofsky, Shook-Sa, & Peterson, 2016). Broadly, however, multiple research studies have shown that at least 20% of female college students experienced some form of unwanted sexual experience during college (Cantor et al., 2015; Palmer & Perrotti, 2016). Research has also shown prevalence rates of sexual harassment to be between 44% and 64% (Brooks & Perot, 1991; Cantor et al., 2015; Rosenthal et al., 2016), intimate partner violence to be between 31% and 80% (Amar & Gennaro, 2005; Wood, Voth Schrag, & Busch-Armendariz, 2018), and stalking to be approximately 4% (Cantor et al., 2015). Overall, data suggest that a substantial number of graduate students enter their programs with pre-existing trauma.

Similar to prevalence research, researchers investigating the impact of gender-based violence/harassment on academic functioning have focused almost exclusively on undergraduate students. In a multi-campus study on female undergraduate experiences of sexual violence, researchers found that survivors commonly reported wanting to or actually taking time off from school, dropping classes, and experiencing problems with their coursework (Krebs et al., 2016).

Other researchers found that among undergraduate students, those who experienced sexual violence or intimate partner violence during college were more likely see decreases in their GPA (Mengo & Black, 2016). Other common academic impacts reported in the literature include doing poor work, missing class, avoiding specific classes, and changing majors (National Academies of Sciences, Engineering, and Medicine, 2018).

Studies have shown that types of negative affect, such as depression, anxiety, and stress, are common mental health concerns for all college students, including graduate students (Boynton Health Service, 2018; Hyun, Quinn, Madon, & Lustig, 2006; Kernan, Bogart, & Wheat, 2011). Gender-based violence/harassment survivors have displayed significantly higher mental health concerns than non-survivors (Amar & Gennaro, 2005; Artime, Buchholz, & Jakupcak, 2018; Lindquist et al., 2013). While no studies have looked at the impacts of ACEs on the mental health of graduate students, research on both undergraduate students and adult non-students has shown a significant association between higher numbers of ACEs and more mental health challenges (Felitti et al., 1998; Karatekin, 2018). A substantial number of students, especially those with fewer protective factors, have reported that depression, anxiety, and stress interfere with their academic functioning (Boynton Health Service, 2018; Frazier, Gabriel, Merians, & Lust, 2018).

Mindfulness can positively alter brain structures and neural patterns (Siegel, 2007) in the same way that trauma can negatively impact them (Anda et al., 2006). Mindfulness interventions have been shown to increase cognitive functioning (Shapiro, Brown, & Astin, 2011) and decrease anxiety and stress levels (Bamber & Morpeth, 2019; Stillwell, Vermeesch, & Scott, 2017; Yusuf, Nicoloso-SantaBarbara, Grey, Moyer, & Lobel, 2018). Though the research is limited, mindfulness shows promise as a protective factor against the negative impacts of gender-

based violence/harassment and childhood adversity (Tubbs, Savage, Adkins, Amstadter, & Dick, 2018; Whitaker et al., 2014).

Gaps in the Literature

Research on gender-based violence/harassment and graduate students is limited. Elements of the graduate school experience, including increased academic rigor and dependence on individual faculty members, mean that the context of graduate students' experiences is different from that of undergraduates (National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). Graduate students also tend to be in a different life stage than traditionally-aged undergraduates, which means they likely have different educational goals and personal responsibilities (Merriam et al., 2007). Given those contextual differences, generalizing findings from undergraduate students to graduate students is not appropriate.

The prevalence of adult gender-based violence/harassment experiences among graduate students is not well understood and studies on graduate student experiences of ACEs are lacking. Additionally, little is known about the relationship between gender-based violence/harassment and holistic academic functioning among graduate students. While a small number of studies have looked at associations between specific types of gender-based violence and specific measures of academic functioning (for example, Banyard et al., 2017; Krebs et al., 2016), none have included sexual harassment with other forms of gender-based violence. Also, none have investigated these issues within samples comprised only of graduate students. Researchers have not studied mindfulness in the context of gender-based violence/harassment and academic functioning in either graduate or undergraduate student samples.

Statement of the Problem

The existing data related to gender-based violence/harassment and graduate students is sparse (Rosenthal et al., 2016). Researchers need to conduct more empirical research in this area, specifically by expanding studies regarding the academic impacts of gender-based violence/harassment to include graduate students. Beyond the empirical gaps in the literature, researchers also need to explore methodological gaps. Most of the existing research with graduate and undergraduate student populations has focused on cisgender, white, heterosexual women (Iverson, 2017; Linder & Harris, 2017; National Academies of Sciences, Engineering, and Medicine, 2018). Research encompassing diverse identities (in terms of gender identity, sexual orientation, race/ethnicity, and academic discipline) is critically important.

Present Study

Study Significance

Gender-based violence/harassment is a significant problem in higher education, but is understudied among graduate students (Rosenthal et al., 2016). The current study sought to address both the empirical and methodological gaps in the literature to better understand and address the impacts of gender-based violence/harassment on graduate students' academic functioning. This research contributed to the field by advancing knowledge about the prevalence of four types of gender-based violence/harassment among graduate students: broad sexual assault, intimate partner violence, stalking, and sexual harassment. Additionally, the information collected on perceived difficulties in academic functioning shed much needed light on how gender-based violence/harassment impacts graduate students in the context of their academic lives. These findings have significant implications for programs and services to support graduate students, as well as for the institutional climate and diversity pipelines.

Purpose Statement

The purpose of this exploratory study was to examine the relationships between academic functioning, mindfulness, and negative affect in the context of the adverse childhood and adult gender-based violence experiences of graduate students. Prior trauma and negative affect have been associated with both current trauma (Arttime et al., 2018; Messman-Moore & Long, 2000) and academic functioning (Boynton Health Service, 2018; Karatekin, 2018). Mindfulness is thought to be a protective factor for gender-based violence/harassment survivors (Tubbs et al., 2018), as well as to have a role in increased academic functioning (Shapiro et al., 2011). By looking at adult experiences of gender-based violence/harassment, adverse childhood experiences, negative affect, mindfulness, and academic functioning together, the current study led to an enhanced understanding of how these factors interact in graduate students' lives.

Research Questions

The following research questions guided this study:

RQ1: What is the prevalence of gender-based violence/harassment and ACEs among graduate students at an urban research university? (descriptive)

RQ2: How do adult gender-based violence/harassment experiences and ACE history impact *mindfulness* levels among graduate students? (regression)

RQ3: How do adult gender-based violence/harassment experiences and ACE history impact *negative affect* levels among graduate students? (regression)

RQ4: Among students who experienced gender-based violence/harassment in graduate school, do *mindfulness* levels differ among those who experienced difficulties in academic functioning versus those who did not? (group comparison)

RQ5: Among students who experienced gender-based violence/harassment in graduate school, do *negative affect* levels differ among those who experienced difficulties in academic functioning versus those who did not? (group comparison)

Methodological Overview

The study, which used existing data, was nonexperimental and cross-sectional in design. Data from randomly selected graduate students were originally collected as part of an institutional gender-based violence campus climate survey conducted in the fall of 2018. The author was a member of the climate study research team and helped create the survey instrument and implementation plan. Only specific data from the larger study was used in the current study, including data related to gender-based violence/harassment experiences, adverse childhood experiences, negative affect, mindfulness, academic functioning, and demographic variables. Specific measures and statistical analyses are outlined in Chapter 3.

Definition of Key Terms

Definitions related to gender-based violence vary across studies, institutions, and state law. Key terms are defined below in order to increase transparency related to the measurement of gender-based violence/harassment, as well as the understanding of other constructs addressed in the current study.

Gender-based violence/harassment. Gender-based violence/harassment includes any of the following: broad sexual assault, intimate partner violence, stalking, and sexual harassment. These behaviors can be perpetrated by a person of any gender identity and relationship to the victim.

Broad sexual assault. Broad sexual assault is defined as attempted or completed non-consensual sexual contact (ranging from sexual touching to oral, vaginal, and anal penetration)

that happens through force, threat, intimidation, coercion, and/or taking advantage of someone's incapacitation (Koss et al., 2007).

Intimate partner violence. Intimate partner violence is defined as physically or emotionally abusive behavior that occurs in the context of a casual, steady, or serious dating or intimate relationship (Wood et al., 2018). While sexual abuse is an important component of intimate partner violence, it was not measured in this study to simplify the survey and avoid participant confusion with the sexual violence section.

Stalking. Stalking is defined as repeated following or watching, and/or repeated phone, written, or digital/electronic communication that the target perceives as obsessive and/or makes them afraid for their personal safety (Cantor et al., 2015).

Sexual harassment. Sexual harassment is defined as behaviors based on sex or gender that interfere with an individual's ability to fully participate in the academic environment, either directly or through the creation of a hostile environment (Cantor et al., 2015; National Academies of Sciences, Engineering, and Medicine, 2018). Sexually harassing behaviors include obscene, inappropriate, or offensive remarks about the target's body or sexual activities, unwanted sexual advances, and using positional power to offer special treatment or threaten punishment in exchange for sexual favors. The study separated academic power-based sexual harassment (where faculty members, advisors, or others with academic power over the participant perpetrated sexual harassment) from general sexual harassment. Gender harassing behaviors include harassment or mistreatment due to gender expression or gender identity (including intentional misgendering).

Adverse childhood experiences (ACEs). ACEs are defined as experiences of abuse, neglect, and household challenge that occurred before participants were 18 years old (Centers for Disease Control and Prevention & Kaiser Permanente, 2016).

Mindfulness. Mindfulness is defined as being conscious of, aware of, and attuned to the present context (Brown & Ryan, 2003).

Negative affect. Negative affect includes the mental health constructs of depression, anxiety, and stress. *Depression* is a negative mood state characterized by feelings of sadness, worthlessness, hopelessness, and low motivation (Lovibond & Lovibond, 1995). *Anxiety* is characterized by panic, fear, and increased physical arousal that can be either be situation specific or more generalized (Lovibond & Lovibond, 1995). *Stress* is a lower-level state characterized by tension, low threshold for frustration, and ongoing arousal (Lovibond & Lovibond, 1995).

Difficulties in academic functioning. Difficulties in academic functioning is a holistic term referring to students' challenges with academic engagement and success and is comprised of three constructs: academic disengagement, academic isolation, and poor academic outcomes. *Academic disengagement* refers to decreased or distancing academic behaviors (National Academies of Sciences, Engineering, and Medicine, 2018). *Academic isolation* refers to decreased interactions with students and faculty within the survivor's department and/or field (National Academies of Sciences, Engineering, and Medicine, 2018). *Poor academic performance* refers to decreased quality of assignments, as well as lower course grades and GPA.

Conclusion

Chapter 1 has provided an overall introduction to the current study. Chapter 2 will outline the study's theoretical framework, which is based upon critical theories of adult learning,

cognitive perspectives on adult learning, and the neurobiology of trauma. The study will be contextualized within the existing research on campus gender-based violence/harassment and academic functioning, with a specific focus on graduate students. Gaps in the existing literature will be highlighted, along with the specific ways the study addressed those gaps. Chapter 3 will outline the methodology, including research design and the use of existing data. Measures and variables will also be explained. The chapter will conclude with a discussion of ethical considerations. Chapter 4 will provide an in-depth description of the data analysis and results. Chapter 5 will contain a discussion of the results, their implications and limitations, and directions for future research.

Chapter Two: Literature Review

Chapter 2 provides a review of the literature related to graduate student experiences of gender-based violence/harassment and the impact of those experiences on their academic functioning. The chapter will begin by outlining the theoretical framework upon which the study was based. It will then briefly describe the context of graduate students as a specific population of college students. Information about what is known and what currently remains unknown about the relationship between gender-based violence/harassment and graduate student academic functioning will be reviewed in order to show the need for further research. Literature on constructs that may impact the relationship, such as adverse childhood experiences, negative affect (including depression, anxiety, and stress), and mindfulness, will also be explored. The chapter will conclude with a discussion of the gaps the study addressed.

Theoretical Framework

The study's theoretical framework combined critical adult learning theory, cognitive perspectives on adult learning, and the neurobiology of trauma. Adult learning processes are complex and involve individual learning factors as well as learning environment factors. While there are multitudes of theories of adult learning, those related to critical and cognitive theories were most relevant to the current study. Critical theories of adult learning, including poststructural feminist pedagogies, look at the contextual structures that impact adult learning such as gender identity, sexual orientation, and race/ethnicity (Hansman & Mott, 2010; Tisdell, 1993, 1998). Cognitive perspectives on adult learning focus on how the brain processes information and creates knowledge (Merriam et al., 2007; Taylor & Lamoreaux, 2008). Given the trauma-based focus of the study, a discussion of the neurobiology of trauma helps explain

mechanisms through which gender-based violence/harassment might impact holistic academic functioning. Figure 1 provides a visual representation of the theoretical framework.

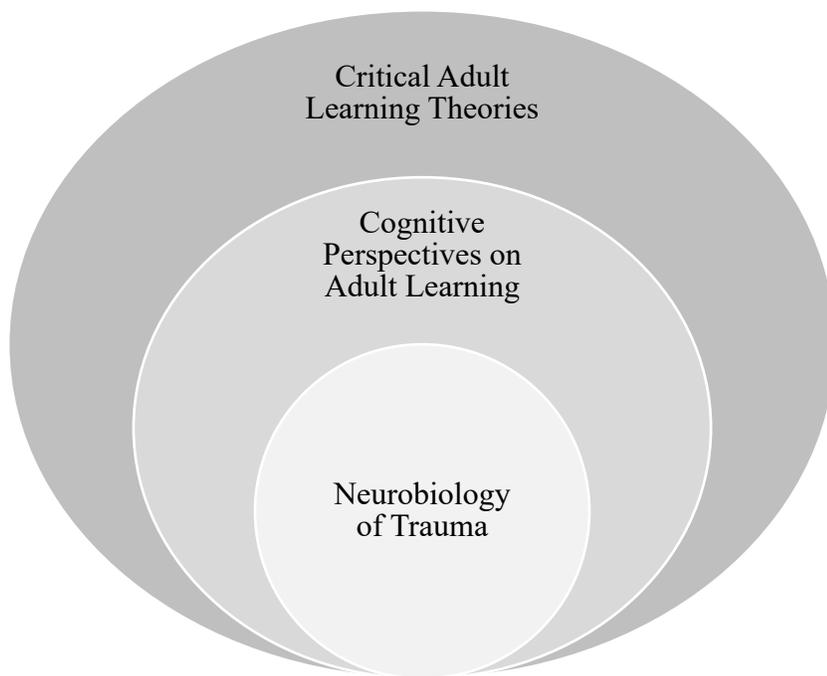


Figure 1. Visual representation of the current study’s theoretical framework.

Critical Theories in Adult Learning

Epistemologically, critical theorists reject the postpositivist/constructivist binary and believe that while realities are socially constructed and multiple truths exist, systems of oppression have tangible and meaningful impacts on people’s lives (Paul et al., 2005). One strand of critical theory focuses on the impact that the intersections of those power systems, including race, class, gender, and sexual orientation, have on individuals (Collins, 2015, 2017; Crenshaw, 1991). The interlocking nature of these systems means that the effects of race-based oppression cannot be separated from the effects of gender-based oppression, sexual orientation-based oppression, and so on (Combahee River Collective, 1995; Essed, 1996). Additionally, all of these systems of oppression both rely on and further perpetuate violence as a tool for control (Collins, 2017; Crenshaw, 1991).

One of adult learning theory's strongest ties to critical theory is through Freire (2000), who pioneered thinking and practice on critical pedagogy in adult education. Theorists have continued to explore adult learning through a critical lens by looking at additional contextual factors that influence learning (Merriam et al., 2007; Tisdell, 1993). These theories, including feminist pedagogies and multicultural pedagogy, interrogate the assumptions and structures upon which adult learning experiences are constructed (Caffarella & Olson, 1993; Merriam et al., 2007; Tisdell, 1998). The field of adult learning has been built on adult development theories created by white men based on research done on predominantly white men (Caffarella & Olson, 1993). This gives an incomplete picture of the learning experiences and needs of women, and by extension those who differ from the mainstream on gender identity, sexual orientation, and racial/ethnic identity. Broader educational practices, systems, and structures reproduce the hierarchy and oppression found in larger society based on what is considered knowledge, who has voice, and whose perspectives are valued (Cunningham, 1992; Tisdell, 1995).

Within feminist pedagogies of adult learning, structural models expand Freire's (2000) approach of critiquing the structural components of society to incorporate gender, race/ethnicity, and sexual orientation in addition to class (Hansman & Mott, 2010; Tisdell, 1998). Structural feminist pedagogies are concerned with knowledge production (who gets to create knowledge and what counts as knowledge) and how social structures impact learning (Tisdell, 1998). Psychological models of feminist pedagogy take a more individualistic view, focusing on how gender shapes the experiences and learning of individual women (Tisdell, 1998). Poststructural feminist pedagogy models combine aspects of both, focusing on the intersections of oppressive systems and the connection between individual experiences and those systems (Tisdell, 1998). In adult learning environments, poststructural feminist theorists highlight how power and

oppression affect learning at every level (Tisdell, 1995). This includes what is considered knowledge, who is considered an expert, whose ideas are valued, and who has a place in the classroom (Tisdell, 1995). Poststructural feminist pedagogies most closely align with the current study, given its concern with both individual and contextual elements of graduate student learning. However, the study only focused on how the environment affects academic functioning, not on effective teaching within the environment.

The dynamics of structural oppression play out in graduate education in a variety of ways. Higher education in the United States was designed for wealthy white men, and despite increases in access for women, people of color, and lower income students, inequities still exist (Harper, 2012; Hubain, Allen, Harris, & Linder, 2016; McCoy, Winkle-Wagner, & Luedke, 2015; Zhang, 2016). In fact, higher education institutions have continued to reproduce hierarchy and oppression such as racism, sexism, homophobia, and xenophobia into the present (Cottom, 2017; Karabel, 2005; Stevens, 2007; Tisdell, 1995).

Interlocking structures of oppression based on gender identity, sexual orientation, and race/ethnicity add to the student/professor power differentials already present in graduate education (Chapman & Sork, 2001; National Academies of Sciences, Engineering, and Medicine, 2018; Tisdell, 1993). For example, recent research has shown that white faculty members invest less time in mentoring students of color than their white peers and discuss the lack of preparation of students of color more than that of their white peers (McCoy et al., 2015). Graduate students from minoritized and/or marginalized groups have frequently reported identity-based microaggressions, isolation, betrayal, and negative judgment from their classmates and faculty members from dominant groups (Alexander & Hermann, 2015; Hubain et al., 2016).

People's experiences of oppression in larger society also impact their experiences in the learning environment, even when no specific person in the learning environment is actively mistreating them (Ahmed, 2012; Collard & Stalker, 1991). Systems of oppression operate independently of individual actions, and thus do not require actual acts of discrimination or oppression to perpetuate harm (Ahmed, 2012; Tisdell, 1993). Additionally, people's positionalities change from interaction to interaction because of the intersection of systems of power, meaning they can move in and out of privileged statuses based on how their identities connect to the larger systems (Tisdell, 1995, 1998). Even when power differentials are equalized in one context, the larger structures push back on that change (Cunningham, 1992). This reflects the nature of interlocking structures of oppression: their effects are constant and compound any other difficult or challenging experiences, including gender-based violence/harassment (Ahmed, 2012; Quiros & Berger, 2015). As such, critical scholars oppose the

...fragmented view, which considers different types of violence - child abuse, domestic violence, rape, torture, war - separately, and obscures the role played by racism, ableism, classism, and other forms of systemic discrimination, [and] disguise the enormity that might be visible if we viewed all forms of violence together. (Horsman, 2004, p. 135)

Cognitive Perspectives on Adult Learning

In addition to interlocking structures of oppression, individual factors related to cognitive architecture also impact graduate student learning. Two main components of cognitive architecture were applicable to the current discussion: memory and schemas (Merriam et al., 2007). Memory is the component of cognitive architecture that governs how the brain processes and stores information and knowledge (Sweller, 2012). Working memory processes environmental information and controls whether or not that information is transferred to long-

term memory (Sweller, 2012). When dealing with new information, working memory has a limited capacity in terms of the amount of information that it can process at a time and the length of time that information can be held (Sweller, 2012). Long-term memory houses the largest amount of information, although humans only have access to a small part of the information at any particular point in time (Sweller, 2012). Working memory controls the procedures for processing and recalling information, which are complex and largely unconscious (Merriam et al., 2007; Sweller, 2012).

Schemas, first conceptualized by Piaget to describe how children make sense of their environments, are structures the brain uses to translate information into knowledge, as well as to use the resulting knowledge (Crain, 2000; Merriam et al., 2007). Schemas are not static; they adapt and change as new information is acquired and interpreted (Merriam et al., 2007). These processes apply to both intentional, formal learning (such as discipline related knowledge) and learning from daily experiences and interpersonal interactions (Merriam et al., 2007; Sweller, 2012; Taylor, 2006).

Whereas the brain used to be considered a black box of information processing, advances in neuroscience and technology have provided more insight into the neural process of learning (Merriam et al., 2007; Taylor & Lamoreaux, 2008; Zull, 2006). The neocortex is the home of cognition and learning (Zull, 2006). This is where the brain synthesizes information and plans actions; scientists consider it the most conscious section of the brain (Taylor, 2006; Zull, 2006). Neurologically, the process of learning occurs when the brain creates new neural networks, or specific connective pathways between neurons (Taylor & Lamoreaux, 2008). The number and types of these connections grow and change over time (Taylor & Lamoreaux, 2008). The brain's ability to change existing neural networks and create new ones is termed *neural plasticity*; it is

the reason humans are able to learn and adapt throughout their lifetime (Cozolino & Sprokay, 2006; Taylor & Lamoreaux, 2008). Plasticity is strongest in childhood, meaning that early experiences have a large impact on learning and development (Cross et al., 2017). However, plasticity is present throughout the lifespan so that growth and change are always possible (Taylor & Lamoreaux, 2008).

Neurobiology of trauma. Gender-based violence/harassment and adverse childhood experiences (ACEs) may negatively impact graduate student academic functioning because of the neurobiological ways that trauma changes cognitive processes. In the current context, trauma refers to experiences that are perceived as threatening, provoke intense stress, and have lasting impacts on a person's functioning (Crosby, 2015). The hippocampus, prefrontal cortex (PFC), and amygdala are key components of the body's information processing and stress response systems (Anda et al., 2006; Cross et al., 2017). In their review of childhood trauma's impacts on neurological development, Cross and colleagues (2017) explained that "under normal neurobiological conditions, the hippocampus receives input regarding perceptual information ('who' and 'what'), and binds it to contextual information ('when' and 'where'), and the PFC facilitates future recollection of and attributions about that information ('why')" (p. 112). The PFC also regulates the amygdala and helps the hippocampus consolidate emotional and perceptual data (Cross et al., 2017). The hypothalamic-pituitary-adrenal (HPA) axis, along with the hippocampus, PFC, and amygdala, regulate the brain's response to stress and trauma (Anda et al., 2006; Cross et al., 2017).

Trauma changes the interactions between all the structures of the brain, which in turn alters the way information is encoded and processed (Anda et al., 2006; Cross et al., 2017; Perry, 2006). The brain shuts down higher-level functioning to focus resources on survival, including

activating the HPA axis, in a process called hypervigilance (Perry, 2006; Taylor, 2006). People who have been exposed to multiple traumas (such as ongoing child abuse) have additional and longer lasting impacts. They have cycled through hypervigilant states so frequently that their brains no longer accurately perceive stimuli or regulate responses (Perry, 2006). Neuroscientists call this “dysregulation of the HPA axis” (Anda et al., 2006, p. 175). One result of a dysregulated HPA axis is that those who have experienced multiple traumas frequently operate in a state of low-level fear even when no threat is present (Anda et al., 2006; Perry, 2006). Trauma thus impacts the ways that children and adults perceive experiences and organize the resulting information, which can lead to problems in multiple arenas including academic functioning (Anda et al., 2006; Perry, 2006).

Trauma, both prior and current, can significantly impact learning in several ways. Too much stress during early development negatively impacts neural plasticity (Cozolino & Sprockay, 2006). Additionally, the repeated activation of the HPA axis discussed above creates lasting changes in brain functioning, carrying the effects of childhood trauma into adulthood. More recent experiences of trauma also impact learning as a result of the brain’s response to danger. The brain mutes higher-level functions, such as logical reasoning and information processing, when responding to danger (Perry, 2006; Taylor, 2006). This, in turn, makes it more difficult for someone experiencing a trauma or remembering a trauma to input new information, recall existing information, and synthesize multiple pieces of information (Perry, 2006).

The neurobiology of trauma is often discussed in the context of survivors’ actions during a traumatic event or in recalling the details of a trauma (Campbell, 2012). However, it is extremely relevant to graduate student survivors’ academic functioning. Trauma’s direct impact on the part of the brain responsible for learning and cognition can negatively impact academic

performance (Perry, 2006). Trauma also leads to social and emotional reactions that can disrupt learning environments, leading the education system to exacerbate students' trauma (Kerka, 2002; Perry, 2006). Someone in a hypervigilant state, whether from past or present trauma, may respond to seemingly innocuous situations in socially or academically unacceptable ways (Perry, 2006). What might look like a lack of motivation or caring (academic disengagement) could actually be a trauma response (Kerka, 2002). When members of the education system punish that response instead of seeing it as a warning sign, the student's learning suffers (Kerka, 2002).

The following example illustrates the impact of trauma on academic functioning through both a cognitive architecture lens and a neurobiological lens. A graduate student who is being sexually harassed by a classmate would likely experience activation of the HPA-axis and diminished neocortex functioning when they have to see that person in class. In terms of cognitive architecture, those feelings of anxiety and stress would overwhelm their working memory capacity. This would diminish their working memory's ability to transfer new academic information to long-term memory or draw existing information from long-term memory. In neurobiological terms, the diminished neocortex functioning would impact their ability to encode and process information, therefore negatively impacting their academic learning. The activation of the HPA-axis might lead them to become upset in class or skip class altogether, resulting in academic disengagement. If the survivor had a history of prior gender-based violence/harassment or ACEs, their limbic system would be affected by those past experiences as well. This could exacerbate their feelings and behaviors. If the professor did not know about the harassment or the previous trauma, they might judge the survivor as an unfit student and exclude them from opportunities such as publication, resulting in the survivor's isolation from the department.

Review of the Literature

The unique context of graduate education in the United States means that graduate students experience gender-based violence/harassment differently than undergraduate students. Graduate programs are typically more academically rigorous than undergraduate programs, and both the quantity and type of work is different (Hyun et al., 2006). For example, graduate students have research, publishing, and teaching responsibilities that undergraduates do not (Hyun et al., 2006). Additionally, graduate students tend to be older and more likely to be partnered and/or have children than undergraduate students (Hyun et al., 2006). Graduate education also comes at a different cost, both in the price of attendance and in lost wages. Graduate students often have more interactions with professors and are more dependent on them for academic and professional success (National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016).

As discussed in the theoretical framework, the higher education system operates as a hierarchical and oppressive structure, both by extending larger society's power differentials and by creating new types of power differentials (Ahmed, 2012; Tisdell, 1993). The system of graduate education, in particular, is extremely hierarchical with great amounts of power held by a limited number of people (National Academies of Sciences, Engineering, and Medicine, 2018). Across academia, cisgender men hold more positions of power, including at the full professor level, departmental level, and dean level (National Academies of Sciences, Engineering, and Medicine, 2018). Certain fields, particularly science, technology, engineering, and math (STEM), remain male-dominated across all levels (National Academies of Sciences, Engineering, and Medicine, 2018). Women make up more than half of all graduate students but are underrepresented in top-tier doctoral programs and overrepresented in master's programs (Weeden, Thébaud, & Gelbgiser, 2017). Additionally, there are vast differences in enrollment

and completion by field of study, with women substantially underrepresented in STEM fields (Council of Graduate Schools, 2008; Okahana & Zhou, 2017). Women in STEM fields also report higher levels of sexual harassment than men in STEM fields and women in non-STEM fields (National Academies of Sciences, Engineering, and Medicine, 2018).

Societal power dynamics also directly impact teaching and learning in graduate education in complex ways. Students pay attention to racial, gender, and sexual orientation dynamics in the classroom, from the types of students who are heard and ignored to the types of examples used to illustrate points (Hall, 1982; Johnson-Bailey & Cervero, 1998; Tisdell, 1993).

Graduate students who experience gender-based violence/harassment during graduate school do so within the context described above. While campus sexual violence, and campus gender-based violence more largely, has become more commonly discussed over the past 15 years, the context has largely been focused on undergraduate students and their needs (Krebs et al., 2016; White House Task Force to Protect Students from Sexual Assault, 2014). The popular media did not highlight specific dynamics about graduate student experiences until the #MeTooPhD movement (Anderson, 2018; Korn, 2018; Qadir, 2018). Even then, the focus was on sexual harassment and sexual assault committed by professors and did not include the other types of gender-based violence/harassment graduate students experience. However, one of the most salient aspects of the broader public discussion of graduate student gender-based violence/harassment was the impact the experiences had on survivors' academic functioning (Anderson, 2018; Kelskey, 2017a; National Academies of Sciences, Engineering, and Medicine, 2018). The rest of this literature review is devoted to discussing what is known and what remains unknown about graduate student gender-based violence/harassment and its relationship to mental health and academic functioning.

Campus Gender-Based Violence/Harassment

The first large-scale studies on campus gender-based violence/harassment were in the 1980s: the 1982 Association of American Colleges and Universities report on sexual harassment (Hall, 1982) and the 1985 Ms. Magazine study on date rape (Sweet, 2012). Comprehensive studies on intimate partner violence and stalking, while still not as prevalent as those on sexual violence, became more prominent in the late 1990s (Fisher, Cullen, & Turner, 2000). Large-scale studies on all of these issues have continued into the present (Cantor et al., 2015; Krebs et al., 2016).

Despite the large amount of data available, gleaning a clear picture of the prevalence of gender-based violence/harassment on campus is challenging. Researchers approach data collection from different perspectives, with different goals, and using different methodologies, definitions, and instruments (Fedina, Holmes, & Backes, 2018; Muehlenhard, Peterson, Humphreys, & Jozkowski, 2017; Palmer & Perrotti, 2016). For example, although the Sexual Experiences Survey (Koss et al., 2007; Koss & Gidycz, 1985) is one of the most commonly used instruments to measure sexual violence, a systematic review of studies found that just under half (16 out of 34) of the included articles used that instrument (Fedina et al., 2018). This means a substantial number of studies measured sexual violence differently. Intimate partner violence, stalking, and harassment have even more measurement differences because there is not a clear measurement standard (Kilpatrick, 2004; Schwartz, 2000; Tjaden, 2004). Even when studies use similar instruments or definitions, they may ask respondents to report on different time frames, which affects how prevalence rates should be compared (Muehlenhard et al., 2017; Palmer & Perrotti, 2016). These measurement differences make determining overall prevalence rates, or comparing prevalence rates across studies, difficult (De Heer & Jones, 2017; Fedina et al., 2018;

Linder & Harris, 2017; Muehlenhard et al., 2017). For transparency in this literature review, prevalence rates from existing research will be reported in ranges.

Sexual harassment. Whereas the majority of research on campus gender-based violence has been conducted with undergraduate students, research on sexual harassment (including gender harassment) has generally included a mixture of graduate and undergraduate students. Research on the prevalence of sexual harassment has remained consistent over the years, with between 44% and 64% of graduate student women and between 30% and 48% of graduate student men reporting at least one incident of sexual harassment (Brooks & Perot, 1991; Cantor et al., 2015; Rosenthal et al., 2016). Graduate students were more likely to report being sexually harassed by other students than by faculty or staff members, although some studies have shown that graduate students experience higher rates of faculty/staff sexual harassment than undergraduates (Cantor et al., 2015; National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). The vast majority of incidents of sexual harassment involve gender harassment, such as sexist hostility and crude remarks (National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016).

The prevalence of sexual harassment differs significantly by gender (Cantor et al., 2015; National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). When gender is analyzed as binary (woman or man), women experience the highest levels of sexual harassment (National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). When trans and gender non-conforming students are included in the analysis, they experience the highest levels of sexual harassment, followed by cisgender women and then cisgender men (Cantor et al., 2015).

Students in certain disciplines seem to have a higher risk of experiencing sexual harassment than other students. Medical and law students reported higher rates of sexual harassment than graduate students in other disciplines (National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). Students in STEM fields (not including medicine) reported higher rates of sexual harassment than non-STEM majors, although these results included graduate and undergraduate students (National Academies of Sciences, Engineering, and Medicine, 2018).

Broad sexual assault. Between 0.5% and 8% of women reported experiencing a completed rape since entering college, with most studies reporting rates of 2% or higher (Cantor et al., 2015; Fedina et al., 2018). Between 1% and 4% of participants reported experiencing an attempted rape since entering college (Fedina et al., 2018). Studies of unwanted sexual contact that excluded rape showed prevalence rates among women of between 2% to 34%, with the majority finding prevalence rates over 20% (Cantor et al., 2015; Fedina et al., 2018; Palmer & Perrotti, 2016). These studies were either of undergraduate students only, or combined graduate and undergraduate data in reporting.

Some studies reported multiple types of sexual assault in one combined category, as opposed to individual types of sexual assault. While this tactic does not give the specific detail that individual category reporting does, it also does not prioritize or rank the severity of one type of sexual assault over another (Muehlenhard et al., 2017). That approach also more closely mimics institutional policies and prevention education, which commonly define sexual violence as a range of behaviors. Generally, this category of broad sexual assault includes forced penetration or attempted penetration as well as other forms of unwanted sexual contact (Fedina et al., 2018; Krebs et al., 2016). Between 6% and 44% of college women have reported

experiencing broad sexual assault since entering college (Cantor et al., 2015; Conley et al., 2017; Fedina et al., 2018; Krebs et al., 2016).

Most of the knowledge regarding the prevalence of sexual violence on college campuses is based on predominantly undergraduate samples (Linder & Harris, 2017). While this information is helpful in illustrating the types of experiences students may enter graduate school with, it does not shed light onto what those students experience over the course of their graduate career. Of the studies that have included graduate students, only one reported graduate student rates separately from undergraduate rates (Cantor et al., 2015). Results from that study indicated that graduate students experience less sexual violence at their institution than undergraduates across all gender identities. The specific rates were 23% for undergraduate women versus 9% for graduate women, 5% for undergraduate men versus 2% for undergraduate men, and 24% for trans and gender non-conforming undergraduates versus 16% for trans and gender non-conforming graduate students (Cantor et al., 2015).

Intimate partner violence and stalking. The research on the prevalence of campus intimate partner violence and stalking is not as robust as campus sexual violence. As with sexual violence, prevalence rates range based on the definition of intimate partner violence used in a specific study. A multi-institution study that used a restrictive definition, only including threatening, controlling, and/or physically abusive behavior, showed overall prevalence rates of around 10% (Cantor et al., 2015). Studies that used more expansive definitions, especially those that included psychological abuse, showed rates between 31% and 80% (Amar & Gennaro, 2005; Graham, Jensen, Givens, Bowen, & Rizo, 2019; Wood et al., 2018). In fact, participants in those studies reported psychological abuse most frequently and nearly half reported experiencing

more than one type of intimate partner violence (Amar & Gennaro, 2005; Porter & Williams, 2011; Wood et al., 2018).

Much like sexual violence and sexual harassment, the rates of intimate partner violence varied greatly by gender and student status (Cantor et al., 2015). Trans and gender non-conforming and undergraduate students reported the highest rates of intimate partner violence since enrolling at their institution, with 23% of trans and gender non-conforming undergraduates and 18% of trans and gender non-conforming graduate students reporting experiencing intimate partner violence (Cantor et al., 2015). For studies reporting current year prevalence rates, between 5% and 9% of women and 3% to 8% of men reported experiencing intimate partner violence (Krebs et al., 2016).

Information on intimate partner violence among graduate students is severely lacking. Cantor and colleagues (2015) were the only researchers to report rates for graduate students separately, and they found that graduate students reported less intimate partner violence than undergraduates across all gender identities. This study, however, used a more restrictive definition of intimate partner violence that did not include psychological aggression (Cantor et al., 2015). Given that graduate students are more likely to be in intimate relationships than undergraduate students, it is surprising that more research has not looked at the rates of intimate partner violence among graduate students.

As with intimate partner violence, the research on stalking among college students is lacking. One of the earliest large-scale studies on college student stalking indicated that 13% of the respondents reported being stalked within the current academic year (Fisher et al., 2000). More recent studies have shown rates between 4% and 39%, depending on the definition of stalking used (Cantor et al., 2015; Edwards et al., 2015; Griner et al., 2017). Trans and gender

non-conforming students are at the highest risk for stalking, with between 12% and 16% reporting stalking (Cantor et al., 2015).

Only one study reported graduate student rates separately; it showed that overall, graduate students experienced lower rates of stalking than undergraduate students (Cantor et al., 2015). Within the graduate student sample, trans and gender non-conforming students had the highest rates of stalking (8%), followed by cisgender women (5%; Cantor et al., 2015). That same study showed that sexual minority graduate students were more likely than heterosexual graduate students to be stalked (Cantor et al., 2015).

Special Considerations. When examining how gender-based violence/harassment that occurs during graduate school impacts students, it is important to consider the broader context of violence and trauma in students' lives. Specifically, adverse childhood experiences, polyvictimization, revictimization, and being a member of a marginalized identity group shape how gender-based violence affects survivors. As such, a brief overview of these special considerations is provided below.

Adverse Childhood Experiences (ACEs). In a seminal study, researchers found that exposure to abuse and household dysfunction in childhood negatively impacted multiple categories of adult health and morbidity (Anda et al., 1999; Felitti et al., 1998). This study, referred to as the CDC-Kaiser ACE Study, was the first of its kind to show the lasting impacts of childhood trauma on adult functioning and has provided the framework for a growing field of inquiry (Centers for Disease Control and Prevention & Kaiser Permanente, 2016; Larkin, Shields, & Anda, 2012). The longitudinal, cohort study was based on a sample of over 17,000 adult participants in a Californian HMO between 1995 and 1997 (Centers for Disease Control and Prevention & Kaiser Permanente, 2016). The participants were predominantly middle aged,

white, and college educated (Anda et al., 1999; Felitti et al., 1998). Researchers analyzed participants' medical records, as well their responses to questionnaires on adverse childhood experiences (ACEs) and health-related behaviors and problems (Anda et al., 1999; Felitti et al., 1998). Follow-up studies have also been conducted with the CDC-Kaiser ACE sample to look at longitudinal impacts of ACEs (Larkin et al., 2012).

The ACE component of the CDC-Kaiser questionnaire assessed 10 abuse, neglect, and household challenges that occurred before age 18: psychological abuse, physical abuse, sexual abuse, household member who was mentally ill, household member who abused substances, household member who went to prison, a mother/stepmother who was physically abused, parental divorce/separation, emotional neglect, and physical neglect (Anda et al., 1999; Centers for Disease Control and Prevention & Kaiser Permanente, 2016; Felitti et al., 1998). ACE scores reflect the number of types of ACEs experienced, not the number of incidents and are calculated by adding the number of *yes* answers to the questions (Larkin et al., 2012). Emotional and physical neglect were added during Wave 2 of the study, thus research using Wave 1 data has ACE scores ranging from 0-8 and research using Wave 2 data uses scores ranging from 0-10 (Centers for Disease Control and Prevention & Kaiser Permanente, 2016).

Two-thirds of participants experienced at least one ACE, almost 40% experienced two or more ACEs, and 13% experienced 4 or more ACEs (Centers for Disease Control and Prevention & Kaiser Permanente, 2016). Researchers found that participants who had experienced one ACE were significantly more likely to have experienced additional ACEs (Anda et al., 1999; Felitti et al., 1998). Additionally, researchers found that all 10 ACEs were significantly interrelated with each other, even when controlling for demographic characteristics (Dong et al., 2004). Those who reported one ACE were between 2% and 18% more likely to report having experienced

another ACE and over 50% of participants reported three or more additional ACEs (Dong et al., 2004).

Researchers also found a dose-response relationship between ACEs and adult health problems (Felitti et al., 1998). The more ACEs a participant had experienced, the more likely they were to have health problems and negative health-related behaviors (Anda et al., 1999; Felitti et al., 1998). Those who experienced four or more ACEs were significantly more likely to have health problems, disease, and multiple risk factors for death than those who had none (Felitti et al., 1998). For example, those with four or more ACEs were 4.6 times more likely to have experienced two or more weeks of depression in the past year and 12.2 times more likely to have ever attempted suicide (Felitti et al., 1998).

One of the most important findings from the ACE studies is that individual childhood experiences do not have to be clinically traumatic to have lasting consequences (Anda et al., 1999; Centers for Disease Control and Prevention & Kaiser Permanente, 2016; Felitti et al., 1998). Instead, it is the combination of multiple stressful/adverse events that leads to negative adult outcomes (Felitti et al., 1998; Larkin et al., 2012).

Researchers not involved with the CDC-Kaiser ACE study have continued to research ACEs, often looking at vulnerable or specific subpopulations (Larkin et al., 2012). Some researchers continued to use instruments based on the CDC-Kaiser study, whereas others expanded the concept of childhood adversity by using different instruments or adding additional types of experiences (Boynton Health Service, 2018; Karatekin, 2018; Karatekin & Ahluwalia, 2016; Windle et al., 2018). While this makes it challenging to compare rates across studies, it does help add to the overall knowledge base regarding ACEs.

Over the past several years, researchers and student affairs professionals have become interested in how ACEs impact college student functioning. Estimates of the prevalence of ACEs among college students range across studies, depending on type of ACE questionnaire used and sample characteristics. Broadly, between 50% and 70% of college students have experienced one ACE, between 30% and 50% have experienced more than one ACE, and between 12% and 20% have experienced four or more ACEs (Boynton Health Service, 2018; Karatekin, 2018; Windle et al., 2018). The studies echo the CDC-Kaiser study findings concerning the prevalence and co-occurrence of ACEs (Centers for Disease Control and Prevention & Kaiser Permanente, 2016). While graduate students are included in some overall estimates (Boynton Health Service, 2018), no study reported graduate student findings separately.

Polyvictimization. For the purposes of the current study, polyvictimization is used specifically to refer to participants who experienced more than one type of gender-based violence/harassment during adulthood. Previous research has shown that campus gender-based violence/harassment often co-occurs, with a substantial number of students having experienced more than one type of violence during their college career (Banyard et al., 2017; Hines, Armstrong, Reed, & Cameron, 2012; Rosenthal et al., 2016). Nearly 20% of undergraduate students reported experiencing two or more forms of gender-based violence/harassment in the previous six months (Banyard et al., 2017) and almost 45% reported experiencing two or more forms since enrolling at their institution (Rosenthal et al., 2016). Results from a longitudinal study of a combined graduate and undergraduate sample indicated that men who were sexually assaulted were significantly more likely to have experienced intimate partner violence and women who were sexually assaulted were significantly more likely to have been stalked (Hines et al., 2012).

Revictimization. One of the most significant predictors of experiencing gender-based violence is having previously experienced gender-based violence or other forms of trauma (Conley et al., 2017; Fisher et al., 2000; Messman-Moore & Long, 2003). These prior experiences could be from childhood, adolescence, or adulthood. Multiple studies have shown that around 20% of college students who experienced childhood abuse went on to experience sexual or intimate partner violence in college (Messman-Moore, Long, & Siegfried, 2000; Miron & Orcutt, 2014). Studies have shown those who experienced childhood and adolescent victimization were at greater risk of experiencing sexual assault (Conley et al., 2017; Mellins et al., 2017; Messman-Moore et al., 2000) and intimate partner violence (Smith, White, & Holland, 2003) while in college. Additionally, even though women are significantly more likely than men to experience sexual assault in college, men who have previously experienced sexual assault have the same risk as women for future assault (Conley et al., 2017).

Trauma can be both “sociopolitical and interpersonal” (Quiros & Berger, 2015, p. 150). While the current study focused on the interpersonal trauma of gender-based violence/harassment and ACEs, the author also recognizes structural oppression as sociopolitical trauma (Quiros & Berger, 2015). People who are oppressed and mistreated because of their race/ethnicity, gender identity, and/or sexual orientation *and* who have experienced gender-based violence/harassment and/or ACEs have in fact experienced multiple traumas.

Marginalized groups. Much of the knowledge about campus gender-based violence/harassment comes from studies of mostly white, cisgender women (Coulter et al., 2017; Fedina et al., 2018; Linder & Myers, 2017). This focus renders the experiences of other survivors invisible and obscures the broader dynamics of gender-based violence/harassment. Survivors

with multiple marginalized identities are especially likely to fall through the cracks and not be represented in research or practice (Coulter et al., 2017; Linder & Harris, 2017).

The research that is available shows that issues of campus gender-based violence/harassment disproportionately impact marginalized groups, including students of color, trans and gender non-conforming students, and gay, lesbian, and bisexual students (Cantor et al., 2015; Linder & Harris, 2017; National Academies of Sciences, Engineering, and Medicine, 2018). Transgender students have consistently been found to be at highest risk for experiencing gender-based violence/harassment (Cantor et al., 2015; Coulter et al., 2017; Mellins et al., 2017). Gay, lesbian, and bisexual students (graduate and undergraduate students combined) reported higher levels of sexual harassment than heterosexual students, with over half reporting at least one incident during graduate school (Cantor et al., 2015). Sexual minority students also have a higher risk of experiencing sexual violence (Coulter et al., 2017; De Heer & Jones, 2017; Edwards et al., 2015; Porter & Williams, 2011), intimate partner violence (Edwards et al., 2015; Graham et al., 2019; Porter & Williams, 2011), and stalking (Cantor et al., 2015; Edwards et al., 2015) as compared to heterosexual students. Broadly, studies of racial and ethnic differences in rates of gender-based violence and harassment have been scarce and inconsistent (Coulter et al., 2017). A recent study showed that undergraduate students with multiple marginalized identities, as compared to students with one or no marginalized identity, had higher odds of being sexually assaulted (Coulter et al., 2017).

The interlocking nature of structures of oppression means that people with multiple marginalized identities experience gender-based violence/harassment in the context of other forms of violence and oppression and the impact of one form of oppression cannot be disentangled from another (Combahee River Collective, 1995; Crenshaw, 1991; National

Academies of Sciences, Engineering, and Medicine, 2018). It is therefore important to use a critical and intersectional lens when studying gender-based violence/harassment. This approach intentionally includes systems of domination that perpetuate and uphold violence (including higher education) into the analysis (Coulter et al., 2017; Linder & Harris, 2017).

Taking all of the above studies into consideration, unwanted sexual contact appears to be the most prevalent type of sexual violence experienced during college (Fedina et al., 2018; Krebs et al., 2016; Mellins et al., 2017). Despite the limited amount of research, intimate partner violence and stalking are also common (Cantor et al., 2015; Edwards et al., 2015; Wood et al., 2018). Psychological abuse was the most frequently reported type of intimate partner violence among diverse groups of students (Amar & Gennaro, 2005; Porter & Williams, 2011; Wood et al., 2018). Additionally, trans and gender non-conforming students (Cantor et al., 2015; Coulter et al., 2017) and gay, lesbian, and bisexual students (De Heer & Jones, 2017; Edwards et al., 2015) are at high risk for experiencing sexual harassment, sexual violence, intimate partner violence, and stalking. More research is needed to understand the rates of gender-based violence/harassment among racially/ethnically minoritized students (Coulter et al., 2017). While little is known specifically about graduate students, it appears that they experience gender-based violence/harassment at lower rates than undergraduates (Cantor et al., 2015). However, it is also important to note that the rates of gender-based violence/harassment among undergraduate students are relevant to understanding the level of prior adult victimization graduate students may have experienced.

Academic Functioning

Despite being often discussed as a consequence of trauma (Horsman, 2004; Kerka, 2002; Windle et al., 2018), researchers have paid scant attention to the academic impacts of gender-

based violence/harassment or ACEs on college students. Additionally, researchers have conceptualized academic functioning in multiple ways, making synthesizing the knowledge difficult. Researchers commonly use measures of academic performance, such as GPA or course grades (Mengo & Black, 2016; Patterson Silver Wolf, Perkins, Van Zile-Tamsen, & Butler-Barnes, 2018), retention (Duncan, 2000), or academic-related behaviors (Banyard et al., 2017; Huerta, Cortina, Pang, Torges, & Magley, 2006). GPA is a one-dimensional measure of academic functioning and does not give much insight into survivors' experiences and challenges navigating their academic environment. Using retention as a measure of academic functioning creates methodological challenges because it is difficult understand the specific reasons why students drop out and whether they re-enroll elsewhere at a later date. Some research has indicated that undergraduate gender-based violence/harassment survivors are more likely to drop out of college, meaning that survivors who enroll in graduate school may be higher-functioning than those who do not (Mengo & Black, 2016). However, researchers have not investigated how additional gender-based violence/harassment experiences impact those survivors who go on to attend graduate school.

As outlined in the Theoretical Framework section, trauma has substantial and lasting impacts on the cognitive centers of the brain, which affects how information is processed and retrieved (Anda et al., 2006; Perry, 2006). This means that gender-based violence/harassment that occurs during graduate school can impact academic performance through inhibited learning processes (Perry, 2006). The specific impact of childhood trauma, including chronic stress from multiple ACEs, on adult learning processes is not clear. Some studies, however, have shown that memory function is impaired in adults who experienced multiple ACEs (Anda et al., 2006; Bremner, Elzinga, Schmahl, & Vermetten, 2007).

Cognitive processing related to academic information is not the only way that trauma, whether experienced during childhood or adulthood, affects academic functioning. Academic disengagement is also an important component of academic functioning. For students with histories of trauma and victimization, disengagement behaviors are likely trauma responses instead of lack of care, motivation, or preparedness (Kerka, 2002). This is true regardless of the timing of the trauma; survivors can function effectively for a period of time and then their performance and engagement may drop (Horsman, 2004). Students who do not see faculty and instructors as trustworthy will likely not disclose to them (Horsman, 2004). Those faculty members and instructors, therefore, will not understand the root cause of student survivors' behavior (Horsman, 2004). The trauma likely has a larger impact when students experience the institutional systems or classroom environment as retraumatizing (Horsman, 2004; Rosenthal et al., 2016; Smith & Freyd, 2013).

A combination of challenges in both cognitive functioning and emotional processing likely causes difficulties in academic functioning. The graduate student academic context is complicated and involves extensive independent work, heavy reliance on advisors, and high expectations for research, teaching, and publication (Hyun et al., 2006; National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). Studies that show the most promise in understanding the impact of gender-based violence/harassment have used a more holistic view of academic functioning. Researchers have included multiple academic-related behaviors and perceptions, including dropping classes, missing classes, avoiding the perpetrator, lower class participation, and difficulties concentrating in class (Hill & Silva, 2005; Huerta et al., 2006; Krebs et al., 2016; National Academies of Sciences, Engineering, and Medicine, 2018).

Sexual harassment and academic functioning. Studies of women who have experienced sexual harassment in college have shown that sexual harassment operates as a chronic stressor that results in increased psychological distress and academic disruption (Hall, 1982; Hill & Silva, 2005; Huerta et al., 2006; National Academies of Sciences, Engineering, and Medicine, 2018). Researchers have developed a model that suggests the increase in distress leads to lower academic satisfaction, higher disengagement, and ultimately lower academic performance (Huerta et al., 2006). A multi-institutional study of graduate, professional, and undergraduate women showed that students who had experienced sexual harassment by faculty members reported significantly higher levels of academic disengagement behaviors than those who had not (National Academies of Sciences, Engineering, and Medicine, 2018). The specific behaviors that were different, however, varied by major suggesting that disciplinary and departmental culture has an impact on how students experience sexual harassment (National Academies of Sciences, Engineering, and Medicine, 2018).

In a study of undergraduate students, researchers reported gender and sexual orientation differences in how students responded to sexual harassment (Hill & Silva, 2005). Gender and sexual minority students were most likely to report the sexual harassment disrupted their lives, including academically (Hill & Silva, 2005). Cisgender women were more likely to report disruptions than cisgender men (Hill & Silva, 2005).

Sexual violence and academic functioning. Experiencing sexual violence during college has been linked to lower GPA (Mengo & Black, 2016; Patterson Silver Wolf et al., 2018). Additionally, some research has indicated that experiencing sexual violence in college is associated with higher rates of dropping out (Mengo & Black, 2016).

When looking at academic disengagement behaviors, studies show differences by type of behavior. Broadly, between 7% and 42% of sexual assault survivors reported the incident negatively impacted their academics during the year it happened (Boynton Health Service, 2018; Krebs et al., 2016). Specifically, between 4% and 11% wanted to drop a class or change their schedule and between 2% and 9% actually did (Krebs et al., 2016; Lindquist et al., 2013). Between 6% and 22% thought about taking time off of school, transferring, or dropping out (Krebs et al., 2016). Those who were raped reported higher disengagement rates than those who experienced sexual battery (Krebs et al., 2016). Unwanted sexual contact and unwanted sexual intercourse were associated with lower academic efficacy, lower institutional commitment, lower scholastic conscientiousness, and higher academic stress (Banyard et al., 2017).

Intimate partner violence, stalking and academic functioning. Research on the relationship between intimate partner violence and stalking on academic functioning is limited, although several recently published studies have made important advances in understanding the dynamics. Students who experienced intimate partner violence and/or stalking reported lower academic efficacy, lower institutional commitment, lower scholastic conscientiousness, and higher stress (Banyard et al., 2017). Additionally, students who experience intimate partner violence were more likely to report that the experiences interfered with their academic functioning than those with no victimization experience (Arttime et al., 2018; Wood et al., 2018). Research has also shown that among campus intimate partner violence survivors, those who experienced more severe intimate partner violence showed increased academic difficulties as compared to those with less severe experiences (Wood et al., 2018).

Polyvictimization and academic functioning. In one of the only studies examining academic functioning in the context of polyvictimization, researchers found it was significantly

negatively associated with academic functioning in undergraduate students (Banyard et al., 2017). The researchers operationalized academic functioning as academic efficacy, institutional commitment, scholastic conscientiousness, and academic stress (Banyard et al., 2017). Lower scores on all but academic stress were associated with difficulties in functioning; high levels of academic stress were associated with difficulties in functioning (Banyard et al., 2017).

Undergraduates who experienced multiple types of gender-based violence/harassment (defined as unwanted sexual contact, unwanted sexual penetration, intimate partner violence, and stalking) had worse academic functioning in all areas (Banyard et al., 2017). Additionally, those who experienced all four types of violence had significantly worse functioning than those who experienced one, two, or three types (Banyard et al., 2017).

ACEs and academic functioning. The research on the relationship between ACEs and specific academic or learning outcomes among adults is limited. However, researchers have found an association between ACEs and a number of academic problems in children (Bethell, Newacheck, Hawes, & Halfon, 2014; Burke, Hellman, Scott, Weems, & Carrion, 2011). In one study, 3% of children with no ACEs exhibited learning/behavioral problems, whereas 21% of children with between one and three ACEs and 51% of children with four or more ACEs exhibited learning/behavior problems (Burke et al., 2011). Another study showed that children who experienced multiple ACEs were more than twice as likely to have repeated a grade and two and a half times less likely to be consistently engaged in school than those who had not experienced any ACEs (Bethell et al., 2014). Resilience, however, lessened the strength of those associations (Bethell et al., 2014).

The few researchers who have investigated the impacts of specific types of childhood victimization on academic functioning in college have found conflicting results (Baker et al.,

2016; Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009; Himelein, 1995; Jordan, Combs, & Smith, 2014). Some studies indicated childhood or adolescent sexual abuse is associated with lower undergraduate GPA (Baker et al., 2016; Jordan et al., 2014), whereas other studies showed no significant association (Elliott et al., 2009; Himelein, 1995). Several longitudinal studies of undergraduates demonstrated that those who experienced childhood physical, sexual, and emotional abuse had an increased likelihood of dropping out (Baker et al., 2016; Duncan, 2000). However, a different study showed that a history of childhood sexual abuse was not associated with dropping out (Himelein, 1995).

Graduate students and academic functioning. Studies investigating the relationship between gender-based violence/harassment and broad academic functioning are extremely limited. While existing studies indicate that experiencing gender-based violence/harassment negatively impacts academic functioning (Arttime et al., 2018; Banyard et al., 2017; Krebs et al., 2016; Lindquist et al., 2013; Mengo & Black, 2016), the researchers did not specifically focus on graduate students. Most of the writing on previous trauma and adult learners has been in the context of adult literacy and adult basic education (Horsman, 2004; Kerka, 2002; Perry, 2006). Even though graduate students do not have the same circumstances or needs as many types of adult learners (given they already possessed high levels of academic functioning to enroll in graduate school), it is still probable that experiencing violence and trauma negatively impacts their learning and functioning. Research that combines an academic engagement perspective (Huerta et al., 2006) with the academic and professional experiences of graduate students (National Academies of Sciences, Engineering, and Medicine, 2018) is needed to better understand the impacts of gender-based violence/harassment on graduate student academic functioning.

Negative Affect

Depression, anxiety, and stress are interrelated but distinct types of negative affect (Lovibond & Lovibond, 1995). Depression is a negative mood state characterized by feelings of sadness, worthlessness, hopelessness, and low motivation (Antony, Bieling, Cox, Enns, & Swinson, 1998; Lovibond & Lovibond, 1995). Anxiety is characterized by panic, fear, and increased physical arousal that can be either be situation specific or more generalized (Antony et al., 1998; Lovibond & Lovibond, 1995). Clinical and non-clinical experiences of depression and anxiety are each thought to be on a continuum, differentiated by symptom severity and length and not by absolute presence or absence (Lovibond & Lovibond, 1995). As opposed to anxiety, stress is a lower-level state characterized by tension, low threshold for frustration, and ongoing arousal (Antony et al., 1998; Lovibond & Lovibond, 1995). Despite its similarity to anxiety, multiple studies have confirmed that stress is a separate construct (Antony et al., 1998; Brown, Chorpita, Korotitsch, & Barlow, 1997; Lovibond & Lovibond, 1995). Because measures of depression, anxiety, and stress are often moderately correlated in research, even though they measure different constructs, researchers believe the three types of negative affect have common causes but are not overlapping (Lovibond & Lovibond, 1995).

ACEs and negative affect. Researchers have found that ACEs are associated with negative mental health outcomes of undergraduate students (Karatekin, 2018; Karatekin & Ahluwalia, 2016; Windle et al., 2018). In a longitudinal study of undergraduate students at one institution, Karatekin (2018) found that students in the high ACE group (two or more ACEs) scored higher on depression, anxiety, and suicidal ideation measures at both Time 1 and Time 2 than those in the low ACE group. They also had a higher rate of mental health deterioration and were twice as likely to have a diagnosed depressive or anxiety disorder at Time 2 when they did

not have any at Time 1 (Karatekin, 2018). Using a measure that included environmental and community ACEs, researchers found that higher numbers of ACEs were associated with more stress, worse mental health, and less social support (Karatekin & Ahluwalia, 2016).

The role of stress in the relationship between ACEs and mental health in college students is less clear, with some studies showing that stress mediates the relationship (Karatekin, 2018) and others indicating an independent relationship (Karatekin & Ahluwalia, 2016). Researchers have postulated that the perceived impact of stress operates differently from the number of life stressors, and that the number of stressors is what significantly impacts the pathway between ACEs and mental health in college students (Karatekin, 2018). To date, no studies have specifically incorporated graduate student ACEs and mental health.

Gender-based violence/harassment and negative affect. Studies have shown that experiencing gender-based violence/harassment in college increases negative affect and mental health concerns (Amar & Gennaro, 2005; Lindquist et al., 2013). In a racially diverse sample of undergraduate women, intimate partner violence was related to increased depression and anxiety (Amar & Gennaro, 2005). Those who had experienced at least one type of intimate partner violence had significantly higher depression and anxiety levels than non-victims; those who experienced more than one type of intimate partner violence had significantly higher depression and anxiety levels than those who experienced one type (Amar & Gennaro, 2005). In a racially diverse sample of campus sexual assault survivors, survivors were more likely to report higher depression and PTSD scores (Lindquist et al., 2013). Intimate partner violence is also associated with higher levels of PTSD and depression (Wood et al., 2018). Both graduate and undergraduate gender-based violence/harassment survivors have shown significantly higher rates

of diagnosed mental health problems (including depression and anxiety), significantly higher rates of depression/anxiety symptoms, and significantly higher stress levels (Artime et al., 2018).

Academic functioning and negative affect. Mental health concerns are increasingly common among college students, both graduate and undergraduate (Baker et al., 2016; Boynton Health Service, 2018; Hyun et al., 2006; Kernan et al., 2011). A study of Minnesota postsecondary students found that 41% of students reported problems with mental health issues such as depression or anxiety in past 12 months (Boynton Health Service, 2018). Of those, 55% said their mental health concerns negatively impacted their academics (Boynton Health Service, 2018). That same study showed that 74% of students reported problems with stress and of those, 49% said stress impacted their academics (Boynton Health Service, 2018).

Whereas many studies of college students approach stress as a negative, some research has indicated that stress can be positive (Frazier et al., 2018). Researchers have theorized that stress has a curvilinear relationship with academic functioning, where experiencing lower levels of stress enhances academic functioning and experiencing higher levels of stress decreases academic functioning (Frazier et al., 2018). Students who reported that stress negatively impacted their academic functioning had lower protective factors (coping self-efficacy, lower self-reported resilience, and less social support) than those who experienced stress without negative academic impacts (Frazier et al., 2018).

Graduate students. Most research on the impacts of depression, anxiety, and stress has been conducted on undergraduate students or extremely specialized groups of graduate students (Hyun et al., 2006; Kernan et al., 2011). In one of the few studies focused on mental health of a disciplinary diverse group of graduate students, Kernan and colleagues (2011) looked at the perceived impact of mental health concerns on academic performance of health sciences

graduate students. They found that three-quarters of the respondents reported stress as a significant health concern, and 27% of those said the stress negatively impacted their academics (Kernan et al., 2011). Over one-quarter (28%) of the respondents reported depression/anxiety/seasonal affective disorder to be a significant health concern; of those, 44% said those problems negatively impacted their academics (Kernan et al., 2011).

Depression, anxiety, and stress are separate but related mental health concerns that impact large numbers of college students (Boynton Health Service, 2018; Hyun et al., 2006; Kernan et al., 2011). Research indicates that while college students in general have high levels of depression, anxiety, and stress, those who have experienced trauma such as gender-based violence/harassment or childhood adversity have even higher levels (Amar & Gennaro, 2005; Artime et al., 2018; Lindquist et al., 2013; Wood et al., 2018). Depression and anxiety have been correlated with academic difficulties, while the relationship between stress and academic functioning is more complex (Boynton Health Service, 2018; Frazier et al., 2018; Kernan et al., 2011). Additional research is needed to better understand negative affect in graduate students, as well as its relationship to gender-based violence/harassment and academic functioning.

Mindfulness

As discussed above, gender-based violence/harassment and ACEs have been linked to negative outcomes such as increased negative affect (Artime et al., 2018; Karatekin, 2018) and difficulties in academic functioning (Baker et al., 2016; Banyard et al., 2017). Trauma researchers have long been interested in the potential for protective factors to counteract the negative consequences of trauma (Tubbs et al., 2018; Whitaker et al., 2014) At the same time, higher education researchers have been investigating factors that may help increase college student success (Shapiro et al., 2011). Researchers in both areas have investigated mindfulness,

with results indicating its potential to improve mental health as well as academic outcomes (Shapiro et al., 2011; Tubbs et al., 2018). As such, mindfulness may play an important role in the relationship between gender-based violence/harassment, ACEs, negative affect, and academic functioning among graduate students.

Mindfulness represents the quality of an individual's intentional consciousness related to what is happening in the present, as opposed to their processing or evaluation of the occurrence (Brown & Ryan, 2003; Kabat-Zinn, 2003). It is multi-faceted and encompasses enhanced attention and awareness (Brown & Ryan, 2003). Awareness operates in the background of consciousness, whereas attention is the process of intentionally focusing on something that is within awareness (Brown & Ryan, 2003). Because consciousness and cognition are separate processes within the brain, mindfulness operates beyond the biases and preconceptions of cognition (Brown & Ryan, 2004). This way of thinking, and of thinking about thinking, alters neural patterns and brain structures (Siegel, 2007). Much as trauma can impact brain structures in negative ways, mindfulness practices can impact brain structures in positive ways (Siegel, 2007).

Because of that separation, mindfulness shows promise as a protective factor for the effects of trauma on cognition (Shapiro et al., 2011; Thompson, Arnkoff, & Glass, 2011). Researchers have theorized that mindfulness increases resilience to PTSD because it directly addresses the core features of PTSD such as experiential avoidance, intrusive thoughts, and emotional numbing (Thompson et al., 2011). Survivors with higher levels of mindfulness are more likely to focus on being present and nonjudgmentally aware of their thoughts and feelings as opposed to actively avoiding them (Thompson et al., 2011). This process has theoretical applications to other mental health issues beyond PTSD, such as depression and anxiety.

Mindfulness is not a binary construct that is either present or absent (Kabat-Zinn, 2003). It operates on a continuum and “...we are all mindful to one degree or another, moment by moment” (Kabat-Zinn, 2003, pp. 145–146). Higher levels of mindfulness have been associated with positive benefits in multiple areas of functioning (Brown & Ryan, 2004; Kabat-Zinn, 2003). Mindfulness benefits well-being not by changing negative situations, but by changing how a person experiences that situation and how it influences their thoughts and behaviors (McCracken, Gauntlett-Gilbert, & Vowles, 2007). This is particularly salient to the context of gender-based violence/harassment that occurs during graduate school. Survivors cannot erase what they have experienced, or in the case of ongoing harassment and abuse, the perpetrator’s continued actions. However, higher levels of mindfulness may help them lessen the negative consequences of the experiences on their lives.

While much of the recent research on mindfulness in college students has focused on testing interventions to increase mindfulness, the current study did not take that route. Instead, it explored the relationship between survivors’ current levels of dispositional mindfulness, difficulties in academic functioning, and adult gender-based violence/harassment experiences.

Gender-based violence/harassment, ACEs, and mindfulness. In regard to mindfulness in the context of gender-based violence/harassment and ACEs, most researchers have focused on the effectiveness of mindfulness interventions on improving mental health outcomes such as PTSD symptomology, stress, and depression (see Ortiz & Sibinga, 2017 for an extensive review). Much less research exists on whether mindfulness levels differ between those who have histories of trauma as compared to those without trauma, and the impact of any differences on survivor functioning. The few studies that do exist, however, show promising results. For example, findings from a study of adults with ACE histories demonstrated a significant

relationship between mindfulness and physical health (Whitaker et al., 2014). As was expected based on previous research, adults with more ACEs had poorer physical health (Whitaker et al., 2014). However, adults with higher levels of mindfulness had higher physical health than those with lower levels across all ACE categories (Whitaker et al., 2014). These results indicate mindfulness can serve as a protective factor that mediates the impacts of trauma.

Research on college students, trauma, and mindfulness is even more limited than that on general adult populations. In one of the only studies investigating gender-based violence and mindfulness, researchers found significant associations between dispositional mindfulness levels and mental health among trauma survivors (Tubbs et al., 2018). Although the researchers operationalized trauma broadly, gender-based violence/harassment occurring within the last year was included (Tubbs et al., 2018). Within the entire sample, trauma exposure was significantly associated with higher levels of anxiety, and higher levels of mindfulness were associated with lower levels of anxiety (Tubbs et al., 2018). Among trauma survivors, mindfulness moderated the relationship between trauma and anxiety but not between trauma and depression (Tubbs et al., 2018). The authors theorized that mindfulness and anxiety may be strongly linked because while the nature of anxiety is future-focused, people with higher levels of mindfulness are more focused on the present (Tubbs et al., 2018).

Despite these promising studies, more research is needed that looks at existing mindfulness levels in those who have experienced gender-based violence/harassment and ACEs. The complex nature of the neurobiology of trauma necessitates a clear understanding of the process through which gender-based violence/harassment and ACEs alter baseline states of mindfulness and how mindfulness impacts experiences of and reactions to those traumas.

Academic functioning and mindfulness. Higher education professionals are increasingly looking to mindfulness as a pathway to greater student success, including adjustment and academic performance (Hall, 1999; Mrazek, Franklin, Phillips, Baird, & Schooler, 2013; Schwager, Hülshager, & Lang, 2016). Much of this research has been conducted with undergraduate students and has focused on meditation as the vehicle to mindfulness (Shapiro et al., 2011). Shapiro, Brown, and Astin (2011) conducted a review of the link between meditation and academic functioning. They found multiple studies that linked meditation to increases in attention, information processing, and overall academic achievement (Shapiro et al., 2011). For example, undergraduate students who received ongoing meditation training had higher semester and cumulative GPAs than those who did not (Hall, 1999).

According to the review, research that explains the process through which mindfulness improves cognitive processing, and whether that improvement directly leads to improved academic achievement, is limited (Shapiro et al., 2011). One study found that general mindfulness training increased working memory capacity and reading comprehension for undergraduate students taking the GRE (Mrazek et al., 2013). Reduced levels of mind wandering mediated the impact of mindfulness on cognitive performance among those whose minds frequently wandered, suggesting that one of the pathways between mindfulness and increased performance is through reductions in distracting thoughts (Mrazek et al., 2013).

While increasing numbers of dissertations have included mindfulness and adult learners, few peer-reviewed studies have been focused on mindfulness and the academic functioning of graduate students. Researchers found that among a group of first year masters' students, mindfulness was inversely associated with counterproductive academic behaviors (Schwager et al., 2016). Those with lower levels of mindfulness were more likely to display behaviors such as

missing class and trouble focusing (Schwager et al., 2016). These results are promising and highlight the need for further research.

Negative affect and mindfulness. As opposed to looking directly at links between mindfulness and academic functioning, many researchers have looked at the role of mindfulness in alleviating stress, depression, and anxiety symptoms within the context of graduate education. This route has been especially popular in studies of graduate students in helping professions (Beck, Verticchio, Seeman, Milliken, & Schaab, 2017; Stillwell et al., 2017; Yusufov et al., 2018). Since mental health concerns, particularly depression, anxiety, and stress, have been shown to negatively impact academic functioning (Boynton Health Service, 2018), it is possible that mindfulness could impact academic functioning through its impact on negative mental health symptoms.

Researchers conducted an evidence-based practice review of eight stress reduction programs tested on health sciences graduate students (Stillwell et al., 2017). All of the programs included a mindfulness component, and all were found to significantly reduce perceived stress (Stillwell et al., 2017). Conversely, a recent meta-analysis on stress in graduate students indicated that mindfulness-based interventions were associated with decreased anxiety but had no impact on stress (Yusufov et al., 2018). Because of the wide variety of mindfulness-based interventions, it is possible that the studies within each review were substantially different from each other, resulting in different findings (Yusufov et al., 2018).

Other studies of both undergraduate and graduate students have shown that mindfulness interventions are effective at reducing anxiety symptoms. For example, a meta-analysis of studies on the impact of mindfulness meditation interventions on undergraduate student anxiety showed significant and moderate-to-large effect sizes on reducing anxiety (Bamber & Morpeth,

2019). In a group of second year medical students, a mindfulness-based stress reduction intervention showed significantly lower anxiety levels within the experimental group even while the anxiety of the control group increased (Rosenzweig, Reibel, Greeson, Brainard, & Hojat, 2003). Additionally, over half of those who went through the intervention rated themselves as better at handling stress.

Researchers have found that interventions are as successful with graduate students as they are with undergraduates (Yusufov et al., 2018), lending credence to the idea that findings from mindfulness studies of undergraduates may also apply to graduate students. However, none of these studies reported mindfulness levels at any point, so there is no information as to how the interventions actually impacted mindfulness levels or how mindfulness levels related to anxiety levels. More research needs to be conducted into the association between mindfulness levels (independent of any intervention) and anxiety, with a specific focus on graduate students.

Overall, mindfulness shows promise as a protective factor against the harmful impacts of gender-based violence/harassment on negative affect and academic functioning among graduate students. Further research is needed, however, to understand the context and mechanisms of the relationship. Specifically, studies on the relationship between dispositional mindfulness and trauma is needed. Additionally, research should focus more directly on linking mindfulness to academic functioning among graduate students. As such, the current study focused on the state of mindfulness, not interventions to change or enhance mindfulness.

Conclusion

Existing research indicates graduate students experience less current gender-based violence/harassment than undergraduate students (Cantor et al., 2015). Graduate students, however, may be more likely to have higher cumulative levels of adult gender-based

violence/harassment because of their undergraduate experiences. To date, researchers have not looked at the prevalence of ACEs or prior adult victimization among graduate students.

Broad samples of students have reported a wide range of academic difficulties as a result of experiencing gender-based violence/harassment (Banyard et al., 2017; Boynton Health Service, 2018). Graduate students specifically have reported that experiencing sexual harassment in graduate school lead to difficulties in academic functioning (Kelskey, 2017a; National Academies of Sciences, Engineering, and Medicine, 2018). While not directly studied, research on ACEs and the neurobiology of trauma indicate that childhood and adulthood victimization occurring before graduate school can still negatively impact academic functioning in graduate school (Cross et al., 2017; Perry, 2006). It is unclear, however, how the cumulative nature of trauma impacts difficulties in academic functioning in the graduate education context.

Research also shows that gender-based violence/harassment survivors are likely to experience negative affect (depression, anxiety, stress) as a consequence of those experiences (Amar & Gennaro, 2005; Artime et al., 2018). Separate studies, including both undergraduate and graduate student samples, have shown that negative affect is associated with difficulties in academic functioning (Boynton Health Service, 2018; Kernan et al., 2011).

Research on mindfulness in survivors of gender-based violence/harassment (independent of interventions to increase mindfulness) is lacking but suggests that a higher level of mindfulness can serve as a protective factor (Tubbs et al., 2018). Researchers have studied mindfulness as a tool to reduce negative affect or improve academic functioning among both undergraduate and graduate students with positive results (Bamber & Morpeth, 2019; Mrazek et al., 2013; Rosenzweig et al., 2003; Tubbs et al., 2018). These findings indicate mindfulness

could play a positive mediating role between gender-based violence/harassment experiences and academic functioning in graduate students.

Gaps the Study Addressed

Graduate students are an understudied population in gender-based violence/harassment research. With its focus on the gender-based violence/harassment experiences of graduate students and the impact of those experiences on academic functioning, the current study addressed several gaps in the literature. It extended the work of Cantor and colleagues (2015) by examining the prevalence of gender-based violence/harassment (specifically broad sexual assault, intimate partner violence, stalking, and sexual harassment) within a random sample of diverse graduate students. The study also included ACEs and prior adult victimization, which have not previously been looked at among graduate students.

Links between gender-based violence/harassment and academic functioning have mainly been conducted with undergraduate students and have shown that adult and childhood victimization is associated with lower GPA, lower retention, and decreased academic engagement (Banyard et al., 2017; Lindquist et al., 2013; Mengo & Black, 2016). Some researchers have looked at the impact of revictimization on academic functioning, but generally only in relation to child sexual assault and college sexual assault (Baker et al., 2016; Jordan et al., 2014). Graduate students operate in a different academic context than undergraduate students, including increased academic rigor, dependence on a small number of faculty, and the independent nature of the academic work (National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). Existing knowledge based on undergraduate students, therefore, cannot be automatically applied to graduate students. This study addressed that gap. Additionally, the current study extended research on gender-based violence/harassment and

academic functioning to see if prior trauma, mindfulness, and negative affect mediate the relationship.

Chapter 3: Methodology

This chapter specifies the research design and research questions that guided the current study. The data used in this study were originally collected as part of an institutional gender-based violence campus climate survey. That study's sampling frame, data collection procedures, and measures will be described. The choice of descriptive analyses, regression, and independent sample *t*-tests will be justified, and the specific variables involved will be explained. The chapter will conclude with a discussion of the study's ethical considerations.

Research Design

The current study employed a cross-sectional, nonexperimental design using secondary survey data. The survey data were collected as part of an anonymous institutional climate survey on gender-based violence/harassment conducted at a large, urban, research university in the fall of 2018. The author served as a member of the climate survey team. The university's IRB approved the larger study as well as the use of its data in the current study.

Research Questions

The research questions that guided the study were as follows:

RQ1: What is the prevalence of gender-based violence/harassment and adverse childhood experiences (ACEs) among graduate students at an urban research university? (descriptive)

RQ2: How do adult gender-based violence/harassment experiences and ACE history impact *mindfulness* levels among graduate students? (regression)

RQ3: How do adult gender-based violence/harassment experiences and ACE history impact *negative affect* levels among graduate students? (regression)

RQ4: Among students who experienced gender-based violence/harassment in graduate school, do *mindfulness* levels differ among those who experienced difficulties in academic functioning versus those who did not? (group comparison)

RQ5: Among students who experienced gender-based violence/harassment in graduate school, do *negative affect* levels differ among those who experienced difficulties in academic functioning versus those who did not? (group comparison)

Sampling

Graduate students ($N = 3,499$) from a large, urban, research university were randomly selected to participate in the anonymous, online survey. The response rate was 24%, which is in line with previous campus climate surveys conducted at the institution and falls in the middle of reported ranges of other institutions' online campus climate surveys. For example, the AAU Campus Climate Survey was conducted at 27 institutions and reported response rates between 7% and 53%, with the majority of institutions falling between 15% and 30% (Cantor et al., 2015). Within that study, the overall response rate for graduate/professional students was 23% (Cantor et al., 2015).

Data Collection

The climate survey team used REDCap (Research Electronic Data Capture), a secure web-based data capture application hosted by the university, to collect the data (Harris et al., 2009). The REDCap system allowed for completely anonymous data collection (it did not capture IP addresses or other identifying information) and secure data storage (Harris et al., 2009). The team distributed the survey based on the Tailored Design Method guidelines (Dillman, Smyth, & Christian, 2014). Randomly selected participants received an initial email that introduced the survey, described its importance, and provided the survey link. The email

also described the participation incentives: an opportunity to win one of 20 \$100 gift cards or a free semester of parking. Since the survey was anonymous, participants who wanted to enter the drawing submitted their email address in a separate form that was not connected to the survey results. The research team sent three reminder emails, each one week apart, encouraging selected students to participate and reminding them of the incentives. A fourth and final reminder email was sent the day before the survey closed. Each email also provided recipients with information on how to opt out of the study and who to contact with questions.

Clicking on the survey link took participants to the informed consent page, which contained a detailed description of the survey that reinforced its anonymous and voluntary nature and outlined potential risks and benefits of participation. The page also contained a link to campus and community gender-based violence resources. Participants who clicked that they agreed to participate and that they were at least 18 years of age began the survey; those who indicated they did not agree were taken to a resource page. The survey contained 108 items. See Appendices A-E for survey materials, including the survey items.

Measures

Measures used in the current study are described below. The complete measures can be found in Appendix C.

Sexual Experiences Survey-Victimization (SES-V). A modified version of the nationally normed Sexual Experiences Survey-Victimization (SES-V; Koss et al., 2007) was used to assess sexual victimization. The original SES was groundbreaking in the way it measured sexual violence through using nonjudgmental, behaviorally specific language as opposed to official reports or legal definitions (Koss & Oros, 1982). The SES definitions were clear and comprehensive, encompassing both legally defined sexual violence and experiences that

survivors and advocates considered sexual violence but did not always meet legal definitions (Koss & Gidycz, 1985; Koss & Oros, 1982). The instrument also included both perpetration and victimization formats and asked questions related to types of sexual violence experiences and tactics used by perpetrators (Koss & Gidycz, 1985; Koss & Oros, 1982). Researchers have found that the behaviorally-specific wording pioneered by the SES results in more accurate prevalence rates than relying on law enforcement reports or legally based definitions (Fisher et al., 2000). This type of wording is now the standard in survey research on gender-based violence/harassment (Koss et al., 2007; National Academies of Sciences, Engineering, and Medicine, 2018; Swartout et al., 2018).

Given the instrument's popularity among researchers, Koss and colleagues (2007) updated the SES to retain its strengths and improve upon its weaknesses. Key strengths are outlined above; weaknesses of the original included heterosexist bias, outdated terminology, and inconsistent conceptualizations of reliability and validity (Koss et al., 2007). The researchers changed the survey wording to be gender neutral, as well as updated and clarified the terminology around sexual behaviors and alcohol and substance use (Koss et al., 2007). The traditional view of the SES was a latent measurement model, which assumed the presence of a latent factor causing an interrelatedness of subscale items (Koss et al., 2007). The researchers stated the more accurate conceptualization is an induced model, where the individual items combine to form a new variable that encompasses a set of experiences that are not dependent on each other or an unobserved variable (Koss et al., 2007). As such, they stated that internal consistency measures should not be used to evaluate the reliability of the survey (Koss et al., 2007). The revised SES-V has continued to be widely used in sexual violence research,

particularly among college students (Fedina et al., 2018). It was therefore appropriate to use data collected via this measure in the study.

The SES-V asks participants if they have experienced unwanted sexual contact, attempted or completed oral penetration without consent, attempted or completed vaginal penetration without consent, and attempted or completed anal penetration without consent (Koss et al., 2007). In order to account for survey fatigue, the climate survey team created a modified version of the SES-V that measured when an experience happened as opposed to how many times it happened. For each item, respondents were asked to indicate if they had (a) never experienced the situation described, (b) experienced it prior to enrolling in graduate school, or (c) experienced it while enrolled in graduate school. The modified SES-V included questions about seven types of behaviors, with six questions about each type of behavior, for a total of 42 questions. For this study, responses indicating experiences either before or during graduate school were combined into an *adult sexual victimization* variable.

Gender-Based Violence/Harassment Questionnaire (GBVHQ). Because the SES-V (Koss et al., 2007) only measured sexual violence, the research team created an additional series of 14 questions that measured multiple forms of gender-based violence/harassment, including sexual violence, intimate partner violence, stalking, and sexual harassment. Existing research and exemplar climate study instruments guided the item development (Cantor et al., 2015; Krebs et al., 2016; National Academies of Sciences, Engineering, and Medicine, 2018; Wood, Sulley, Kammer-Kerwick, Follingstad, & Busch-Armendariz, 2017). Similar to the SES-V, item wording was behaviorally-specific and encompassed experiences that met legal definitions as well as those that did not rise to that level. Gender-based violence/harassment prevention and response experts reviewed and provided feedback on potential items. The items included in the

final measure reflected the input of those experts. The following is an example of a GBVHQ item: *Has anyone with academic power or authority over you (e.g. a professor, advisor, dissertation chair, TA, etc.) made obscene, inappropriate, or offensive remarks about your body or sexual activities, made unwanted sexual advances toward you, or used their position to offer special treatment or threaten punishment in exchange for sexual favors?*

For each item, respondents indicated if they had (a) never experienced the situation described, (b) experienced it prior to enrolling in graduate school, or (c) experienced it while enrolled in graduate school. For this study, responses regarding sexual assault, intimate partner violence, stalking, and sexual harassment experiences that occurred either prior to or during graduate school were combined to form an *adult victimization* variable with levels for each type of violence/harassment.

Adverse Childhood Experiences (ACE) Scale. ACE scales are designed to assess the prevalence of significant adverse childhood experiences that have been linked to negative adult outcomes (Anda et al., 2006; Felitti et al., 1998). The climate study team chose a widely used version of the ACE scale (ACEs Too High, 2011) based on the original ACE study (Felitti et al., 1998). It included 10 dichotomous (*yes/no*) items measuring the occurrence of the following experiences before age 18: emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, problematic alcohol/drug use in the household, a household member who was mentally ill, witnessing domestic violence, a household member who was incarcerated, and parental divorce/separation (ACEs Too High, 2011). The climate study team added three questions that related to peer sexual assault, teen dating violence, and stalking to collect information on adolescent gender-based violence victimization. Additionally, the climate study team updated the wording of certain items to be more in line with current language as used by

the Centers for Disease Control ACE data collection (Centers for Disease Control and Prevention, 2009). ACE surveys have been used in a wide range of contexts, including college student and adult community populations, and were therefore appropriate for use in the current context (Dong et al., 2004; Karatekin, 2018; Windle et al., 2018).

The following is an example of a question from the ACE measure: *Did a parent or other adult in the household often or very often push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?* (ACEs Too High, 2011). Following traditional ACE scoring procedures (Anda et al., 2006; Felitti et al., 1998), *yes* answers were summed to form a total score. This resulted in a minimum possible score of 0 and a maximum possible score of 13, with higher scores equaling more types of ACEs.

Mindful Attention Awareness Scale (MAAS). The MAAS is a nationally-normed measure that assesses individual levels of mindfulness (Brown & Ryan, 2003). The MAAS measures the foundational and core elements of mindfulness: attention to and awareness of the present situation (Brown & Ryan, 2003). In this conceptualization, mindfulness relates to the quality of an individual's consciousness of what is happening in the present as opposed to their processing or evaluation of the occurrence (Brown & Ryan, 2003; Kabat-Zinn, 2003). The MAAS does not include outcomes associated with mindfulness such as gratitude, empathy, or acceptance (Brown & Ryan, 2003).

Brown and colleagues (2003) created the initial MAAS item pool using the extant literature, existing scales, and professional experience. They then refined and eliminated items using expert review, multiple stages of inter-rater analysis, and pilot testing (Brown & Ryan, 2003). They conducted an exploratory factor analysis, which showed a strong one-factor solution comprised of 15 items (Brown & Ryan, 2003). Brown and colleagues (2003) conducted

subsequent confirmatory factor analyses with both college student and adult populations that confirmed the one-factor solution and showed high internal consistency levels (Cronbach's alphas of .82 and .97, respectively) and high test-retest reliability. Six additional studies utilizing a total of 1,253 college students and adults showed adequate convergent and discriminant validity with existing scales (for additional details of these studies, see Brown & Ryan, 2003). The construction and extensive validation of the MAAS using both college students and adults made it an appropriate measure to use in the current study.

The MAAS is comprised of 15 items, including items such as *I could be experiencing some emotion and not be conscious of it until some time later* and *I find myself doing things without paying attention* (Brown & Ryan, 2003). The items are measured on a 6-point Likert-type scale from 1 (*almost always*) to 6 (*almost never*); higher scores represent higher levels of mindfulness (Brown & Ryan, 2003).

Depression Anxiety Stress Scales (DASS). The short form of the DASS was used to measure depression, anxiety, and stress (Lovibond & Lovibond, 1995). The DASS was developed and tested on non-clinical populations to assess three negative emotional states: depression, anxiety, and stress (Lovibond & Lovibond, 1995). Depression is broadly conceptualized as loss of self-esteem, motivation, and hope for future life satisfaction (Lovibond & Lovibond, 1995). The anxiety measure encompasses the spectrum from ongoing anxiety to acute fear, and also includes situational anxiety (Lovibond & Lovibond, 1995). The DASS differentiates stress from anxiety by conceptualizing stress as a “state of persistent arousal and tension with a low threshold for becoming upset or frustrated” (Lovibond & Lovibond, 1995, p. 342). The stress component was particularly salient for the current study because it mirrors the

impacts of trauma and victimization described in the neurobiology of trauma literature (Anda et al., 2006; Cross et al., 2017; Perry, 2006).

The DASS is unique because it measures the three states within the same 42-item instrument without overlapping items (Lovibond & Lovibond, 1995). Internal consistencies for each scale were high in non-clinical populations: coefficient alphas for depression = .91; anxiety = .84; and stress = .90 (Lovibond & Lovibond, 1995). Lovibond and Lovibond (1995) also conducted both principal components factor analysis and confirmatory factor analysis of the measure. Because stress emerged as a separate factor from anxiety in early testing, it was retained and confirmed as a separate factor in subsequent testing (Lovibond & Lovibond, 1995). The confirmatory factor analysis showed that a two-factor model (depression and anxiety) had a significantly better fit with the data than a one factor model, and that a three-factor model (depression, anxiety and stress), had a smaller but still significantly better fit than the two-factor model (Lovibond & Lovibond, 1995). The three-factor model was confirmed in additional studies (Brown et al., 1997; Henry & Crawford, 2005). The DASS also showed adequate convergent and discriminant validity with commonly used measures such as the Beck Depression Inventory and the Beck Anxiety Inventory (Brown et al., 1997; Lovibond & Lovibond, 1995).

To reduce survey fatigue, the climate survey team used the short form of the DASS, which consists of 21 items taken from the full version of the DASS (Psychology Foundation of Australia, 2018). The DASS-21 has been shown to have high internal consistency using a non-clinical population, with Cronbach's alpha for depression = .88; anxiety = .82; and stress = .90 (Henry & Crawford, 2005). Additionally, the three-factor model was confirmed in the analysis of the shorter form (Henry & Crawford, 2005). The DASS-21 instructs participants to rate their experiences of each symptom during the past week, on a Likert-type scale from 0 (*did not apply*

to me at all) to 3 (*applied to me very much, or most of the time*). The following items are representative of those in the instrument: *I couldn't seem to experience any positive feeling at all* and *I found it difficult to relax* (Lovibond & Lovibond, 1995). Responses for each scale are added to achieve a specific scale score; total scores can be obtained by adding all item responses together (Psychology Foundation of Australia, 2018). Higher scores correspond to higher levels of depression, anxiety, stress, or total negative affect.

Demographic Questions. In the demographic section, participants self-described their gender identity, sexual orientation, and race/ethnicity using a combination of pre-existing and open response options. The gender identity question asked participants which option(s) best described their gender identity. Options included: transgender woman; transgender man; cisgender woman; cisgender man; genderqueer, gender non-conforming, or non-binary; questioning; decline to state; and self-identify. A separate question asked participants to select the sex they were assigned at birth; options included: female, male, and other. The sexual orientation question asked participants which option(s) best described their sexual orientation. Options included: gay, lesbian, bisexual, asexual, pansexual, heterosexual/straight, and self-identify. The race/ethnicity question asked participants which option(s) best described their race/ethnicity. Options included: American Indian or Alaska Native, Asian, Black/African American, Hispanic/Latinx, Middle Eastern or North African, Native Hawaiian/Other Pacific Islander, White/Caucasian, and self-identify. All self-identify options asked participants to describe their identity.

Difficulty in Academic Functioning Scale (DAFS). The climate survey team designed a scale to measure multiple difficulties in academic functioning that have been commonly discussed in both the college student engagement and gender-based violence/harassment

literature (Appleton, Christenson, & Furlong, 2008; Baker et al., 2016; Kelskey, 2017b; Kerka, 2002; Krebs et al., 2016; Mengo & Black, 2016; National Academies of Sciences, Engineering, and Medicine, 2018). The scale was comprised of three constructs: academic disengagement, departmental isolation, and poor academic performance. Academic disengagement was conceptualized as decisions made by the survivor, either consciously or unconsciously, to reduce or stop participation in course-related activities (Hill & Silva, 2005; Kerka, 2002; Krebs et al., 2016). Academic isolation included both intentional choices made by the survivor to withdraw from activities, as well as consequences faced by the survivor that resulted in their exclusion from resources and opportunities (Kelskey, 2017b; National Academies of Sciences, Engineering, and Medicine, 2018). Poor academic performance was operationalized as doing poor work, not turning in assignments, and decreased grades/GPA (Baker et al., 2016; Mengo & Black, 2016). The climate survey team intentionally chose wording and situations that were relevant to graduate student experiences in order to increase construct validity. Additionally, gender-based violence/harassment response and prevention experts reviewed the items prior to their inclusion in the final instrument.

The scale consists of 12 items that ask about the frequency of specific behaviors using a Likert-type scale from 1 (*never*) to 5 (*most of the time*). The hypothesized scale structure includes three subscales, with five items loading onto Academic Disengagement, four onto Academic Isolation, and three onto Poor Academic Outcomes. Higher scores represent increased difficulty in academic functioning. Only participants who reported experiencing gender-based violence/harassment during graduate school were prompted to answer these questions. The question stem was: *As a result of these experiences, how often have you...?* Sample items

included: *Experienced delays in your degree completion timeline* and *Avoided informal departmental or professional events such as networking sessions, career talks, happy hours, etc.*

Variables

Adult gender-based violence/harassment score. This continuous variable was created by combining and scoring the *adult victimization* responses to the SES-V and GBVHQ. First, dichotomous variables (1 = *yes*, 0 = *no*) were created for each type of gender-based violence/harassment: broad sexual assault, intimate partner violence, stalking, and sexual harassment. Respondents who answered *yes* to any of the SES-V items or the GBVHQ sexual violence item (item d) were coded as 1 for *broad sexual assault*. Only responses to items from the GBVHQ were used to create the remaining categories. Respondents who answered *yes* to any of the intimate partner violence items (items e and f) were coded as 1 for *intimate partner violence*; those who answered *yes* to any of the stalking items (items g, h, i) were coded as 1 for *stalking*; and those who answered *yes* to any of the sexual harassment items (a, b, c) were coded as 1 for *sexual harassment*. Similar to the ACE scoring procedure described above, the dichotomous variables representing types of violence were then summed to form an adult gender-based violence/harassment total score (Banyard et al., 2017). This resulted in a minimum possible score of 0 and a maximum possible score of 4, with higher scores equaling more types of gender-based violence/harassment experienced in adulthood.

ACE score. ACE score was a continuous variable measured using the modified Adverse Childhood Experiences (ACE) scale described above (ACEs Too High, 2011).

Difficulty in Academic Functioning. Difficulty in academic functioning was a continuous variable measured by the total score on the DAFS described above.

Mindfulness. Mindfulness was a continuous variable measured by mean scores on the MAAS described above (Brown & Ryan, 2003).

Negative Affect. Negative affect was a continuous variable measured by the total score on the DASS described above (Lovibond & Lovibond, 1995). The use of the total DASS score in the model does not indicate a belief that depression, anxiety, and stress are the same construct. Multiple studies, as discussed in the Measures section of this chapter, have determined they are three separate but correlated constructs that likely have a common cause (Brown et al., 1997; Henry & Crawford, 2005; Lovibond & Lovibond, 1995). The author made the choice to include the overarching *negative affect* construct, as opposed to the individual *depression*, *anxiety*, and *stress* constructs, for model simplification purposes.

Gender Identity. Gender identity was a categorical variable measured by the gender identity and sex assigned at birth questions described above. Participants who selected *female* as their sex assigned at birth and *cisgender woman* as their gender identity were coded as *cisgender woman*. Those who selected *male* as their sex assigned at birth and *cisgender male* as their gender identity were coded as *cisgender man*. Participants who did not indicate the sex they were assigned at birth were coded into the gender identity category they checked. Those who checked more than one gender identity category were coded into *genderqueer*, *gender non-conforming*, or *non-binary*. Those who checked *self-identify* were coded into an existing category that matched their description. Specific group frequencies are displayed in Table 1 in Chapter 4. The *male* or *female transgender* categories were combined with the *genderqueer*, *gender non-conforming*, or *non-binary* category due to small numbers in each of the groups. The category was renamed *trans* and *gender non-conforming*. Thus, the gender identity groups used in the analysis were *Trans and gender non-conforming*, *Cisgender women*, and *Cisgender men*.

Sexual Orientation. Sexual orientation was a categorical variable measured by the sexual orientation question described above. Participants were coded into the sexual orientation category they checked. Those who checked more than one category were coded into *multi*. Those who checked *self-identify* were coded into an existing category that matched their description; if no category existed, they were coded into a *self-identify* category. Individual group frequencies are displayed in Table 1 in Chapter 4. Due to small group sizes, those identifying as gay, lesbian, bisexual, asexual, pansexual, and self-identify were combined to form a new *sexual minority* variable. Thus, the sexual orientation groups used in the analysis were *Sexual Minority* and *Straight/heterosexual*.

Race/Ethnicity. Race/ethnicity was a categorical variable measured by the race/ethnicity question described above. Participants were coded into the race/ethnicity category they checked. Those who checked more than one category were coded into *Multiracial*. Those who checked *self-identify* were coded into an existing category that matched their description. Due to small group sizes for many of the race/ethnicity categories (individual group frequencies can be found in Table 1 in Chapter 4), *American Indian/Alaska Native*, *Asian*, *Black/African American*, *Hispanic/Latinx*, *Middle Eastern/North African*, and *Native Hawaiian/Other Pacific Islander* were combined to form a new *People of Color* category. Thus, the race/ethnicity groups used in the analysis were *People of Color*, *White*, and *Multiracial*.

Data Analysis

This section provides an overview of the data cleaning and assumption testing process, as well as the descriptive, regression, and *t*-test analyses. All procedures were conducted using SPSS version 24. The details of all procedures are provided in Chapter 4.

Data cleaning and assumptions. To begin the process of cleaning and testing the data against the assumptions for OLS regression and independent sample *t*-tests, the author analyzed the data to determine patterns of missingness. After incomplete cases were removed from the sample, scale items that were missing at random or completely at random were replaced using regression mean imputation (Cole, 2008; Sterner, 2011). Ten extreme MAAS and DASS outliers were removed based on Cook's D *z*-scores above 5 (Osborne, 2017). A power analysis using G*Power software suggested a sample size of 55 for a multiple regression with a medium effect size ($f^2=0.15$), $\alpha = .05$, and power of 0.80 using 5 predictors (Faul, Erdfelder, Lang, & Buchner, 2009). The final sample size of this study ($n = 684$) exceeded that suggestion.

Statistical analyses. Cronbach's alpha for each scale (MAAS, DASS, and DAFS) was computed, as were overall mean scores and mean scores by key grouping variables. Correlational analyses between the scales and the continuous independent variables (adult gender-based violence/harassment score and ACE score) were conducted.

Frequency counts of gender-based violence/harassment and ACE experiences were computed in order to answer Research Question 1. As the study used a critical theoretical lens, these analyses were conducted by gender identity, sexual orientation, and race/ethnicity groupings. A series of two OLS regressions were used to investigate Research Questions 2 and 3. OLS regression is an analysis commonly used to explore how two or more independent variables impact a dependent variable (Tabachnick & Fidell, 2012). The first analysis regressed MAAS score onto gender-based violence/harassment score, ACE score, gender identity, sexual orientation, and race/ethnicity. The second analysis regressed DASS score onto the same variables. Given the small sample size of participants who completed the DAFS, Research Questions 4 and 5 were addressed using two independent sample *t*-tests. *T*-tests are often used to

explore the mean difference between two different groups on a specific score (Field, 2013). In this study, the two groups were participants whose gender-based violence/harassment experiences in graduate school never led to academic functioning difficulties and those whose experiences at least occasionally led to difficulties. One independent samples *t*-test was used to compare group means on MAAS score and another *t*-test was used to compare group means on DASS score.

Ethical Considerations

Studying gender-based violence/harassment through survey research has multiple ethical considerations, including privacy and sensitive content (Schwartz, 2000). The climate survey team took several steps to address these and other concerns. The institution's IRB approved the original study. To encourage students to feel safe reporting their true feelings and experiences, as well as to eliminate any possibility of specific student experiences being reported without their knowledge, the survey was completely anonymous. The instrument did not collect identifying information or IP addresses. Students entered their email addresses for the incentive drawing into a form that was not connected to the survey, and that step was completely optional. To address concerns about the sensitive and potentially triggering content of the survey, the survey introduction and informed consent documents outlined the type of questions participants would be asked (see Appendices A and B). No questions were mandatory, and respondents could close the survey at any time. Campus and community resources were provided with the survey introduction as well as on the survey completion page. Previous research has shown that gender-based violence surveys using this type of structure are not overly distressing to participants (Freyd, 2015; Swartout et al., 2018).

The author took steps to address ethical considerations in the current study. First, the researcher received IRB approval to use the existing data for the purposes of the current study. Because no identifying data was collected in the original survey, the researcher had no way to tie survey responses to individuals. Additionally, the researcher did not report descriptive data for subgroups with n 's of less than 5 in order to prevent potential identification of participants within small subpopulations (Institute of Education Sciences, 2010).

Chapter Four: Data Analysis

Chapter 4 presents the results of the statistical analyses of secondary data collected from graduate students in the fall of 2018 as part of an institutional gender-based violence/harassment campus climate survey. The purpose of the current study was to examine the relationships between academic functioning, mindfulness, and negative affect in the context of the adult gender-based violence/harassment and childhood adversity experiences of graduate students. Given the lack of previous research related to graduate student experiences of gender-based violence/harassment and ACEs, the research questions and subsequent analyses were exploratory in nature.

The research questions that guided the study are as follows:

RQ1: What is the prevalence of gender-based violence/harassment and adverse childhood experiences (ACEs) among graduate students at an urban research university? (descriptive)

RQ2: How do adult gender-based violence/harassment experiences and ACE history impact *mindfulness* levels among graduate students? (regression)

RQ3: How do adult gender-based violence/harassment experiences and ACE history impact *negative affect* levels among graduate students? (regression)

RQ4: Among students who experienced gender-based violence/harassment in graduate school, do *mindfulness* levels differ among those who experienced difficulties in academic functioning versus those who did not? (group comparison)

RQ5: Among students who experienced gender-based violence/harassment in graduate school, do *negative affect* levels differ among those who experienced difficulties in academic functioning versus those who did not? (group comparison)

Preliminary Analyses

Data Cleaning

Before conducting the descriptive and inferential analyses, data were cleaned and the dataset was prepared. As detailed in Chapter 3, composite variables were created for types of gender-based violence/harassment and demographic groups. Broad sexual assault, intimate partner violence, stalking, and sexual harassment composite variables were created based on *yes* responses to corresponding items the SES-SV and the GBVHQ. Gender identity, sexual orientation, and race/ethnicity composite variables were created by combining groups with small *n*'s into larger groups. Sum scores were also created for adult gender-based violence/harassment and ACEs to represent the number of different types of gender-based violence and childhood adversity experienced (not the number of discrete experiences of violence).

Assumption Testing

Next, data were tested against the assumptions for OLS regression and independent samples *t*-tests. The data were first inspected for patterns of missingness. After missingness was addressed, data were examined for normality, linearity, and homoscedasticity.

Prior to analyzing the data for missingness, incomplete cases were eliminated from the dataset. The first level of survey completion was defined as answering at least one question related to adult gender-based violence/harassment and one question related to ACEs. Eliminating incomplete cases at that level resulted in a sample of $n = 774$. The next level of survey completion was defined as completing at least 80% of both the MAAS and DASS scales and answering the gender identity, sexual orientation, and race/ethnicity demographic questions. Eighty cases were identified as incomplete at this level and were excluded from the sample. The remaining cases ($n = 694$) were inspected for patterns of missingness. Following the steps outlined by Osborne (2017), data were coded as missing or not missing and a series of logistic

regressions were conducted to determine if missing data were predicted by other variables. DAFS items were excluded from this analysis because only a specific subset of the sample was asked to participate in that component of the survey. Results of the logistic regressions were not significant, suggesting the data were missing at random/completely at random (MCAR/MAR). The results from Little's MCAR analysis (Little, 1988), $\chi^2(886, N = 694) = 944.31, p = .09$, reinforced this determination. The demographic variables had 1% missing data and each scale item had less than 1% missing data (1 variable had 0.7%, 3 variables had 0.6%, and the other 32 had less than 0.5%). Due to the small amount of missing data and their MCAR/MAR nature, missing data for the scale variables were replaced using regression mean imputation (Cole, 2008; Sterner, 2011). The imputation resulted in two DASS items having negative values; those values were changed to zero to fit the scoring range of the scale. After imputation, the scores for the scales measuring mindfulness (MAAS) and negative affect (DASS) were computed.

The next step was to examine the data for multivariate outliers. Cook's D z -scores were calculated for the MAAS scores. Four cases with Cook's D z -scores above 5 were deleted (Osborne, 2017). After deletion, Cook's D z -scores for the DASS scores were calculated; six additional cases with Cook's D z -scores above 5 were removed. The final dataset included $n = 684$ participants.

After removing outliers, the author tested the data against the remaining assumptions of OLS regression: normality, multicollinearity, linearity, and homoscedasticity (Tabachnick & Fidell, 2012). MAAS and DASS data were analyzed separately because the regressions were conducted separately. When MAAS score was the dependent variable, the assumptions of normality (visual examination of the normal P-P plot), linearity (visual examination of the residual scatterplot), and no multicollinearity (all VIFs between 1.01 and 1.53) held. However,

visual examination of the residual scatterplot showed evidence of heteroscedasticity. Assumption testing with DASS score as the dependent variable showed no violations of the assumptions regarding linearity (visual examination of residual scatterplot) or multicollinearity (all VIFs between 1.0 and 1.53). Visual inspection of the normal P-P plot showed evidence of non-normality and inspection of the residual scatterplot showed evidence of heteroscedasticity. Instead of transforming the data, the author used bootstrapped versions of the analyses in order to better retain the integrity of the data. In bootstrapping, the data set is treated as the population and repeated subsamples are drawn (with replacement), analyzed, and used to estimate a sampling statistic (Field, 2013; Osborne, 2017). Bootstrapping is a robust measure recommended above transformation when dealing with non-normal and heteroscedastic data (Field, 2013).

The DAFS data were inspected separately because they used a much smaller subset of the sample. Only participants who answered *yes* to a screening question “*Did you answer ‘yes’ to any of the questions in the previous section (Adult Experiences) while you were a graduate student?*” had access to the DAFS questions ($n = 44$). Of those, one case was missing one data point. Regression mean imputation was used to replace the missing DAFS item (Cole, 2008; Sterner, 2011). DAFS sum scores were then computed using the imputed data. No extreme outliers were detected via visual inspection of the DAFS histogram and boxplot. The DAFS scores exhibited strong positive skewness (1.31) and kurtosis (1.52). However, due to the small sample size and exploratory nature of the research questions, the author chose to use a bootstrapped version of the analysis instead of transforming the data.

Participant Demographics

The demographics of the sample are listed in Table 1. Overall, the sample was predominantly white, heterosexual, and cisgender (with cisgender women substantially

outnumbering cisgender men). Compared to the institution, the sample had a somewhat higher percentage of Asian, White, and Multiracial participants and a somewhat lower percentage of Black participants (State Council of Higher Education for Virginia, 2019). All graduate degree levels were represented; however, doctoral students were overrepresented and professional students were underrepresented. Half of the participants were in medical and health sciences degree programs, as shown by the even split between the institution’s academic and health sciences campuses. The sample was also young; over one-third of participants were under 25 years old and 82% were 30 years old or younger.

Table 1

Demographics of Sample (n=684)

Grouping Variable	<i>n</i>	% of Sample	% of Institution
Gender			
Cisgender Man	182	27%	37%
Cisgender Woman	481	70%	62%
Transgender, Genderqueer, Gender Non-conforming, Gender Non-binary, Questioning, Self-identify	21	3%	-
Sexual Orientation			
Bisexual	38	6%	-
Gay	12	2%	-
Heterosexual/Straight	584	85%	-
Lesbian	16	2%	-
Pansexual	13	2%	-
Self-identify (including multiple identities)	21	3%	-
Race/Ethnicity			
American Indian or Alaska Native	n/a	n/a	<1%
Asian	109	16%	12%
Black/African American	52	8%	12%
Latinx	19	3%	2%
Middle Eastern/North African	15	2%	-
Multiracial	47	7%	3%
Native Hawaiian/Other Pacific Islander	n/a	n/a	-
White	441	65%	58%
Degree Type			
Doctoral Degree	277	41%	26%
Master’s Degree	319	47%	47%

Professional Degree	86	13%	27%
Campus Type			
Academic Campus	331	48%	-
Health Sciences Campus	343	50%	-
Online Campus	9	1%	-
Age			
Under 25 years old	261	38%	-
25-30 years old	283	44%	-
31-39 years old	100	15%	-
40-49 years old	27	4%	-
50+ years old	12	2%	-

Note. A dash represents cells with *n*'s below 5. The institution did not report official data on students' sexual orientation or on gender identities other than female and male. Additionally, the institution did not report Asian and Native Hawaiian/Other Pacific Islander or White and Middle Eastern/North African race/ethnicities separately. Graduate student enrollment by campus type was not available.

Reliability of Scale Scores

After addressing missing data and creating the final sample, reliability tests were run for each of the three scales used in the study. Scales with Cronbach's alpha above .7 are considered to have acceptable reliability (Field, 2013). In the current study, the Cronbach's alphas for all scores indicated good reliability (MAAS = .94, DASS = .93, DAFS = .82).

The MAAS mean in this study was similar to that found in other studies of both college and adult populations (Brown & Ryan, 2003; Tubbs et al., 2018). Due to an error in survey administration, two items were left off of the DASS-21. Therefore, DASS scores cannot be compared to those from other studies that used the full DASS-21. However, given the strong Cronbach's alpha in the context of this study, as well as the use of the total score instead of subscale scores, the author chose to keep the DASS scores in the analyses. Table 2 displays the MAAS and DASS means, standard deviations, and confidence intervals broken down by grouping variable.

Table 2

Mean MAAS and DASS Scores by Grouping Variable

Grouping Variable	MAAS			DASS	
	<i>n</i>	<i>M(SD)</i>	95% CI	<i>M(SD)</i>	95% CI
Gender Identity					
Cisgender women	481	4.31(1.08)	[4.22, 4.41]	10.88(9.96)	[9.99, 11.77]
Cisgender men	182	4.56 (1.03)	[4.41, 4.71]	8.28 (8.14)	[7.09, 9.47]
Trans and gender non-conforming	21	3.82 (0.93)	[3.40, 4.25]	17.57 (9.83)	[13.10, 22.04]
Sexual Orientation					
Sexual minority	100	4.00 (1.01)	[3.80, 4.20]	14.88 (10.40)	[12.82, 16.95]
Heterosexual	584	4.43 (1.07)	[4.34, 4.51]	9.63 (9.30)	[8.87, 10.38]
Race/Ethnicity					
People of Color	196	4.63 (1.09)	[4.47, 4.78]	9.51 (10.60)	[8.02, 11.01]
White	441	4.26 (1.06)	[4.16, 4.36]	10.69 (9.17)	[9.83, 11.55]
Multiracial	47	4.24 (0.86)	[3.99, 4.50]	11.33 (9.76)	[8.47, 14.20]
Number of types of gender-based violence harassment/harassment					
0	296	4.73 (1.01)	[4.61, 4.84]	6.93 (7.32)	[6.09, 7.77]
1	144	4.37 (0.96)	[4.21, 4.53]	10.15 (9.23)	[8.63, 11.68]
2	105	3.94 (1.03)	[3.74, 4.14]	12.75 (9.98)	[10.82, 14.68]
3	79	3.95 (0.97)	[3.73, 4.16]	14.85 (10.36)	[12.52, 17.17]
4	60	3.85 (1.13)	[3.56, 4.14]	18.09 (11.27)	[15.18, 21.00]
ACEs					
0	239	4.71 (1.04)	[4.56, 4.84]	6.50 (6.96)	[5.61, 7.38]
1-3	305	4.30 (1.00)	[4.18, 4.41]	11.15 (9.76)	[10.05, 12.25]
4 or more	140	3.92 (1.07)	[3.74, 4.10]	15.41 (10.63)	[13.63, 17.18]
Overall	684	4.36 (1.07)	[4.28, 4.44]	10.40 (9.64)	[9.67, 11.12]

Note. CI=Confidence Interval.

DAFS scale. Only respondents who answered *yes* to the question “*Did you answer ‘yes’ to any of the questions in the previous section (Adult Experiences) while you were a graduate student?*” had access to the DAFS questions. Due to attrition and unintended consequences of the survey construction, this group did not include all of the participants who reported experiencing gender-based violence/harassment while in graduate school. The demographics of the DAFS subsample (see Table 3) were similar to those of the larger sample, although a higher percentage of the subsample included cisgender women and heterosexual participants. The majority of

participants had experienced multiple types of adult gender-based violence/harassment.

Additionally, over half had experienced at least one ACE.

Table 3

Characteristics of DAFS Subsample (n=44)

Grouping Variable	<i>n</i>	% of Sample
Gender		
Cisgender Man	-	-
Cisgender Woman	40	91%
Trans and Gender Non-Conforming	-	-
Sexual Orientation		
Heterosexual/Straight	35	80%
Sexual Minority	9	20%
Race/Ethnicity		
Multiracial	5	11%
People of Color	10	23%
White	29	66%
Degree Type		
Doctoral Degree	24	55%
Master's Degree	15	34%
Professional Degree	5	11%
Campus Type		
Main Campus	17	39%
Health Sciences Campus	27	61%
Age		
Under 25 years old	10	23%
25-30 years old	27	61%
31-39 years old	6	14%
40-49 years old	-	-
50+ years old	-	-
Gender-Based Violence/Harassment		
Broad Sexual Assault	38	86%
Intimate Partner Violence	25	57%
Stalking	24	55%
Sexual Harassment	30	68%
Polyvictimization	36	82%
ACEs		
0 ACEs	10	23%
1-3 ACEs	19	43%
4 or More ACEs	15	34%

Note. A dash represents cells with *n*'s below 5.

The small sample size ($n = 44$) prevented the running of an exploratory factor analysis. As a result, data on the hypothesized subscales are reported in Table 4 and the sum score is used in the subsequent analyses. To help contextualize the data, Table 5 shows the frequencies (n 's and percentages) of responses to each DAFS item. The small sample size resulted in small subgroup sizes; therefore, subgroup data is not reported. Research on difficulties in academic functioning is lacking, especially research conceptualizing the difficulties as related to academic disengagement, academic isolation, and poor academic outcomes. The DAFS frequencies, therefore, add to the understanding of the difficulties in academic functioning that survivors face. However, the measure and the results should be considered extremely exploratory.

Table 4

DAFS Scores by Subscales

Type of Difficulty	M(<i>SD</i>)	95% CI	Potential Score Range	<i>n</i> items
Academic Disengagement	7.86 (2.80)	[7.01, 8.71]	5-25	5
Academic Isolation	5.36 (1.92)	[4.78, 5.95]	4-20	4
Poor Academic Outcomes	4.05 (1.60)	[3.56, 4.53]	3-15	3
Overall	17.26 (5.43)	[15.61, 18.92]	12-60	12

Note. CI=Confidence Interval.

Table 5

Frequencies of DAFS Items ($n=44$)

DAFS Item	DAFS Item Score				
	1	2	3	4	5
Academic Disengagement					
Trouble concentrating in class	34% ($n=15$)	11% ($n=5$)	27% ($n=12$)	25% ($n=11$)	2% ($n=1$)
Missed or skipped class or other academic obligations	60% ($n=26$)	23% ($n=10$)	14% ($n=6$)	5% ($n=2$)	0%
Attended class when drunk or high	98% ($n=42$)	2% ($n=1$)	0%	0%	0%

Dropped or thought about dropping one or more classes	82% (n=36)	9% (n=4)	7% (n=3)	2% (n=1)	0%
Considered leaving the institution	80% (n=35)	7% (n=3)	7% (n=3)	7% (n=3)	0%
Academic Isolation					
Been denied access to opportunities such as funding, authorship on manuscripts, letters of recommendation, etc.	98% (n=43)	2% (n=1)	0%	0%	0%
Avoided <i>formal</i> departmental or professional events	75% (n=33)	14% (n=6)	7% (n=3)	5% (n=2)	0%
Avoided <i>informal</i> departmental or professional events	57% (n=25)	18% (n=8)	11% (n=5)	11% (n=5)	2% (n=1)
Chosen not to take a certain class to avoid the person who harmed you	96% (n=42)	2% (n=1)	2% (n=1)	0%	0%
Poor Academic Outcomes					
Done poor work or not turned in assignments	66% (n=29)	23% (n=10)	11% (n=5)	0%	0%
Experienced delays in degree completion timeline	91% (n=40)	5% (n=2)	5% (n=2)	0%	0%
Grades or GPA suffered	71% (n=31)	18% (n=8)	7% (n=3)	5% (n=2)	0%

Note. 1 = Never; 2 = Occasionally; 3 = Sometimes; 4 = Many Times; 5 = Most Times.

Correlations

Next, bivariate correlations were conducted as a preliminary assessment of the relationships between the variables. Correlations with DAFS scores were conducted separately because of the smaller subset of participants. The results are displayed in Tables 6 and 7. Within the larger sample, MAAS score and DASS score were highly correlated, as were GBVH score and ACE score. Both MAAS score and DASS score were moderately correlated with GBVH score and ACE score. Within the subset of participants who reported on their academic

functioning ($n = 44$), neither MAAS nor DASS were significantly correlated with DAFS. The other variables remained significantly correlated with each other.

Table 6

Pearson Correlation Matrix Between MAAS, DASS, GBVH, and ACE Scores

Measure	MAAS Score	DASS Score	GBVH Score	ACE Score
MAAS Score	-			
DASS Score	-.597**	-		
GBVH Score	-.317**	.381**	-	
ACE Score	-.273**	.348**	.529**	-

** $p < .01$.

Table 7

Pearson Correlation Matrix Between DAFS, MAAS, DASS, GBVH, and ACE Scores ($n=44$)

Measure	DAFS Score	MAAS Score	DASS Score	GBVH Score	ACE Score
DAFS Score	-				
MAAS Score	-.124	-			
DASS Score	.188	-.653**	-		
GBVH Score	.430**	-.438**	.358*	-	
ACE Score	.367*	-.325*	.416**	.601**	-

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

Research Question 1

Research Question 1 asked about the prevalence of gender-based violence/harassment and ACEs among graduate students. Table 8 presents the breakdown of types of gender-based violence reported by participants, as well as the number of different types of violence/harassment they experienced. Table 9 presents the breakdown of types and number of ACEs reported. Due to the significant gender effects found in previous gender-based violence/harassment research (Cantor et al., 2015; National Academies of Sciences, Engineering, and Medicine, 2018), frequencies by gender identity are also reported.

Table 8

Gender-Based Violence Frequencies by Participant Gender Identity

Gender-Based Violence/Harassment	Cisgender Women (<i>n</i> =481)		Cisgender Men (<i>n</i> =182)		TGNC (<i>n</i> =21)		Total (<i>n</i> =684)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Type of gender-based violence/harassment								
Broad sexual assault	216	46%	22	12%	14	67%	252	37%
Unwanted sexual contact	171	36%	17	9%	9	43%	197	29%
Attempted penetration	166	35%	10	6%	10	48%	186	27%
Completed penetration	98	20%	7	4%	8	38%	109	16%
Intimate partner violence	157	33%	20	11%	12	57%	189	28%
Emotional abuse	147	31%	18	10%	12	57%	177	26%
Physical abuse	72	15%	6	3%	7	33%	85	13%
Stalking	150	31%	16	9%	9	43%	175	26%
In person stalking	88	18%	6	3%	8	38%	102	15%
Cyberstalking	111	23%	10	6%	7	33%	128	19%
Cyberbullying	59	12%	8	4%	-	-	70	10%
Sexual harassment	182	38%	16	9%	17	81%	215	31%
Power sexual harassment	33	7%	-	-	-	-	36	5%
General sexual harassment	134	28%	10	6%	9	43%	153	22%
Gender harassment	72	15%	8	4%	15	71%	95	14%
Polyvictimization	208	43%	20	11%	16	76%	244	35%
Revictimization	219	45%	26	14%	15	71%	260	38%
Number of types of gender-based violence/harassment experienced								
0	159	33%	134	74%	-	-	296	43%
1	114	24%	28	15%	-	-	144	21%
2	85	18%	15	8%	5	24%	105	15%
3	71	15%	-	-	-	-	79	12%
4	52	11%	-	-	7	33%	60	9%

Note. TGNC = trans and gender non-conforming. Revictimization includes participants who experienced violence in childhood or adolescence and then again in adulthood. A dash represents cells with *n*'s below 5.

Table 9

ACE Frequencies by Participant Gender Identity

ACE	Cisgender Women (<i>n</i> =481)		Cisgender Men (<i>n</i> =182)		TGNC (<i>n</i> =21)		Total (<i>n</i> =684)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Type of ACE								

Child abuse/neglect	137	29%	33	18%	14	67%	184	27%
Emotional abuse	85	18%	22	12%	-	-	115	17%
Emotional neglect	53	11%	12	7%	11	52%	76	11%
Physical abuse	46	10%	12	7%	-	-	62	9%
Physical neglect	13	3%	5	3%	5	24%	23	3%
Sexual abuse	57	12%	8	4%	5	24%	70	10%
Adolescent victimization	209	44%	29	16%	10	48%	248	36%
Peer sexual assault	114	24%	10	5%	-	-	128	19%
Adolescent dating violence	116	24%	14	8%	9	43%	139	20%
Adolescent stalking	101	21%	9	5%	6	29%	116	17%
Household Dysfunction	252	52%	72	40%	14	67%	338	49%
Parents divorced/separated	142	30%	33	18%	10	48%	185	27%
Witness parental domestic violence	37	8%	7	4%	-	-	48	7%
Live with someone who abused drugs or alcohol	93	19%	25	14%	6	29%	124	18%
Depressed/mentally ill/suicidal family member	162	34%	45	25%	9	43%	216	32%
Household member in prison/jail	27	6%	13	7%	-	-	41	6%
Number of ACEs experienced								
0	141	29%	94	52%	-	-	239	35%
1	98	20%	37	20%	-	-	139	20%
2	80	17%	20	11%	-	-	102	15%
3	53	11%	10	5%	-	-	64	9%
4 or more	109	23%	21	12%	10	48%	140	21%

Note. TGNC = trans and gender non-conforming. A dash represents cells with *n*'s below 5.

As Table 8 shows, participants frequently experienced gender-based violence/harassment during adulthood. In fact, over half of participants had experienced at least one form and 35% had experienced more than one form. Broad sexual assault was the most common experience, with 37% of the overall sample having been sexually assaulted in adulthood. Over one-quarter of participants had experienced intimate partner violence as an adult, with emotional abuse being the most frequent type. Stalking was also very common, with both in-person and cyberstalking being prevalent. Sexual harassment was almost as widespread as broad sexual assault, with almost one-third of participants reporting at least one form. Participants reported being sexually harassed by someone with academic power over them less frequently than they reported sexual

harassment by others. Revictimization was also high in this sample, with almost 40% ($n = 260$) of participants experiencing violence in childhood/adolescence and in adulthood.

Participants in the sample also frequently reported ACEs, with 65% of participants having experienced at least one ACE and 21% experiencing four or more ACEs. Table 9 outlines the frequency of types and categories of ACEs that participants reported. They reported ACEs related to household dysfunction most frequently, particularly living with a household member with a mental illness (32%) and parental divorce or separation (27%). Adolescent victimization and child abuse were also common. Over one-quarter of participants reported experiencing child abuse, with emotional abuse the most frequently reported within that category. Over one-third of participants reported adolescent victimization, with both peer sexual assault and teen dating violence most often reported.

The overall results obscured important differences by gender identity. While the small size of the trans and gender non-conforming group precluded statistical comparisons with cisgender women and men, it is important to note that trans and gender non-conforming participants consistently reported the highest levels of ACEs and adult gender-based violence/harassment. Cisgender men, on the other hand, consistently reported the lowest levels of ACEs and adult victimization. Over half of cisgender men reported no ACEs, whereas only 29% of cisgender women reported no ACEs. Almost half of trans and gender non-conforming participants and 23% of cisgender women reported 4 or more ACEs, as compared to 12% of cisgender men.

To prevent marginalized groups' experiences from being overshadowed by the dominant group's experiences, ACE and adult gender-based violence experiences are also reported by sexual orientation and race/ethnicity subgroups. Due to the small size of some identity groups,

the author chose to combine individual identity groups into larger categories. While this decision obscures the differences between individual groups, it also protects the identities of participants in small identity groups while aiding in understanding the broad context of the data. Participants identifying as asexual, bisexual, gay, lesbian, pansexual, who self-identified, or who identified with more than one category were combined into the Sexual Minority group. The Straight/Heterosexual was comprised of participants who reported their identity as straight/heterosexual. Participants who identified as Asian, Black, Latinx, or Middle Eastern/North African were combined into the People of Color group. Participants who identified as Multiracial or who identified as more than one race/ethnicity comprised the Multiracial group and those who identified as White comprised the White group. No participants identified as Native American/American Indian or Native Hawaiian/Pacific Islander. Substantial group size differences prohibited statistical comparison of groups, so the data is presented for descriptive purposes only. Sexual orientation group comparisons are reported in Table 10 (gender-based violence/harassment) and Table 11 (ACEs). Race/ethnicity group comparisons are reported in Table 12 (gender-based violence/harassment) and Table 13 (ACEs).

Table 10

Gender-Based Violence/Harassment Frequencies by Participant Sexual Orientation

Gender-Based Violence/Harassment	Sexual Minority (n=100)		Straight/Heterosexual (n=584)	
	n	%	n	%
Type of gender-based violence/harassment experienced				
Broad sexual assault	58	58%	194	33%
Intimate partner violence	49	49%	140	24%
Stalking	46	46%	129	22%
Sexual harassment	60	60%	155	27%
Polyvictimization	61	61%	183	31%
Number of types of gender-based violence/harassment experienced				
0	18	18%	278	48%
1	21	21%	123	21%

2	17	17%	88	15%
3	18	18%	61	10%
4	26	26%	34	6%

Table 11

ACE Frequencies by Participant Sexual Orientation

ACEs	Sexual Minority (n=100)		Straight/Heterosexual (n=584)	
	<i>n</i>	%	<i>n</i>	%
Type of ACEs				
Child abuse/neglect	50	50%	134	23%
Adolescent victimization	55	55%	193	33%
Household dysfunction	71	71%	267	46%
Number of ACEs				
0	19	19%	220	38%
1	8	8%	131	22%
2	19	19%	83	14%
3	10	10%	54	9%
4 or more	44	44%	96	16%

Table 12

Gender-Based Violence/Harassment Frequencies by Participant Race/Ethnicity

Gender-Based Violence/Harassment	People of Color (n=196)		White (n=441)		Multiracial (n=47)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Type of gender-based violence/harassment experienced						
Broad sexual assault	57	29%	172	39%	23	49%
Intimate partner violence	37	19%	134	30%	18	38%
Stalking	41	21%	119	27%	15	32%
Sexual harassment	42	21%	156	35%	17	36%
Polyvictimization	44	22%	180	41%	20	43%
Number of types of gender-based violence/harassment experienced						
0	103	53%	177	40%	16	34%
1	49	25%	84	19%	11	23%
2	17	9%	84	19%	-	-
3	14	7%	55	13%	10	21%
4	13	7%	41	9%	6	13%

Note. A dash represents cells with *n*'s below 5.

Table 13

ACE Frequencies by Participant Race/Ethnicity

ACEs	People of Color (n=196)		White (n=441)		Multiracial (n=47)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Type of ACEs						
Child abuse/neglect	53	27%	114	26%	17	36%
Adolescent victimization	59	30%	166	38%	23	49%
Household dysfunction	78	40%	230	52%	30	64%
Number of ACEs						
0	89	45%	141	32%	9	19%
1	37	19%	92	21%	10	21%
2	21	11%	74	17%	7	15%
3	16	8%	42	10%	6	13%
4	33	17%	92	21%	15	32%

Patterns emerged across subgroups. Sexual minority participants reported higher rates of gender-based violence/harassment in adulthood than heterosexual participants, including higher rates of polyvictimization. Sexual minority participants also reported all categories of ACEs at higher rates than heterosexual participants. ACEs related to household dysfunction were the most commonly reported across all three groups, followed by adolescent victimization and then child abuse. Differences between racial/ethnic groups were also apparent, although they were not as extreme as the differences by sexual orientation. Multiracial participants reported the highest levels of adult gender-based violence/harassment, followed by White participants. Participants of Color reported the lowest levels of individual types of adult gender-based violence as well as of polyvictimization. As a reminder, statistical comparisons were not conducted due to extreme differences in group size. These data are reported to aid in understanding the context of the graduate student participants of this study and should not be generalized to other populations.

Overall, the data show experiences of gender-based violence/harassment in adulthood were common among graduate students in this study. Broad sexual assault and sexual harassment

were the most common experiences reported (by 37% and 31% of participants, respectively). Additionally, over one-third of participants had experienced more than one form of gender-based violence in adulthood. ACEs were also common, with the majority of participants having experienced at least one and 45% having experienced more than one. Notably, 20% experienced 4 or more ACEs, which is the critical score where ACEs are most associated with negative outcomes in adulthood (Anda et al., 2006; Felitti et al., 1998). Patterns of gender differences were also apparent, with trans and gender non-conforming participants and cisgender women reporting substantially higher rates of adult gender-based violence/harassment experiences and most ACEs than cisgender men.

Research Questions 2 and 3

Research Questions 2 and 3 dealt with the relationship between adult gender-based violence/harassment, ACEs, and mental health while controlling for gender identity, sexual orientation, and race/ethnicity. Specifically, Research Question 2 asked how adult gender-based violence/harassment and ACE experiences impacted graduate students' mindfulness levels. Research Question 3 asked how those same experiences impacted graduate students' negative affect levels. The author performed OLS regressions with bootstrapping to compensate for the non-normality and heteroscedasticity of the data. The analysis was performed separately for mindfulness and negative affect. While there are concerns that multiple testing inflates the Type I error rate, controlling for error rate inflation can negatively impact power (Dattalo, 2013; Field, 2013). Due to the exploratory nature of this research, no error rate corrections were made.

The study's sample included a small number of trans and gender non-conforming participants ($n = 21$), which necessitated their exclusion from the regression analyses. This resulted in a sample size of $n = 663$ ($n = 481$ cisgender women and $n = 182$ cisgender men).

Multiracial participants were combined into the People of Color group for the same reason, making the race/ethnicity subgroups White ($n = 427$) and People of Color ($n = 236$). The sexual orientation groupings remained the same as in the analyses for Research Question 1, with $n = 84$ Sexual Minority participants and $n = 579$ Straight/Heterosexual participants. The reference groups were as follows: gender identity = cisgender women; sexual orientation = straight/heterosexual; race/ethnicity = White.

Research Question 2

Research Question 2 was answered through a bootstrap OLS regression (using 1,000 bootstrap samples) with MAAS score as the dependent variable, ACE score and gender-based violence/harassment score as predictors, and gender identity, sexual orientation, and race/ethnicity as covariates. Table 14 displays the regression coefficients and bootstrap confidence intervals. The overall model significantly explained approximately 13% of the variance in the data ($R^2_{\text{adj}} = 0.13$, $F(5,657) = 20.03$, $p < .001$). The covariates of gender identity and sexual orientation were not significantly associated with mindfulness when other variables were held constant. Race/ethnicity, however, was positively and significantly associated with mindfulness. Participants of Color showed higher levels of mindfulness than White participants when all other variables were held constant ($t = 3.15$, $p = .002$). GBVH score had a significant and negative relationship with MAAS score; experiencing more types of gender-based violence/harassment was associated with lower levels of mindfulness ($t = 5.05$, $p < .001$). Number of ACEs was also significantly and negatively associated with mindfulness, with higher numbers of ACEs associated with lower levels of mindfulness ($t = 3.37$, $p = .001$).

Table 14

Summary of Separate Regression Analyses for MAAS and DASS

Variable	MAAS				DASS			
	<i>B</i>	<i>SE B</i>	BCa 95% CI	β	<i>B</i>	<i>SE B</i>	BCa 95% CI	β
GBVH score	-0.18	0.04	[-0.27, -0.11]	-0.23***	1.87	0.32	[1.24, 2.56]	0.26***
ACE score	-0.07	0.02	[-0.11, -0.03]	-0.14**	0.81	0.18	[0.48, 1.14]	0.19***
Gender identity	-0.04	0.09	[-0.21, 0.13]	-0.02	0.27	0.82	[-1.10, 1.76]	0.01
Sexual orientation	-0.15	0.12	[-0.39, 0.07]	-0.05	1.47	1.06	[-0.61, 3.73]	0.05
Race/ethnicity	0.03	0.08	[0.101, 0.434]	-0.12*	-0.26	0.72	[-1.85, 1.35]	-0.01

Note. CI = confidence intervals based on 1,000 bootstrap samples.

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

Research Question 3

Another bootstrapped OLS regression (1,000 bootstrap samples) was used to answer Research Question 3 using the DASS score as the dependent variable, ACE score and gender-based violence/harassment score as predictors, and gender identity, sexual orientation, and race/ethnicity as covariates. Table 14 displays the regression coefficients and bootstrap confidence intervals. The overall model significantly explained approximately 16% of the variance in the data ($R^2_{adj} = 0.16$, $F(5,657) = 25.68$, $p < .001$). The demographic covariates (gender identity, sexual orientation, and race/ethnicity) were not significantly associated with DASS score. The GBVH score was positively and significantly associated with DASS score, with experiencing more types of gender-based violence/harassment associated with higher levels of negative affect ($t = 5.84$, $p < .001$). ACE score was also positively and significantly associated with DASS score, with experiencing more ACEs associated with higher levels of negative affect ($t = 4.56$, $p < .001$).

The results of the MAAS and the DASS bootstrap OLS regressions indicated that both the number of different types of adult gender-based violence/harassment that participants experienced and the number of ACEs they experienced were associated with their mental health, with number of gender-based violence/harassment types being most strongly related. Those who experienced more types of violence and/or childhood adversity had higher levels of negative affect and lower levels of mindfulness. These effects were present even when gender identity, sexual orientation, and race/ethnicity were held constant. Number of ACEs and adult gender-based violence/harassment experiences accounted for more of the negative affect variance than mindfulness variance.

Research Questions 4 and 5

Research Questions 4 and 5 focused on the subset of participants who experienced gender-based violence/harassment in graduate school and who also provided information about the impact of the experiences on their academic functioning ($n = 44$). Table 3 displays the subsample's characteristics. Research Question 4 asked if mindfulness levels differed between those who experienced difficulties in academic functioning and those who did not. Research Question 5 asked if negative affect levels differed between those same groups.

Due to the small sample size, two separate bootstrapped independent samples *t*-tests were conducted with DAFS score as the independent variable and MAAS (analysis 1) and DASS (analysis 2) as dependent variables. The cases were divided into two groups based on the DAFS cutoff score of 12, which equated to answering *never* to all items. This effectively created a Never Experienced Difficulties group ($n = 11$) and an Experienced Difficulties At Least Occasionally group ($n = 33$). Despite the resulting differences in group size, this cutoff was chosen because it was a clean division that made theoretical sense. Splitting the sample at a

DAFS score of 16 would have resulted in equal groups but would have created an artificial distinction within the Experienced Difficulties Occasionally range. Bootstrapping helped mitigate the effects of the non-normal DASS data and compensate for the small and unequal sample size (Field, 2013). As with the OLS regressions detailed above, the drawback of multiple testing is inflated Type I error rate (Dattalo, 2013; Field, 2013). However, controlling for experiment-wise error rate can lead to loss of power (Field, 2013). Due to the exploratory nature of this research and the small sample size, the author did not make alpha corrections.

Research Question 4

The first bootstrap independent samples *t*-test (using 1,000 bootstrap samples) was conducted to determine whether MAAS scores differed between survivors who experienced difficulties in academic functioning at least occasionally and those who did not (see Table 15). Due to unequal group size, effect size was calculated using Hedge’s *g*. On average, survivors who never experienced academic functioning difficulties had significantly higher MAAS scores than those who experienced academic functioning difficulties at least occasionally. The effect size was strong, and equated to a practical difference of almost 1.5 standard deviations (Ellis, 2010; Ferguson, 2009).

Table 15

T-tests for MAAS and DASS by Difficulties in Academic Functioning

Measure	Never (<i>n</i> =11)		At Least Occasionally (<i>n</i> =33)		BCa 95% CI	<i>t</i>	df	<i>g</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
MAAS	4.62	0.88	3.63	0.95	[0.41, 1.58]	3.08*	42	1.46
DASS	8.78	6.98	18.13	11.68	[-14.29, -4.14]	-3.20*	29.38	0.87

Note. CI = confidence interval based on 1,000 bootstrap samples.

***p* < .01.

Research Question 5

The second bootstrap independent samples *t*-test was conducted to determine whether DASS scores differed between survivors who experienced difficulties in academic functioning at least occasionally and those who did not (see Table 15). Levene's test indicated unequal variances ($F = 6.82, p = .01$); therefore, robust results were reported. Survivors who did not experience academic difficulties had a significantly lower DASS scores than those who did experience academic difficulties. The effect size was moderate and equated to a difference in negative affect levels of nearly 0.9 standard deviations between groups (Ellis, 2010; Ferguson, 2009). While not as substantial as the difference in mindfulness scores, the difference in negative affect scores still carried practical significance.

Overall, survivors of gender-based violence/harassment in graduate school who experienced at least occasional difficulties in academic functioning differed from those who never experienced difficulties on two major facets of mental health: mindfulness and negative affect. Those whose experiences led to academic difficulties had significantly higher levels of negative affect and significantly lower levels of mindfulness than those whose experiences never resulted in academic difficulties. The effect sizes were moderate to large for both analyses, suggesting the differences had substantial practical significance.

Conclusion

This chapter presented the results of statistical analyses related to the study's five research questions. The procedures used to clean the data and mitigate missing data were outlined. The process of evaluating the data against assumptions related to OLS regression and independent samples *t*-tests, as well as efforts to address violations, were described. Results from reliability analyses conducted on the three scales (MAAS, DASS, and DAFS) were reported. A

correlation matrix was included to show the correlations between the scales and the independent variables (gender-based violence/harassment score and ACE score).

Results from the frequency analyses conducted for Research Question 1 showed that participants frequently experienced adult gender-based violence/harassment experiences and/or ACEs, with 57% of participants experiencing at least one form of adult gender-based violence/harassment and 65% having experienced at least one ACE. Polyvictimization was also common, with 35% of participants experiencing more than one type of adult gender-based violence/harassment and almost 10% experiencing all four types measured in this study. Additionally, 45% of participants experienced more than one ACE and 20% experienced four or more ACEs. Statistical comparisons among demographic groupings were not conducted due to extreme differences in subgroup size. Descriptive patterns, however, were noted. Trans and gender non-conforming participants consistently reported the highest levels of adult gender-based violence/harassment and ACEs, followed by cisgender women. Sexual minority participants reported higher levels of both adult gender-based violence/harassment and ACEs than heterosexual participants. Differences among racial/ethnic groups were not as extreme as among sexual orientation groups; however, White and Multiracial participants tended to report higher levels of adult gender-based violence/harassment and ACEs than Participants of Color.

In answering Research Questions 2 and 3, the results of the two bootstrap OLS regressions indicated that gender-based violence/harassment score and ACE score were significantly and independently associated with both mindfulness and negative affect. Experiencing more types of gender-based violence/harassment and/or ACEs was associated with lower mindfulness and higher negative affect. Number of different types of adult gender-based violence/harassment experienced seemed to have a larger impact on mental health than number

of adverse childhood experiences. Neither gender identity or sexual orientation were significantly associated with mindfulness or negative affect. Race/ethnicity was associated with mindfulness but not negative affect.

Bootstrapped independent samples *t*-tests were used to address Research Questions 4 and 5. Results showed that participants who at least occasionally experienced difficulties in academic functioning as a result of graduate school gender-based violence/harassment had significantly lower levels of mindfulness and higher levels of negative affect than those whose gender-based violence/harassment experiences never resulted in academic functioning difficulties.

Chapter 5 will present the study's conclusions, including the relationship of the findings to previous research and a discussion of their overall meaning. Additionally, the study's limitations will be outlined. The chapter will conclude with research and practice implications of the findings.

Chapter 5 – Discussion

Despite decades of research on campus gender-based violence/harassment (Cantor et al., 2015; Fisher et al., 2000; Hall, 1982; Sweet, 2012), researchers and practitioners know little about the prevalence and impact of these experiences on graduate students. Existing research indicates that graduate students experience gender-based violence/harassment at lower rates than undergraduate students, although the rates are still substantial (Cantor et al., 2015). Researchers have also found disparities by gender identity and sexual orientation, with trans and gender non-conforming students, cisgender women, and sexual minority students reporting the highest rates of all forms of gender-based violence/harassment (Cantor et al., 2015; Coulter et al., 2017; National Academies of Sciences, Engineering, and Medicine, 2018). The small amount of existing research on graduate students has not captured their prior adult victimization or adverse childhood experiences (ACEs). This has prompted researchers to call for a more comprehensive and holistic look into violence and trauma in the lives of graduate students (Rosenthal et al., 2016).

Researchers focusing on college student mental health have also primarily focused on undergraduate students instead of graduate students (Hyun et al., 2006; Kernan et al., 2011). The broad-based research has shown that college students experience high rates of mental health challenges such as depression, anxiety, and stress (Boynton Health Service, 2018; Kernan et al., 2011). College students who experienced ACEs or gender-based violence/harassment have reported higher levels of mental health concerns than students without those experiences (Amar & Gennaro, 2005; Karatekin & Ahluwalia, 2016; Lindquist et al., 2013; Wood et al., 2018). Of the research focusing specifically on graduate students, researchers found that many graduate

students reported stress, depression, and anxiety as significant concerns that negatively impacted their academic functioning (Kernan et al., 2011).

Mindfulness has shown promise as a potential protective factor against mental health challenges such as depression, anxiety, and stress (Beck et al., 2017; Ortiz & Sibinga, 2017; Stillwell et al., 2017; Tubbs et al., 2018). Researchers have found that mindfulness interventions can reduce negative mental health symptoms such as stress, depression, and PTSD sequelae among trauma survivors (Ortiz & Sibinga, 2017). Mindfulness interventions have yielded similar positive benefits within general samples of graduate students (Beck et al., 2017; Stillwell et al., 2017). The research specifically addressing mindfulness levels and trauma within college student samples is limited, but researchers have suggested that mindfulness may moderate the relationship between trauma and anxiety (Tubbs et al., 2018). Findings from an emerging strand of research have demonstrated that mindfulness may impact academic functioning, with increased mindfulness associated with increased cognitive functioning (Mrazek et al., 2013; Schwager et al., 2016; Shapiro et al., 2011).

Research specifically addressing the mental health concerns and protective factors of graduate students with trauma histories is lacking. Additionally, researchers have rarely looked at how trauma impacts the academic functioning of graduate students. The scant research available has focused on violence and harassment in graduate school and not on survivors' childhood or previous adult trauma experiences (National Academies of Sciences, Engineering, and Medicine, 2018; Rosenthal et al., 2016). No researchers have connected all of the topics by looking at the relationships between trauma history, mental health, and academic functioning among graduate students.

The current study addressed these gaps through a nonexperimental cross-sectional survey design using data collected from a random sample of graduate students as part of an institutional gender-based violence/harassment climate survey. Five research questions guided the study: (a) What is the prevalence of gender-based violence/harassment and ACEs among graduate students at an urban research university? (b) How do adult gender-based violence/harassment experiences and ACE history impact *mindfulness* levels among graduate students? (c) How do adult gender-based violence/harassment experiences and ACE history impact *negative affect* levels among graduate students? (d) Among students who experienced gender-based violence/harassment in graduate school, do *mindfulness* levels differ among those who experienced difficulties in academic functioning versus those who did not? (e) Among students who experienced gender-based violence/harassment in graduate school, do *negative affect* levels differ among those who experienced difficulties in academic functioning versus those who did not?

The theoretical framework, which combined critical adult learning theories with cognitive adult learning theories, provided an important touchpoint at each part of the study. The framework shaped the overarching purpose of the study and the specific research questions that guided it. The survey items were selected to fit within the framework. For example, the DAFS items were written to address academic functioning at both an individual and a structural level. The theoretical framework shaped analytic decisions such as reporting identity subgroup frequencies even though statistical comparisons were not possible. In the sections below, findings are discussed in the context of both their individual (cognitive adult learning perspectives) and structural (critical adult learning theories) implications.

Discussion of Findings

Chapter 4 presented the statistical analyses and results associated with each research question. Below is a discussion of the findings in terms of their relationship to previous research as well as their overall meaning. The chapter concludes with a review of the study's limitations as well as implications for practice and future research.

Research Question 1

Overall, the findings related to Research Question 1 indicate that many graduate students enter graduate school with previous trauma experiences, and that a substantial proportion are functioning with the effects of multiple forms of trauma. This study was one of the first to measure ACEs among graduate students, as well as to capture data on their prior adult victimization experiences. Critical and cognitive adult learning theories indicate that trauma experiences, both current and prior, impact survivors' academic functioning. A comprehensive understanding of graduate student experiences is critical to best serving and supporting graduate students.

Nearly 60% participants in this study reported at least one form of gender-based violence/harassment at some point in adulthood. They reported sexual assault and harassment more frequently than other types of gender-based violence/harassment. Over one-third (37%) of participants reported experiencing broad sexual assault as adults and just under one-third (31%) reported experiencing sexual harassment. Participants experienced intimate partner violence and stalking in adulthood at similar rates, with 28% reporting intimate partner violence and 26% reporting stalking. Thirty-five percent of participants reported more than one type of gender-based violence/harassment, with almost 10% reporting all four types.

Participant experiences in this study did not appear to match the dominant public conversation and media narrative about campus gender-based violence. Media have generally

focused on cases where faculty members and advisors perpetrated the sexual harassment (Anderson, 2018; Gluckman, Read, Mangan, & Quilantan, 2017). For broad sexual assault, cases involving forced penetration have been discussed more than other cases (for example, Dick & Ziering, 2015; Lombardi, 2009). This study's participants, however, were substantially more likely to report gender harassment or sexual harassment perpetrated by people who did not have academic power over them. They were also more likely to report unwanted sexual contact or attempted penetration as opposed to completed penetration. Although the findings were not consistent with the media narrative, they were consistent with previous research (Fedina et al., 2018; National Academies of Sciences, Engineering, and Medicine, 2018). Additionally, public discussions of gender-based violence/harassment rarely cover graduate student experiences of intimate partner violence or stalking even though over a quarter of participants in this study reported those incidents.

The discrepancy between survivor experiences and the media narrative is important to note. The media's focus on less frequent but more extreme types of violence and harassment may lead students with more common but less prominent experiences to minimize what happened to them and not seek help. Gatekeepers may not make necessary and appropriate referrals to campus services because of incorrect perceptions about what these forms of gender-based violence/harassment look like and who can experience them.

This study is one of the first to examine ACEs within a graduate student sample. Sixty-five percent of participants reported experiencing at least one ACE and 21% reported experiencing four or more ACEs. These findings are in line with decades of previous research from a variety of non-graduate student populations in which between 50% and 70% of participants reported at least one ACE and between 12% and 20% reported four or more ACEs

(Boynton Health Service, 2018; Centers for Disease Control and Prevention & Kaiser Permanente, 2016; Karatekin, 2018; Windle et al., 2018). Almost half of participants in the current study reported at least one ACE related to household dysfunction (such as living with someone who was depressed or mentally ill or parental divorce/separation), making it the most common type of ACE reported. Over one-third of participants reported at least one adolescent victimization incident and over one-quarter reported child abuse/neglect. In addition, 38% of participants experienced both child abuse/adolescent victimization and adult gender-based violence/harassment.

Adults with four or more ACEs are significantly more likely than those without ACEs to face negative mental and physical health consequences (Anda et al., 2006; Felitti et al., 1998). This means that 1 in 5 graduate students in the current sample were at high risk for those outcomes. Researchers who study ACEs have pointed out that the nature of individual ACEs likely does not matter to adult functioning as much as the cumulative effect experiencing multiple ACEs (Anda et al., 2006; Felitti et al., 1998). Thus, graduate students who experienced multiple ACEs but no acts of child abuse or adolescent victimization may not realize the extent to which their current difficulties could be related to their childhood experiences.

The overall frequencies of adult gender-based violence/harassment and ACEs obscured gender identity differences. Trans and gender non-conforming participants consistently reported the highest levels of all forms of violence, harassment, and childhood adversity. Cisgender women also reported high rates, whereas cisgender men reported the lowest rates across all categories. Sexual minority students reported higher rates of gender-based violence/harassment than heterosexual students. The sample did not include enough trans and gender non-conforming or sexual minority students to conduct statistical comparisons between groups. The patterns of

difference, however, were consistent with those found by previous researchers (Black et al., 2010; Cantor et al., 2015; Coulter et al., 2017). These prevalence differences, combined with the effects of structural oppression, mean that gender-based violence/harassment and ACEs disproportionately impact marginalized students (Cantor et al., 2015; Linder & Harris, 2017).

Research Questions 2 and 3

Research Questions 2 and 3 dealt with the connections between gender-based violence/harassment, ACEs, and mental health. Research Question 2 focused on mindfulness and Research Question 3 focused on negative affect. Gender-based violence/harassment and ACEs both significantly and independently predicted mindfulness and negative affect levels. As the number of types of gender-based violence/harassment experiences increased, mindfulness levels decreased and negative affect levels increased. An increase in the number of ACEs was also associated with a decrease in mindfulness and an increase in negative affect. Adult gender-based violence/harassment and ACEs more strongly predicted negative affect (explaining 16% of the variance in scores) than mindfulness (explaining 13% of the variance in scores). In both models, adult gender-based violence/harassment was a stronger predictor than childhood adversity. When adult gender-based violence/harassment and ACEs were controlled for, none of the demographic covariates had a significant relationship with negative affect and only race/ethnicity was significantly associated with mindfulness.

The bulk of existing research on mindfulness and trauma has looked at the impact of mindfulness interventions on decreasing negative mental health symptomology (Ortiz & Sibinga, 2017). Those researchers did not, however, report information about the participants' mindfulness levels. Having an accurate picture of survivors' mindfulness levels, and whether

mindfulness varies significantly between survivors and non-survivors, is important to understanding the protective role that mindfulness may serve.

In one of the only studies to look at mindfulness outside of interventions, researchers found a link between trauma exposure, mindfulness, and anxiety (Tubbs et al., 2018). Among undergraduates who reported a traumatic experience in college, lower levels of dispositional mindfulness were significantly associated with increased anxiety (Tubbs et al., 2018). The significant interaction between trauma and anxiety was not present among trauma-exposed participants with higher levels of mindfulness (Tubbs et al., 2018). While the current study used a different conceptualization of trauma, the results were similar. The current study extends the findings from Tubbs and colleagues (2018) by exploring mindfulness among graduate students with trauma histories, by incorporating trauma experiences throughout the lifespan, and by comparing mindfulness levels between survivors and non-survivors. Both studies demonstrate the promise in exploring mindfulness as a protective factor for all levels of college students with trauma histories.

The current study's findings also support previous research that has indicated a significant relationship between trauma and negative affect. In studies of community and college student populations, researchers found that people with multiple ACEs reported higher levels of depression, anxiety, suicidal ideation, and stress than those with no ACEs (Felitti et al., 1998; Karatekin, 2018; Karatekin & Ahluwalia, 2016). Gender-based violence/harassment has comparable associations with negative affect. Studies of undergraduate students have demonstrated that those who experienced gender-based violence reported higher levels of PTSD, depression, anxiety, and stress than those with no experiences (Artime et al., 2018; Lindquist et al., 2013; Wood et al., 2018).

Building off of these previous research findings, the current study included both adult gender-based violence/harassment and ACEs in the same model. Because revictimization rates are high, adult gender-based violence/harassment and ACEs often co-occur (Conley et al., 2017; Messman-Moore et al., 2000; Smith et al., 2003). Researchers who study adult and childhood experiences separately cannot distinguish each factor's unique impact from their shared impact. The current study, however, showed that adult gender-based violence/harassment and ACEs each had significant associations with mindfulness and negative affect when the other was held constant.

The current study also expands upon researchers' knowledge of the cumulative impacts of trauma on mental health functioning. ACE researchers have consistently found a dose-response relationship between ACEs and functioning, where experiencing more ACEs is associated with worse outcomes (Anda et al., 2006; Felitti et al., 1998). The handful of studies that conceptualized gender-based violence/harassment the same way (counting the number of different types experienced) showed a similar trend (Amar & Gennaro, 2005; Banyard et al., 2017). Using that same approach, the current study showed an analogous dose-response relationship with adult gender-based violence/harassment and mental health functioning. Experiencing more types of gender-based violence/harassment was significantly associated with lower mindfulness and higher negative affect. This adds to the research on adult polyvictimization and expands the population of interest to graduate students.

Research Questions 4 and 5

Research Questions 4 and 5 focused on the subset of participants who experienced gender-based violence/harassment in graduate school and who provided information about how those experiences impacted their academic functioning ($n = 44$). The subsample was

demographically similar to the larger sample (see Tables 1 and 3), although there were proportionately more cisgender women, doctoral students, and health sciences students than in the larger sample. Over 80% of participants had experienced more than one type of gender-based violence/harassment, with the median being three types. Additionally, 34% had experienced four or more ACEs. Due to the way that data were collected in the original study, the specific type of gender-based violence/harassment experienced in graduate school could not be determined.

Overall, 75% of participants ($n = 33$) reported that experiencing gender-based violence/harassment in graduate school led to difficulties in academic functioning at least occasionally. The difficulties related to academic disengagement, poor academic outcomes, and academic isolation. The most commonly reported types of academic disengagement were trouble concentrating in class (66% of participants) and missing/skipping class or other academic obligations (41% of participants). Given the high level of rigor, the fast pace of instruction, and the expectation of participation and discussion in most graduate classrooms, even occasionally experiencing these difficulties can cause significant problems for graduate students. In fact, one-third of participants reported poor academic outcomes as a result of their gender-based violence/harassment experience, with 34% at least occasionally doing poor work or not turning in assignments and 30% seeing their grades suffer at least occasionally. Given that many graduate programs have strict expectations for academic performance, these experiences can be extremely detrimental to graduate students' standing in their programs.

Many participants also reported experiencing academic isolation. One-quarter said they at least occasionally avoided formal departmental or professional events because of the violence/harassment they experienced. Nearly half (43%) reported occasionally avoiding informal events, including 14% who reported avoiding such events many or most times. This

type of isolation can also be damaging to graduate students because it can cause them to miss out on valuable opportunities. To the author's knowledge, no other studies looking at this range of difficulties in academic functioning among graduate student survivors have been published. Thus, the descriptive results from this small sample add to the empirical evidence from undergraduate students (Banyard et al., 2017; Krebs et al., 2016) and the anecdotal evidence from graduate students (Kelskey, 2017b).

Participants who experienced difficulties in academic functioning at least occasionally had significantly lower mindfulness levels and significantly higher negative affect levels than participants whose gender-based violence/harassment experiences never resulted in academic difficulties. These results supplement previous research that has shown mindfulness may enhance academic functioning (Mrazek et al., 2013; Schwager et al., 2016) and that negative affect may hamper it (Boynton Health Service, 2018; Kernan et al., 2011). For example, researchers in one study found that mindfulness training increased cognitive functioning in undergraduates taking the GRE (Mrazek et al., 2013). Among participants whose minds frequently wandered, mindfulness helped increase cognitive functioning by reducing mind wandering (Mrazek et al., 2013). As two-thirds of the current study's sample reported trouble concentrating in class at least occasionally, the potential impact of increased mindfulness on mind wandering is an important consideration.

Regarding negative affect, research has consistently shown that college students, including graduate students, report mental health concerns such as depression, anxiety, and stress as negatively impacting their academics (Boynton Health Service, 2018; Kernan et al., 2011). These researchers, however, did not ask students to connect their mental health challenges to specific academic impacts. Additionally, the researchers did not include trauma or violence as

potential factors in their analyses. The current study's findings build upon the previous research by examining mindfulness, negative affect, and academic functioning among a specific sample of gender-based violence/harassment survivors.

Limitations

As with any study, the current study had limitations. The design was cross-sectional and nonexperimental, which means it had low internal and external validity because no variables were manipulated (McMillan, 2015). No causal links between gender-based violence/harassment, ACEs, mindfulness, negative affect, or difficulties in academic functioning should be inferred from the results. Additionally, the study relied on secondary data so there was no opportunity to improve the study's sampling method or measures.

Validity

Measurement validity refers to the appropriateness of the interpretation of scores within a specific context (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 2014; McMillan, 2015). The threats to measurement validity in the current study revolved around the sensitive nature and retrospective time frame of many of the questions. The measures included explicit, behaviorally-specific questions about unwanted sexual experiences and other forms of violence and trauma. Previous research has shown these types of questions are more accurate at collecting information on gender-based violence/harassment experiences than other forms of data collection (Koss et al., 2007; National Academies of Sciences, Engineering, and Medicine, 2018). It is still possible, however, that some respondents did not see their experiences reflected in the questions and therefore did not report them. It is also possible that some respondents found the wording of those questions triggering and skipped over the sections all together. The ACE scale included

questions about experiences prior to age 18, which therefore required retrospective answers. It is possible that some participants may have minimized or forgotten specific incidents from childhood, leading their responses to be less accurate. The climate survey team used previously validated measures and item-creation best practices to improve measurement validity, but the threats could not be completely eliminated.

The construction of the items that measured gender-based violence/harassment did not allow for differentiation between experiences that happened before graduate school and those that happened during graduate school. This allowed for a cumulative look at participants' gender-based violence/harassment experiences but not the specific timing of those experiences. Experiences as an undergraduate or in early adulthood were treated the same as experiences that occurred in graduate school. Timing, however, could have been an important factor in assessing the impact experiences had on survivors.

This study focused on cumulative adult gender-based violence/harassment among graduate students, not specifically on violence experienced in graduate school. The rates reported, therefore, do not indicate prevalence of gender-based violence/harassment that specifically occurred in graduate school. Additionally, operational definitions of types of gender-based violence/harassment differ between studies, which can effect prevalence rates. Comparing this study's prevalence-related findings with previous research should be done with caution and only when time frames and operational definitions align.

The construction of the DAFS scale also created limitations in the measurement of difficulties in academic functioning. Participants were directed to the DAFS through a separate screener question in an effort to streamline the survey process. Upon analysis, however, item response patterns revealed that participants who indicated experiencing gender-based

violence/harassment in graduate school in earlier questions did not appropriately answer the screener question. Therefore, they were unable to complete the DAFS items. As such, the sample size for analyses using DAFS data was extremely small and prohibited any statistical modeling of relationships. Additionally, the DAFS measured difficulties in academic functioning that survivors perceived were related to the gender-based violence/harassment they experienced in graduate school. Given the lack of previous research on this topic, the choice to focus on participant perceptions was intentional. However, this left the items open to broad interpretation from survivors who may have different perceptions and attributions about their experiences.

Generalizability

Sample characteristics, nonresponse bias, and participant breakoff (beginning but not completing the survey) limited the generalizability of the study's results.

Sample. The lack of diversity in the sample is one of the major limitations of the study. Participants were randomly selected, and no efforts were made to oversample any specific demographic group. This resulted in an overall sample comprised predominantly of white, heterosexual, cisgender women. The small number of respondents with marginalized gender, sexual orientation, and racial/ethnic identities limited the understanding that could be gained from group comparisons and analyses. Though patterns among demographic groups were noted, determining statistical significance between groups was not possible. More importantly, lack of representation of students of color, sexual minority students, and trans and gender non-conforming students made it difficult to explore gender-based violence/harassment within the context of students' intersecting identities. Important questions, such as whether survivors from marginalized groups experience more or different difficulties in academic functioning than survivors from dominant identity groups, remain unanswered.

The study's sample came from a single large, urban, public, medical and research university in the southeastern United States. Differences in institutional and student characteristics would likely impact the validity of the findings if extended to other institutions. For example, the high prevalence of ACEs within the sample may be a function of the backgrounds, experiences, and fields of interest of the students who attended the specific institution as opposed to graduate students in general. Findings should not be generalized to undergraduates at any institution, given the differences in life and academic circumstances between graduate and undergraduate students (Rosenthal et al., 2016).

Nonresponse bias. Although the study's participants were randomly selected, self-selection and nonresponse bias still threatened the generalizability of the findings (Keeter, 2018). The response rate, while similar to those of other campus climate studies of graduate students (Cantor et al., 2015), shows that the majority of students selected chose not to participate. During analysis, descriptive statistics of the sample's race/ethnicity and gender identity were compared to those of the institution to assess the demographic representativeness of the respondents. The percentage of cisgender women respondents in the survey was slightly higher than that of the graduate student population of the institution (State Council of Higher Education for Virginia, 2019); this appears to be a typical trend in this type of research (Cantor et al., 2015; Krebs et al., 2016). Doctoral students were overrepresented and professional students were underrepresented in the sample as compared to their proportion in the institution. This means that the unique educational context and experiences of professional students were diluted during analysis.

Since the survey was anonymous, it was not possible to determine other differences between those who participated and those who did not, or whether differences impacted the overall data. Some prior research has indicated that survivors may be more likely to participate in

gender-based violence/harassment surveys than non-survivors (Cantor et al., 2015). It is also possible that certain types of survivors were more likely to respond than others, which would result in some self-selection bias.

Participant breakoff. The original survey was long, and therefore participant breakoff is a potential limitation. Completion was defined as answering at least one ACE-related question, at least one gender-based violence/harassment question, completing at least 80% of the MAAS and DASS, and answering the gender-identity, sexual orientation, and race/ethnicity questions. The survey's completion rate was 83%, which suggested participant breakoff may not be a large limitation (Krebs et al., 2016; Swartout et al., 2018). The climate survey team shortened existing measures and limited the amount of detail requested in relation to incidences of violence and trauma in an effort to minimize participant attrition. However, the nature of the survey meant that survivors of graduate school gender-based violence/harassment had the most questions to answer. The length of the survey, combined with the sensitive nature of the questions discussed above, could have been a barrier that caused some participants to end their participation early.

Implications for Practice

The current study showed high rates of gender-based violence/harassment and ACE experiences, as well as significant impacts of those experiences on graduate student mental health and academic functioning. To address these implications, higher education administrators and student affairs professionals should enact trauma-informed policies, programs, and services (Conley & Griffith, 2016; McCauley & Casler, 2015; Webb et al., 2018) at all levels of graduate education. These efforts would positively impact both individual student experiences and the larger academic and professional pipelines.

This study is one of the first to empirically highlight the trauma histories of graduate students. Students are not “blank slates” when they arrive on campus (McCauley & Casler, 2015, p. 584). They bring with them their past experiences and their current out-of-classroom experiences, including those that are trauma related. By virtue of making it to graduate school, graduate students have proven themselves to be competent and resilient. Yet, many of them function within their academic programs while dealing with current and past trauma. Indeed, one in five respondents in this study made it to graduate school despite having a significantly increased risk of negative physical and mental health problems due to their ACE history. Experiencing more types of gender-based violence/harassment and/or more ACEs was associated with higher levels of negative affect and lower levels of mindfulness. Because mindfulness has been shown to mitigate mental health concerns (Beck et al., 2017; Stillwell et al., 2017; Tubbs et al., 2018), graduate students with trauma histories would benefit from higher levels. However, the current study showed they possessed the lowest levels of mindfulness.

Students may not recognize the impact that their past experiences have on their current functioning. Coping skills that helped them reach graduate school might not be healthy or may no longer be effective. Even students who recognize the negative impact their past experiences have on their current functioning may be reluctant to disclose to professors or advisors for fear they will be judged or face negative repercussions.

For all of the above reasons, graduate student survivors who could benefit from help and support may not seek it from resources at their institution. The high frequency with which graduate students in the current study reported adult gender-based violence/harassment and ACEs means that student affairs professionals and faculty members often work with survivors whether or not they realize it. Additionally, marginalized students are often more vulnerable to

the negative impacts of trauma than students from dominant identity groups (Linder & Harris, 2017; National Academies of Sciences, Engineering, and Medicine, 2018). Student affairs professionals and faculty members, therefore, should use a trauma-informed lens when working with all graduate students. Trauma-informed approaches are based in an understanding of the pervasive impacts of trauma and intentional work to support and not re-traumatize those with trauma histories (Webb et al., 2018). Utilizing trauma-informed approaches ensures a supportive and healthy environment for everyone, including those who have not experienced trauma.

In line with the current study's critical and cognitive adult learning theoretical framework, working through a trauma-informed lens highlights both the structural and individual aspects of gender-based violence/harassment and academic functioning. Faculty, administrators, and survivors themselves often see trauma experiences as manifesting in individual-level cognitive problems with learning and engagement. This, however, is only part of the picture. Structural-level problems exacerbate individual-level problems, and therefore require structural-level solutions. Student interactions with faculty members and administrators, as well as their access to support resources, are shaped by departmental, institutional, and societal power structures. Oppressions such as racism, sexism, transphobia, homophobia, and xenophobia constrain marginalized students' abilities move through those power structures while facilitating the abilities of dominant-identity students. They compound the difficulties marginalized survivors already face as a result of the gender-based violence/harassment they experienced. Students themselves do not have control over the structures and cannot individually create structural-level change. Solutions need to be instigated by faculty and administrators and implemented on a structural level.

Student affairs professionals should proactively engage with graduate students throughout their academic careers regarding adult gender-based violence/harassment and ACEs. This includes widely publicizing information about the impacts of those experiences and explicitly informing graduate students about available services for experiences that occurred outside of the institution. Gender-based violence prevention educators should tailor programs to the unique context of graduate students, including the likelihood they experienced previous trauma.

Although faculty members often do not have the same student development training as student affairs professionals, they can still use a trauma-informed approach in their work. This includes educating themselves on the impact that past trauma has on students and incorporating that knowledge into their pedagogical approach. At a minimum, this should include creating supportive environments within their classrooms and labs, as well as advocating for graduate students to have barrier-free access to appropriate supportive services, including academic support.

The difficulties in academic functioning that survivors in the current study reported also have implications for both academic and professional pipelines. Direct connections between gender-based violence/harassment and degree completion were difficult to ascertain through the current study because information could not be collected from students who had already left the institution. This is a common challenge in the broader research, meaning that little is known about graduate students who leave institutions because of gender-based violence/harassment. Personal accounts, such those submitted to the *Crowdsourced Survey of Sexual Harassment in the Academy* (Kelskey, 2017b), provide informal information. Research among undergraduate students has shown that experiencing gender-based violence/harassment can lead to higher rates

of dropping out (Mengo & Black, 2016). If the same logic holds true for graduate students, then the students most negatively impacted by gender-based violence/harassment may not have been represented in the survey because they no longer attended the institution.

The current study did include questions about participants' perceptions of whether or not their gender-based violence/harassment experiences led to delays in degree completion. Only a small portion of participants reported occasionally or sometimes experiencing delays. They reported other difficulties, however, more frequently. Those challenges, such as difficulty concentrating in class and doing poor work, are less dramatic than outright delays in degree completion. However, those difficulties can still negatively impact graduate students' standing in their programs. Participants also commonly reported avoiding formal and informal departmental and professional activities, which can lead them to miss valuable opportunities. Overall, difficulties in academic functioning can negatively impact survivors' academic experience and trajectory. Even if survivors complete their program of study, they may be less likely to stay in the academy or in their professions (National Academies of Sciences, Engineering, and Medicine, 2018).

As suggested by others, institutional leaders need to establish and enforce effective policies to prevent gender-based violence/harassment perpetrated by students and employees (National Academies of Sciences, Engineering, and Medicine, 2018; White House Task Force to Protect Students from Sexual Assault, 2014). This alone, however, will not increase pipeline diversity. Based off of the data collected in this study, trans and gender non-conforming participants, cisgender women, and sexual minority students reported disproportionately more adult gender-based violence/harassment and childhood adversity than cisgender men and heterosexual students. By addressing trauma experienced across the lifespan as a factor that

significantly impacts students' mental health and academic functioning, administrators can more effectively increase diversity in the pipeline and support the wellbeing of their students.

Recommendations for Future Research

The current study provides an exploratory foundation upon which to build future research. More research is needed into the prevalence of gender-based violence/harassment during graduate school. This research should include diverse participants, institutions, and programs of study. In particular, researchers should intentionally center sexual, gender, and racial/ethnic minority participants in their research. Power structures, and the people who uphold them, marginalize these students in a variety of overlapping ways. Researchers need to be able to more accurately capture prevalence rates within identity subgroups, as well as to integrate an understanding of gender-based violence/harassment experiences in the context of other experiences of oppression and marginalization.

More research is necessary to better understand the impact of gender-based violence/harassment on overall graduate student functioning, and particularly on academic functioning. The current study presented strong evidence that both gender-based violence/harassment and ACEs are significantly and independently associated with mindfulness and negative affect. The analyses did not, however, include any interaction effects between gender-based violence/harassment and ACEs or between mindfulness and negative affect. Researchers should explore those interactions, as well as other facets of graduate student mental health. This study did not include information on resource utilization among graduate students, which could also be a factor in how experiences impact them. Researchers should look at graduate student survivor help-seeking behavior as a potential mediating factor in the path between gender-based violence/harassment and academic functioning.

Researchers should specifically examine academic functioning in a holistic, trauma-informed, and graduate student-centered form. The DAFS findings in the current study suggested that gender-based violence/harassment does negatively impact graduate student academic functioning. The scores on the Likert-type scale, however, did not show great range or variability. Potential reasons include the small sample size, the method of measurement, and the specific items chosen for the scale. Qualitative research that either builds off of the DAFS findings or uses a more inductive approach would add much needed depth to the current understanding of graduate student survivor academic functioning.

Additionally, lack of diversity in the sample meant that it was not possible to determine how difficulties in academic functioning may have differed by identity characteristics. Given that many students from marginalized identity groups face academic challenges caused by discrimination, violence, and mistreatment (Alexander & Hermann, 2015; Hubain et al., 2016; McCoy et al., 2015), it is likely that graduate student survivors from marginalized groups have different experiences of academic functioning difficulties than their peers with more identity privilege. Researchers should investigate gender-based violence/harassment and academic functioning within marginalized identity groups so that students' voices and experiences are made visible within the broader research. Qualitative research, as mentioned previously, can add needed depth to understanding the experiences of marginalized graduate student survivors. Quantitative research that compares experiences across identity groups can highlight the various ways that interlocking systems of oppression shape graduate student survivor academic difficulties.

To date, researchers have not comprehensively investigated the impact of gender-based violence/harassment, childhood adversity, mindfulness, and negative affect on graduate students'

academic functioning. Critical and cognitive adult learning theories suggest that experiencing trauma can lead to difficulties in academic functioning through both learned trauma responses and information processing impairments (Kerka, 2002; Perry, 2006). Both theories support the existence of a mediated relationship where experiencing gender-based violence/harassment in graduate school negatively impacts academic functioning through prior trauma, current levels of mindfulness, and current levels of negative affect.

In the current study, experiencing more types of gender-based violence/harassment and/or ACEs was associated with lower mindfulness. Previous research has shown that higher levels of mindfulness have been associated with increased cognitive functioning in general student populations (Mrazek et al., 2013; Schwager et al., 2016) and with higher physical and mental health wellbeing in trauma survivors (Ortiz & Sibinga, 2017; Whitaker et al., 2014). The current study also found that experiencing more types of gender-based violence/harassment and/or ACEs was associated with higher negative affect. While not directly tested among graduate students, negative affect has been repeatedly listed as a perceived cause of academic challenges (Boynnton Health Service, 2018; Hyun et al., 2006; Kernan et al., 2011). This finding is in line with cognitive load theory, which posits that experiencing anxiety and stress uses up the limited amount of cognitive processing available at any one time (Sweller, 2012). This overload leaves the individual with less cognitive processing capabilities for learning (Sweller, 2012).

The current study's findings provided at least some support for the theorized relationships between mindfulness, negative affect, and academic functioning among graduate student survivors. Within the subset of participants in the current study who experienced gender-based violence/harassment in graduate school, those whose trauma never led to difficulties in academic functioning had significantly higher levels of mindfulness and significantly lower levels of

negative affect than those who experienced at least occasional difficulties in academic functioning.

Taken together, the current study’s findings provide preliminary support for the theoretical connections between gender-based violence/harassment, childhood adversity, negative affect, mindfulness, and difficulties in academic functioning. Figure 2 depicts a potential path model illustrating these connections. Future researchers should test the model using a sample size large enough to have adequate statistical power. They should also collect information on prior adult victimization and graduate school gender-based violence/harassment separately in order to incorporate timing of trauma. Additionally, research should ensure adequate sample sizes for marginalized groups, such as trans and gender non-conforming students, sexual minority students, and students of color, so that their experiences will be visible within the model.

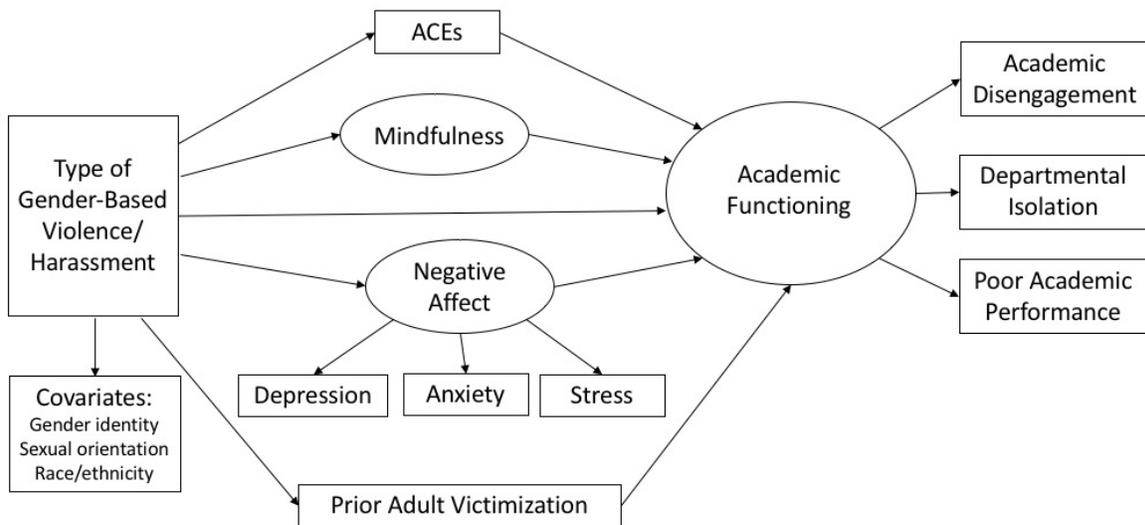


Figure 2. Hypothesized model of the relationship between gender-based violence/harassment and academic functioning.

Conclusion

The purpose of this exploratory study was to address gaps in the literature related to the relationships between academic functioning, mindfulness, and negative affect in the context of the adverse childhood and adult gender-based violence experiences of graduate students. To better understand the scope of the problem, the frequency of adult gender-based violence/harassment and ACEs within the sample was measured. The data showed that both adult gender-based violence/harassment and ACEs were widespread among the sample of graduate students. Additionally, participants commonly experienced both polyvictimization and revictimization. These types of incidents have therefore touched the lives of many graduate students.

Next, the impacts of gender-based violence/harassment and ACEs on participants' mental health were investigated. Results showed that gender-based violence/harassment and ACEs were related to both mindfulness and negative affect. Specifically, experiencing more types of gender-based violence/harassment was significantly associated with lower mindfulness levels and higher negative affect levels. The same pattern was true when looking at mindfulness and negative affect in the context of number of ACEs. Next, mindfulness and negative affect levels were explored within a specific subset of participants who reported experiencing gender-based violence/harassment in graduate school. Those who reported that their experience of violence/harassment led to difficulties in academic functioning had significantly lower mindfulness levels and significantly higher negative affect levels than those who reported no academic difficulties.

While the data did not allow the testing of a complete statistical model, the exploratory analyses did show significant associations that merit further research. These relationships are also supported by critical and cognitive learning theories which suggest that trauma negatively

impacts academic functioning through both learned behaviors and information processing difficulties. Continuing this line of research in a way that centers the experiences of marginalized students is critical to both understanding the causal relationships between the variables and to creating effective interventions to help all survivors.

In conclusion, student affairs professionals and higher education administrators need to familiarize themselves with the impacts of gender-based violence/harassment and ACEs on graduate students and implement trauma-informed policies, programs, and services. The results of this study show that faculty members and student affairs professionals will likely work with survivors, whether or not survivors disclose to them or intentionally seek help because of the impacts of the trauma. The majority of graduate students in the current study experienced at least one type of adult gender-based violence/harassment or ACEs, and a substantial number experienced multiple types. Trans and gender non-conforming students and cisgender women reported these experiences at particularly high rates. Additionally, many participants who experienced gender-based violence/harassment while in graduate school dealt with academic disengagement, academic isolation, and poor academic outcomes. Minimizing these barriers and supporting students who have experienced adult gender-based violence/harassment and ACEs will help improve those students' academic experiences and overall wellbeing. Those actions will also positively impact the long-term academic and professional pipelines.

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Appendix A

Survey Introduction Page

One of [Institution]'s primary commitments is to maintain and enhance a safe and supportive campus community. To help achieve that goal we want to better understand [Institution] student beliefs, behaviors, and experiences related to aspects of sexual violence.

The purpose of this survey is to improve the sexual violence prevention programming and response services for [Institution] students. You are being asked to participate in this survey because you are a student at [Institution].

If you agree to participate, you will be asked to complete an anonymous online survey that should take about 20-30 minutes to complete. This survey specifically asks very personal questions about your thoughts on the [Institution] campus climate, beliefs surrounding intervening when you see someone in trouble, and sexual behaviors including those you did not want.

Whether or not you complete or withdraw from the survey prior to its completion, you will be given the opportunity to *enter a drawing for one of twenty \$100 Amazon gift cards and a free semester of parking.*

The information in the survey records will be kept anonymous. During the administration of the survey, all data will be collected and stored on a secure server. None of the survey questions asks you to identify yourself, and the online survey will not even collect IP addresses. If you choose to enter the optional raffle drawing at the end, contact information for the raffle will be stored completely separate from the survey responses.

You do not have to participate in this survey. If you choose to participate, you may stop at any time without any penalty.

If you have any questions, complaints, or concerns about your participation in this [Institution] initiative, contact:

[Contact person, position, email address]

For additional resources click here: [link to institutional resources]

Appendix B

Informed Consent Page

CONSENT

The survey has been described to me and I understand that my participation is voluntary and that I am free to discontinue my participation in the project at any time without penalty.

I also understand that the results of the survey will be completely anonymous, and reported only in group form. I understand that if I have any questions or concerns about this survey, I may pose them to [Contact person, title, email address].

I have read and understand the above information and I agree to take this survey. Additionally, I certify that I am 18 years of age or older.

Do you consent to participate in this study?

- 1, Yes, I agree; I wish to begin the survey
- 2, No, I do not agree; I do not wish to participate

Appendix C

[Institution] Campus Climate Survey on Sexual Violence and Bystander Intervention: Graduate Student Version

The specific items used in the current study are included below.

Part 2: Childhood Experiences

The next set of questions asks you to recall experiences from your childhood, during your first 18 years of life.

While you were growing up, **during your first 18 years of life:**

	Yes	No
a. Did a parent or other adult in the household often or very often swear at you, insult you, put you down, or humiliate you? Or act in a way that made you afraid that you might be physically hurt?		
b. Did a parent or other adult in the household often or very often push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?		
c. Did someone who was an adult and at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way, or attempt or actually have oral, anal, or vaginal intercourse with you?		
d. Did you often or very often feel that no one in your family loved you or thought you were important or special? Or your family didn't look out for each other, feel close to each other, or support each other?		
e. Did you often or very often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? Or your parents or other adults in your house were too drunk or high to take care of you or take you to the doctor if you needed it?		
f. Were your parents ever separated or divorced?		
g. Was a parent or other adult in your house often or very often pushed, grabbed, slapped, or had something thrown at them? Or sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? Or ever repeatedly hit at least a few minutes or threatened with a gun or knife?		
h. Did you live with anyone who was a problem drinker or alcoholic, or who used illegal drugs or abused prescription medications?		
i. Was a household member depressed, mentally ill, or suicidal?		
j. Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?		
k. Did someone who was near your own age ever touch you in a sexual way, make you touch them in a sexual way, or have or try to have oral, anal, or vaginal sex with you when you did not want them to?		
l. Did a casual, steady or serious dating or intimate partner emotionally abuse you (for example, called you derogatory names, yelled at you, or ridiculed you		

when you knew they were not joking), threaten you (or someone you care about), or physically hurt you (for example, hit, kicked, punched, slapped, slammed against wall, etc.)?		
m. Did anyone – from a stranger to an ex-partner – repeatedly follow you, watch you, call, write, email, text, or communicate with you on social media or in other ways online or in person that seemed obsessive and/or made you afraid or concerned for your safety?		

Part 3: Adult Experiences

Please read the following questions about experiences you may have had as an adult. Please answer whether or not you had each experience after you turned 18-years-old and either before you enrolled as a graduate student at [Institution] or while you have been a graduate student at [Institution] (whether it happened on- or off-campus, during the summer, while on vacation, or any other time).

	Pre-	At	Never
a. Has anyone misgendered you, harassed you, or mistreated you due to your gender expression or gender identity?			
b. Has an individual or a group communicated hostile or aggressive messages intended to inflict harm or discomfort to you through electronic or digital media?			
c. Has anyone with academic power or authority over you (e.g. a professor, advisor, TA, dissertation chair, etc.) made obscene, inappropriate, or offensive remarks about your body or sexual activities, made unwanted sexual advances toward you, or used their position to offer special treatment or threaten punishment in exchange for sexual favors?			
d. Excluding any situation(s) described by the item above, has anyone else made unwanted sexual advances toward you, made obscene, inappropriate, or offensive remarks about your body or sexual activities, or offered special treatment or threatened punishment in exchange for sexual favors?			
e. Have you been raped?			
f. Has a casual, steady or serious dating or intimate partner physically threatened or hurt you (for example, scratched, slapped, physically twisted arm, slammed or held against a wall, kicked, bent fingers, bit, tried to choke, pushed, grabbed, shoved, dumped out of a car, threw something that hit me, burned, hit with a fist, hit with something hard, beat up or assaulted with knife or gun)?			
g. Has a casual, steady or serious dating or intimate partner emotionally abused you (for example, called you derogatory names, yelled at you, or ridiculed you; this does not include times you knew they were joking around)?			
h. Has anyone – from a stranger to an ex-partner – repeatedly followed you, watched you, phoned, written, or communicated in			

other ways (that do not include digital/electronic communication) that seemed obsessive and/or made you afraid or concerned for your safety?			
i. Has anyone – from a stranger to an ex-partner – repeatedly emailed, texted, or communicated with you on social media or in other ways online that seemed obsessive and/or made you afraid or concerned for your safety?			
j. Has an individual or a group communicated hostile or aggressive messages intended to inflict harm or discomfort to you through electronic or digital media?			

The next set of questions asks you to recall certain sexual experiences you might have had **since you first enrolled as a graduate student at [Institution]**. This includes **any time** since you first enrolled, whether they happened on or off campus, during the summer, while on vacation, or any other time.

For each statement, please indicate whether or not each of the experiences has happened to you under those specific conditions. If several conditions were present during a single experience - for example, if one night you had sex with someone who told you lies and you were too drunk to stop what was happening, then you would check “yes” for **both** “telling lies... and “taking advantage of when too drunk...” below.

Please answer whether or not each of the following incidents occurred while you were enrolled as a [Institution] graduate student (including summer). QUESTION: Someone fondled, kissed, or rubbed up against the private areas of my body (lips, breast/chest, crotch, or butt) or removed some of my clothes without my consent (but did not attempt sexual penetration) by:	Pre-	At	Never
a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.			
b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.			
c. Taking advantage of me when I was too drunk or out of it to stop what was happening.			
d. Threatening to physically harm me or someone close to me.			
e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.			

Please answer whether or not each of the following incidents occurred while you were enrolled as a [Institution] graduate student (including summer).	Pre-	At	Never
QUESTION: Even though it didn't happen, someone TRIED to have oral sex with me or make me have oral sex with them without my consent by:			
a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.			
b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.			
c. Taking advantage of me when I was too drunk or out of it to stop what was happening.			
d. Threatening to physically harm me or someone close to me.			
e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.			

Please answer whether or not each of the following incidents occurred while you were enrolled as a [Institution] graduate student (including summer).	Pre-	At	Never
QUESTION: Someone had oral sex with me, or made me have oral sex with them without my consent by:			
a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.			
b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.			
c. Taking advantage of me when I was too drunk or out of it to stop what was happening.			
d. Threatening to physically harm me or someone close to me.			
e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.			

The next two questions are for people who have vaginas. If you do not have a vagina, please check no.

Do you have a vagina? __Y __N ***[branching logic for Yes answers]

**Please answer whether or not each of the following incidents occurred while you were enrolled as a [Institution] graduate student (including summer). QUESTION: Even though it didn't happen, a person TRIED to put their penis into my vagina, or someone tried to stick fingers or objects into my vagina without my consent by:	Pre-	At	Never
a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.			
b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.			
c. Taking advantage of me when I was too drunk or out of it to stop what was happening.			
d. Threatening to physically harm me or someone close to me.			
e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.			

**Please answer whether or not each of the following incidents occurred while you were enrolled as a [Institution] graduate student (including summer). QUESTION: A person put their penis into my vagina, or someone inserted fingers or objects into my vagina without my consent by:	Pre-	At	Never
a. Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.			
b. Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.			
c. Taking advantage of me when I was too drunk or out of it to stop what was happening.			
d. Threatening to physically harm me or someone close to me.			
e. Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.			

Please answer whether or not each of the following incidents occurred while you were enrolled as a [Institution] graduate student (including summer). QUESTION: Even though it didn't happen, a person TRIED to put their penis into my butt, or someone tried to stick objects or fingers into my butt without my consent by:	Pre-	At	Never

a.	Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.			
b.	Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.			
c.	Taking advantage of me when I was too drunk or out of it to stop what was happening.			
d.	Threatening to physically harm me or someone close to me.			
e.	Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.			

Please answer whether or not each of the following incidents occurred while you were enrolled as a [Institution] graduate student (including summer).		Pre-	At	Never
QUESTION: A person put their penis into my butt, or someone inserted fingers or objects into my butt without my consent by:				
a.	Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.			
b.	Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.			
c.	Taking advantage of me when I was too drunk or out of it to stop what was happening.			
d.	Threatening to physically harm me or someone close to me.			
e.	Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.			

If you had any of the experiences listed in the "Adult Experiences" section while you were a graduate student at [Institution], please answer "Yes" to continue to questions related to resource use and academic impacts.

If you did not have any of those experiences while a graduate student at [Institution], please answer "No" to be taken directly to questions about programming.

Did you answer "yes" to any of the questions in the previous section (Adult Experiences) while you were a graduate student at [Institution]?

- Yes
- No

[Only participants who answered ‘Yes’ to the question above received this set of questions]
 The following questions ask how the experiences that happened while you were a graduate student at [Institution] impacted you academically. As a result of the experiences, how often have you:

	Never	Occasionally	A few times	Many times	Most of the time
a. Had trouble concentrating in class?	1	2	3	4	5
b. Missed or skipped class or other academic obligations?					
c. Attended class when drunk or high?					
d. Done poor work or not turned in assignments?					
e. Experienced delays in your degree completion timeline?					
j. Been denied access to opportunities such as funding, authorship on manuscripts, letters of recommendation, etc.?					
k. Avoided formal departmental or professional events such as conferences, seminars, etc.?					
l. Avoided informal departmental or professional events, such as networking sessions, career talks, happy hours, etc.?					
f. Dropped or thought about dropping one or more classes?					
g. Chosen not to take a certain class to avoid the person who harmed you?					
h. Your grades or GPA suffered?					
i. Considered leaving [Institution] (transferring, dropping out, etc.)?					

Section 5: Day-to-Day Experiences

Please read each statement and select the frequency that indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement, but please answer each question.

	Did not apply to me at all	Applied to me to some degree, or	Applied to me to a considerable	Applied to me very much, or

		some of the time	degree, or a good part of the time	most of the time
a. I found it hard to wind down	0	1	2	3
b. I was aware of dryness of my mouth	0	1	2	3
c. I couldn't seem to experience any positive feeling at all	0	1	2	3
d. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
e. I found it difficult to work up the initiative to do things	0	1	2	3
f. I tended to over-react to situations	0	1	2	3
g. I experienced trembling (e.g., in the hands)	0	1	2	3
h. I felt that I was using a lot of nervous energy	0	1	2	3
i. I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
j. I felt that I had nothing to look forward to	0	1	2	3
k. I found myself getting agitated	0	1	2	3
l. I found it difficult to relax	0	1	2	3
m. I felt down-hearted and blue	0	1	2	3
n. I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
o. I felt I was close to panic	0	1	2	3
p. I was unable to become enthusiastic about anything	0	1	2	3
q. I felt I wasn't worth much as a person	0	1	2	3
r. I felt that I was rather touchy	0	1	2	3
s. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3

Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

	Almost Always	Very Frequently	Somewhat Frequently	Fairly Often	Very Infrequently	Almost Never
a. I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
b. I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
c. I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
d. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
e. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
f. I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
g. It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
h. I rush through activities without being really attentive to them.	1	2	3	4	5	6

i. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
j. I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
k. I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
l. I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
m. I find myself preoccupied with the future or the past.	1	2	3	4	5	6
n. I find myself doing things without paying attention.	1	2	3	4	5	6
o. I snack without being aware that I'm eating.	1	2	3	4	5	6

Part 6: Demographic Questions

Which best describes your race/ethnicity? (check all that apply)

- American Indian or Alaska Native
- Asian American/Asian
- Black/African American
- Hispanic/Latinx
- Middle Eastern or North African
- Native Hawaiian or Other Pacific Islander
- White/Caucasian
- Self-identify (please describe) _____

What sex were you assigned at birth?

- Female
- Male
- Other (please describe)

Which best describes your gender identity? (check all that apply)

- Transgender Woman

- Transgender Man
- Cisgender Woman
- Cisgender Man
- Genderqueer, gender non-conforming, or non-binary
- Questioning
- Decline to state
- Self-identify (please describe)

For gender identity:

“Transgender” is a term used to describe people whose gender identity differs from the sex the doctor marked on their birth certificate.

“Cisgender” refers to people whose sex at birth and current gender identity are aligned.

“Genderqueer” and “non-binary” can refer to those who have sex-gender incongruence, or may not experience gender as either woman or man.

“Gender nonconforming” refers to gender expression that does not match the gender norms of the gender they are perceived to be by society.

“Questioning” is the process of exploring and discovering one’s own gender identity or gender expression.

Which best describes your sexual orientation? (check all that apply)

- Gay
- Lesbian
- Bisexual
- Asexual
- Pansexual
- Queer
- Heterosexual/straight
- Decline to state
- Self-identify (please describe) _____

What is your age range?

- Under 25 years old
- 25-30 years old
- 31-39 years old
- 40-49 years old
- 50+ years old

What degree type are you pursuing?

- Master’s degree
- Doctoral degree
- Professional degree
- Other (please specify) _____

On which campus is your degree program housed?

- [Academic] Campus
- [Health Sciences] Campus
- Entirely Online

Appendix D

Sexual Violence Resources

If you have any questions at all or if responding to the survey caused you distress, we encourage you to contact any of the following on- or off-campus resources.

For information on Title IX and the [Institution Policy]: [website link]

Confidential Campus Resources

The following campus departments offer confidential services. This means that staff members from these departments will not share your personal information without your consent.

Institution Counseling Center

Institution Student Health Center

Non-Confidential Campus Resources

Campus Police

Title IX Office

Local/Community Resources

Medical Resources (PERK exams)

Local hospitals

Counseling and Advocacy Services

Local crisis hotline

State and National Hotlines

Appendix E

Survey Invitation and Reminder Emails

Survey Invitation Email

Dear [Institution] Student:

One of [Institution]'s primary commitments is to maintain and enhance a safe and supportive campus community. To help achieve that goal we want to better understand [Institution] student beliefs, behaviors, and experiences related to aspects of sexual violence. You have been randomly selected to complete a brief survey addressing these issues. This survey specifically asks very personal questions about both welcomed and unwelcomed sexual behaviors you may have experienced since enrolling at [Institution]. We encourage you to take the time to complete this survey, regardless of your past sexual experiences. A high response rate will help ensure that the results of the survey are representative of the [Institution] student population as a whole. You are the experts about your community - we need you!

While **your participation is completely voluntary and anonymous**, providing us with your views and opinions will help assure that we have the most accurate data possible to create and/or enhance safety-related programming for the entire campus.

In appreciation of your consideration, we will be randomly selecting 20 students who complete the survey to win a **\$100 Amazon Gift Card** and one student will win **1 free semester of parking!**

Be assured that all of your responses are anonymous! None of the survey questions ask you to identify yourself, and the online survey will not even collect IP addresses. If you choose to enter the optional raffle drawing at the end, contact information for the raffle will be stored completely separate from the survey responses.

It should only take about 30 minutes to complete the survey.

Please be sure to complete the survey by **Wednesday, November 21st** to be eligible to win any of the above prizes! Thank you in advance for your time and cooperation. If you have any questions about the survey or if you are unable to view this survey for any reason, please feel free to contact **[name and email address]** to get a printed copy, or to make alternative arrangement to complete the survey. **If you would like to opt out, please reply to this message with the phrase "opt out."**

[Link to institutional resources]

You may open the survey in your web browser by clicking the link below:

If the link above does not work, try copying the link below into your web browser:

This link is unique to you and should not be forwarded to others.

Reminder Email #1

Dear [Institution] student:

It is very important that we have as much input as possible in making decisions that affect our campus community. Recently we sent you an email requesting your **anonymous participation** in an important survey we are doing on campus. We hope you take the opportunity now to participate, in order that the data we collect, and any programs and services that may result from it, are informed by the most accurate information possible.

While **your participation is completely voluntary and anonymous**, your participation in the survey will help assure that we have the most representative and accurate data to create and/or enhance programming for the entire campus.

In appreciation of your consideration, we will be randomly selecting 20 of you who take the survey to win a **\$100 Amazon Gift Card** and one student will win a **free semester of parking!**

Be assured that all of your responses are anonymous! None of the survey questions ask you to identify yourself, and the online survey will not even collect IP addresses. If you choose to enter the optional raffle drawing at the end, contact information for the raffle will be stored completely separate from the survey responses.

Please be sure to complete the survey by **Wednesday, November 21st** to be eligible to win any of the above prizes! Thank you in advance for your time and cooperation. If you have any questions about the survey or if you are unable to view this survey for any reason, please feel free to contact [name and email address] to get a printed copy, or to make alternative arrangement to complete the survey. If you would like to opt out, please reply to this message with the phrase "opt out."

[Link to institutional resources]

You may open the survey in your web browser by clicking the link below:

If the link above does not work, try copying the link below into your web browser:

This link is unique to you and should not be forwarded to others.

Reminder Email #2

Dear [Institution] Student:

Time is running out to contribute to this important campus safety programming effort at

[Institution]. YOU are the expert in your community. In order for our results to be representative, and accurately inform future programming at [Institution], we need your help!

In appreciation of your time, we will be randomly selecting **20** of you who take the survey to win a **\$100 Amazon Gift Card** and one student will win a **free semester of parking!**

Be assured that all of your responses are anonymous! None of the survey questions ask you to identify yourself, and the online survey will not even collect IP addresses. If you choose to enter the optional raffle drawing at the end, contact information for the raffle will be stored completely separate from the survey responses.

Please be sure to complete the survey by **Wednesday, November 21st** to be eligible to win! Thank you in advance for your time and cooperation. If you have any questions about the survey or if you are unable to view this survey for any reason, please feel free to contact [name and email address] to get a printed copy, or to make alternative arrangement to complete the survey. If you would like to opt out, please reply to this message with the phrase "opt out."

[Link to institutional resources]

You may open the survey in your web browser by clicking the link below:

If the link above does not work, try copying the link below into your web browser:

This link is unique to you and should not be forwarded to others.

Final Reminder Email

Dear [Institution] Student:

Time is running out to contribute to this important campus safety programming effort at [Institution]. YOU are the expert in your community. In order for our results to be representative, and accurately inform future programming at [Institution], we need your help!

In appreciation of your time, we will be randomly selecting **20** of you who take the survey to win a **\$100 Amazon Gift Card** and one student will win a **free semester of parking!**

Be assured that all of your responses are anonymous! None of the survey questions ask you to identify yourself, and the online survey will not even collect IP addresses. If you choose to enter the optional raffle drawing at the end, contact information for the raffle will be stored completely separate from the survey responses.

Please be sure to complete the survey by **TOMORROW Wednesday, November 21st** to be eligible to win! Thank you in advance for your time and cooperation. If you have any questions about the survey or if you are unable to view this survey for any reason, please feel free to contact [name and email address] to get a printed copy, or to make alternative arrangement to

complete the survey. If you would like to opt out, please reply to this message with the phrase "opt out."

[link to institutional resources]

You may open the survey in your web browser by clicking the link below:

If the link above does not work, try copying the link below into your web browser:

This link is unique to you and should not be forwarded to others.

Vita

Jennifer Wilkinson Underwood was born on June 22, 1978 in Waco, Texas and is an American citizen. She graduated from Radford High School in Radford, VA in 1996. She earned her Bachelor of Arts in Integrative Studies degree from George Mason University in 1999 and her Master of Social Work degree from the University of North Carolina at Chapel Hill in 2001. She worked as a sexual and domestic violence advocate and educator at Project Horizon, Inc. in Lexington, VA from 2001-2005. She then worked as a gender-based violence prevention educator and advocate at the Women's Center at Virginia Tech in Blacksburg, VA from 2006-2014. While a graduate student at Virginia Commonwealth University, she worked as a research assistant in the Department of Counseling and Special Education and as a graduate assistant in the Division of Student Affairs.