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Can school be a source of trauma? Assessing academic traumatic stress as a mechanism  
underlying the health outcomes of Black undergraduate students

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

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## Abstract

### CAN SCHOOL BE A SOURCE OF TRAUMA? ASSESSING ACADEMIC TRAUMATIC STRESS AS A MECHANISM UNDERLYING THE HEALTH OUTCOMES OF BLACK UNDERGRADUATE STUDENTS

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

Virginia Commonwealth University, 2020

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Research examining Black students' school experiences demonstrates that inequitable educational policies, practices, and environments due to oppressive power dynamics in schools may lead to adverse physiological and psychological consequences in many Black students. Recent theories in public discourse further posit that traumatic educational experiences, operationalized as academic trauma or the cumulative toll of adverse and oppressive experiences in academic settings, may influence Black students' physical, social, and emotional wellbeing even after they have graduated. However, academic trauma has yet to be investigated empirically, and the health contributions of such educational harm remain unstudied. Moreover, little is known about how culturally-relevant personal characteristics (i.e., ethnic-racial identity, racialized emotion regulation, and/or perceptions of school equity) influence Black students' reactivity to traumatic academic experiences. This dissertation project sought to empirically test academic trauma as a systemic form of trauma contributing to the physical and mental health outcomes in a sample of 130 Black postsecondary students.

This research combines elements of multiple theoretical frameworks (i.e., Critical Race Theory, Intersectionality Theory, and the social influence literature). Specifically, my conceptual

model addresses the intersection of educational power dynamics and racism, and considers disturbingly negative experiences in academic spaces as traumatic stressors that are uniquely different from general traumatic stressors. Study results indicate that reports of academic trauma are predictive of greater reports of posttraumatic stress symptomology, above and beyond the effects of general trauma, overall health, major experiences of discrimination, college stress, and several other relevant personal characteristics (i.e., financial status, sexual orientation, and level of high school preparation for college). Moreover, moderation analyses indicate that reports of greater racialized emotion management as a form of emotion regulation strengthen the relationship between academic trauma and posttraumatic stress symptomology.

Given that adverse experiences in the education system have wide reaching effects for Black Americans, empirically establishing academic trauma as a unique factor contributing to the racial disparities in health outcomes is a critical first step for fully achieving health equity. Findings from this research have important implications for higher education institutions, the actors they imbue with power (i.e., faculty, staff, campus police), and their counseling resources. Importantly, educational institutions can broaden awareness of academic trauma, tailor counseling center supports and outreach for Black students and families, and develop trauma-informed, antiracist policies and interventions aimed at improving Black students' school experiences and health outcomes.

Can school be a source of trauma? Assessing academic traumatic stress as a mechanism underlying the health outcomes of Black undergraduate students

### Introduction

Traumatic experiences, such as natural or man-made disasters, physical abuse, sexual victimization, racial discrimination and harassment, and neglect and deprivation, contribute to a number of adverse physical and mental health outcomes. For example, exposure to trauma in youth and early adulthood is associated with changes in brain development (De Bellis, 2001; Mulvihill, 2005; O’Rand & Hamil-Luker, 2005) and heightened risk for a variety of chronic medical conditions and mental disorders (e.g., substance abuse disorders, depression, and anxiety; Substance Abuse and Mental Health Services Administration [SAMHSA], 2014; Schnurr & Green, 2004). Trauma exposure is also associated with somatization, or the development of medically unexplained physical symptoms, such as elevated heartbeat, nausea and/or gastrointestinal distress, or sleep and appetite disturbances (Escobar et al., 1998).

There has been growing recognition in public discourse (i.e., book chapters and opinion pieces) of a distinct form of trauma termed *educational or academic trauma* (Godbee, 2018; Gray, 2013, 2015, 2016; Grollman, 2015, 2018; Jones 2018; Massey, 2017). Such school-based trauma has been defined as the spectrum of “inadvertent perpetration and perpetuation of cyclical and systemic harm in schools,” (Gray, 2015) and refers specifically to the systemic and cumulative toll of adverse experiences in educational settings that may impact students’ physical, social, or emotional wellbeing (Massey, 2017). Importantly, recent research on student health and wellbeing provides evidence that inequitable educational policies, practices, environments, and interpersonal interactions may lead to adverse physiological and psychological consequences, particularly for Black students (Franklin, 2019; Truong & Museum, 2012).

However, no research to date has empirically examined this phenomenon. Investigation of the role of academic trauma in shaping students' health outcomes is a necessary next step in education research, as it moves beyond a focus on academic performance to treat students as whole beings and provides a framework to examine the relationship between students' school experiences and health outcomes.

The present study sought to examine empirically how academic trauma is associated with somatic complaints and posttraumatic stress symptomology in a sample of Black undergraduate students. To do so, I developed a conceptual model that addresses academic trauma as a form of systemic trauma. My conceptual model draws on theoretical underpinnings from the social-ecological model, critical race theory (CRT), intersectionality theory, the race-based traumatic injury model and the general traumatic stress literature. Guided by these theoretical frameworks, the model takes into account how power dynamics inherent to American schools intersect with racism to contribute to Black students' school experiences and health outcomes. This research also provides policy recommendations for health promotion for Black students.

### **Definitions of Trauma**

Psychological distress resulting from traumatic circumstances has been recognized and studied for several centuries. Accounts from researchers examining the experiences of veterans in the 1600s and sexual abuse survivors in the late 1800s detail the evolution of documented scientific understanding of the impact of trauma on mental and physical health (Babington, 1997; Schnurr & Green, 2004; Trimble, 1981). Despite this robust history, trauma and its sequelae as we know them today were not formally recognized in Psychology until they were added to the Diagnostic and Statistical Manual for Mental Disorders (DSM-III) in 1980 after the Vietnam War (Herman, 1992; Schnurr & Green, 2004; van der Kolk, Weisaeth, & van der Hart, 1996). In

the most current version of the DSM (DSM-V) trauma is defined as “actual or threatened death, serious injury, or sexual violence” (American Psychiatric Association, 2013, p. 271). However, this definition of trauma is limited in its ability to capture and address the lived experience of trauma, as many experiences may be traumatic even if there is no actual or vicarious threat of physical harm (Briere, 2004; Dell’Osso & Carmassi, 2011).

The International Classification of Diseases (ICD) has used broader definitions of trauma across several editions. The ICD is the standard for diagnostic classification of all health conditions, disorders, and diseases that has been used by the World Health Organization (WHO) since its inception in 1948. The tenth edition of the ICD (ICD-10), endorsed by the WHO in 1990, refers to trauma as “exposure to a stressful event or situation (either short or long lasting) of exceptionally threatening or catastrophic nature, which is likely to cause pervasive distress in almost anyone” (Stein et al., 2014, p. 504; WHO, 1993). The newest edition of the ICD (ICD-11), which will come into effect in 2022, defines traumatic experiences simply as “exposure to an extremely threatening or horrific event or series of events” (Giourou, 2018). Such broad language provides an opportunity for clinicians and researchers to consider a number of experiences within the realm of trauma.

Recent definitions of trauma used outside of the scope of the clinical diagnostic world have been further expanded to include events and circumstances that may be emotionally harmful (Briere, 2006; Carter, 2007; SAMHSA, 2014). Specifically, SAMHSA’s Trauma and Justice Strategic Initiative defines trauma as “an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual’s functioning and physical, social, emotional, or spiritual well-being” (SAMHSA, 2014, p. 2). The present study uses the SAMHSA’s definition



of trauma because it captures both the precipitating event and context surrounding the trauma, as well as the wide range of responses characteristic of experiencing a trauma.

### **Trauma as a Public Health Issue**

**Trauma and health outcomes.** Research demonstrates that exposure to trauma in general takes a heavy toll on trauma survivors. Specifically, trauma exposure is associated with poorer self-reported health (Mock & Arai, 2011; Wolfe, Schnurr, Brown & Furey, 1994). Additionally, individuals who have experienced trauma have been found to have heightened cardiovascular arousal and cortisol levels, both of which are associated with greater risk for chronic medical conditions (O’Rand & Hamil-Luker, 2005; SAMHSA, 2014).

Traumatization in childhood may be particularly detrimental due to its cumulative toll on health across the lifespan, as research has documented an association between childhood trauma and poorer cardiovascular health, suppressed immune functioning, and somatic symptomology in adulthood (Springer et al., 2003; Mulvihill, 2005; O’Rand and Hamil-Luker, 2005; Wickrama et al., 2005). For example, research provides evidence that trauma exposure and maltreatment in childhood are associated with cardiovascular disease and chronic pain syndromes (Kendall-Tackett, Marshall, & Ness, 2003). Finally, Felitti and colleagues (1998) also found evidence that childhood trauma was associated with chronic health conditions in a sample of over 17,000 patients in California. Specifically, findings from this study revealed that patients who reported experiencing multiple adverse circumstances (e.g., any form of abuse or parental mental health concerns, substance abuse, domestic violence, or criminal behavior) reported greater incidence of health concerns such as diabetes, cancer, stroke, and heart disease.

**Trauma and somatization.** Trauma and traumatic stress reactions are also associated with short-term physical health symptoms better known as somatic complaints. Somatic

symptoms often denote the manifestation of stress as physical symptoms or bodily complaints and have no medical basis or corresponding physiological cause. Examples of somatic symptoms include fatigue, nausea, dizziness and fainting, and pain (e.g., back pain, jaw pain, chest pain, pelvic pain, or abdominal pain; Simon, Gater, Kisely, & Piccinelli, 1996). While somatic complaints are not life threatening, they are associated with social isolation, psychological distress, and impaired functioning (Dirkzwager & Verhaak, 2007), all of which can have an impact on quality of life.

Somatization, though fairly common even among people who have not experienced trauma, is more prevalent among trauma survivors. Indeed, research demonstrates that trauma survivors who have not suffered grave injuries tend to report more somatic symptoms than control groups with no previous trauma histories (Elklit & Christiansen, 2009; Hensley & Varela, 2008; Sesar, Simic, & Barisic, 2010). Experiences of interpersonal traumas (e.g., abuse, neglect, assault) and traumas high in betrayal are also strongly associated with somatic symptomology (Goldsmith, Freyd, & DePrince, 2012; Hart, Hodgkinson, Belcher, Hyman, & Cooley-Strickland, 2013; Nicolaidis, Curry, McFarland, & Gerrity, 2004).

Data from surveys of 174 women ages 25-60 recruited from 3 internal medicine clinics provide evidence that multiple forms of violence (i.e., intimate partner violence, child abuse, and community violence) are associated with somatic complaints (Nicolaidis, Curry, McFarland, & Gerrity, 2004). Even after controlling for substance abuse and demographics, exposure to every form of violence except child abuse was associated with greater odds of reporting at least six somatic symptoms (e.g., fatigue, headaches, widespread pain, digestive complaints, dizziness, fainting spells, etc.). Additionally, an association between lifetime trauma history and severity of somatic symptomology has recently been documented in a multiethnic sample (Loeb et al.,

2018). Research conducted with 500 male and female participants (270 Latino and 230 African American) revealed that lifetime trauma history, including such traumas as racial and gender discrimination, threat of physical harm, interpersonal and family violence, and sexual abuse, was significantly and positively correlated with both post-traumatic stress symptoms and somatic complaints such as back pain, headaches, and trouble breathing. This study also found that higher levels of trauma exposure were associated with greater severity of somatic symptomology, even after controlling for gender, age, and race/ethnicity (Loeb et al., 2018).

The relationship between trauma exposure and somatic symptomology has also been documented in children. Longitudinal data collected by Bailey and colleagues (2005) provides evidence that youth somatic complaints are associated with experiences of community violence and victimization. The sample of 268 African American children between the ages of 6 and 7 was recruited through their biological mothers before birth. The children and their mothers completed measures of exposure to community violence and stress symptoms, and both the children and their teachers provided reports of the children's somatic complaints. After controlling for potential confounding variables (i.e., socioeconomic status and maternal years of education), results revealed associations between exposure to community violence and victimization and stress symptomology. Exposure to community violence was also associated with headaches and sleep difficulties, while exposure to victimization was associated with stomachaches, appetite changes, and sleep difficulties.

Furthermore, McLaughlin and colleagues (2016) found an association between exposure to violence and somatic symptomology in a nationally representative sample of adolescents. Data from 6,483 adolescents aged 13-17 that were collected in the National Comorbidity Survey Replication–Adolescent Supplement revealed that exposure to violence was associated with

higher risk of various somatic complaints (i.e., headaches, chronic pain, and back/neck pain). The results remained significant even after controlling for demographics and socioeconomic status. Similar results were found by Hensley & Varela (2008) in a sample of 302 sixth and seventh graders following exposure to Hurricane Katrina. Taken together, these findings provide evidence that traumatic experiences and traumatic stress reactions can have detrimental effects on both short- and long-term physical health symptoms.

The adverse and pervasive health consequences of trauma exposure weigh heavily on the healthcare system as well. Research indicates that many people who have experienced traumatic stress may initially present with physical symptoms. Consequently, many trauma survivors believe their physical symptoms are purely physiological issues, and thus do not associate their symptoms with outside or trauma-related circumstances (SAMHSA, 2014). Such separation of physical symptoms from the trauma-related events and circumstances often results in trauma survivors seeking assistance in primary care as opposed to any form of integrated or behavioral healthcare (SAMHSA, 2014). Indeed, it has been documented that exposure to trauma may lead to increased healthcare utilization and cost for trauma survivors (Calhoun, Bosworth, Grambow, Dudley, & Beckham, 2002; Solomon & Davidson, 1997).

### **Mechanisms Underlying the Trauma–Health Link**

At the heart of the trauma–health link lies the relationship between stress perception and physiological arousal. According to the transactional model of stress and coping (Lazarus & Folkman, 1984), stressful conditions force individuals to consider the stressor in relation to their resources and ability to manage the stressor. The cognitive appraisal process consists of two stages: primary and secondary appraisal. In primary appraisal, the individual assesses a given stressor in terms of its relevance to the self. In secondary appraisal, the individual assesses their

resources and ability to cope with or manage the stressor; if individuals appraise that they have enough resources or ability to cope, the stressor is perceived to be a challenge. In contrast, if individuals appraise that they do not have enough resources or ability to cope, then the stressor is perceived to be a threat (Lazarus & Folkman, 1984).

Generally, stressors that are perceived as threats impact the body by disrupting homeostasis, or the process through which the body maintains physiological equilibrium, by triggering a three-tiered neurobiological response in different bodily systems: the sympathetic nervous system, endocrine system, and immune system (Kendall-Tackett, 2009). The sympathetic nervous system, which regulates automatic bodily functions such as breathing, body temperature, and blood pressure (Kendall-Tackett, 2009), prepares the body for physical activity and produces the fight-or-flight response under conditions of stress. Activation of the sympathetic nervous system results in an increase in catecholamines (i.e., epinephrine and norepinephrine) in the body. These compounds are released into the bloodstream in the presence of strong feelings, such as anger and fear, and the secretion of these hormones prepares the body for fight, flight, or even to freeze in the presence of a threat (Dougall & Baum, 2001).

The endocrine system, which consists of a collection of glands that secrete hormones, regulates such bodily functions as metabolism, growth, movement, and reproduction. Most relevant to this research are the hypothalamus, pituitary, and adrenal glands as together they form a complex set of neuroendocrine interactions known as the hypothalamic-pituitary-adrenal (HPA) axis that functions as the body's stress response system (Kendall-Tackett, 2009). The HPA axis is responsible for threat assessment, triggering a behavioral response, and returning the body to homeostasis with the cessation of the threat (Bevans, Cerebone, & Overstreet, 2005; Wilson, Hansen, & Li, 2011). To help the body cope with the presence of a threat, the HPA axis increases

production of cortisol, a steroid hormone that fuels the body's fight-or-flight response during stressful conditions, by increasing the production of glucose while also prohibiting insulin production to ensure higher energy levels (McEwen, 2003).

Finally, stress activates the body's immune response. When stressors are perceived, compounds called proinflammatory cytokines are released by the immune system to increase inflammation. This helps the body ward off infections and mend wounds (Kendall-Tackett, 2009). In the short-term, such physiological changes are useful for regulating the body's stress response and activating necessary coping strategies (Solomon & Heide, 2005). In the case of typical stressful conditions, the neurobiological stress response system can return to homeostasis when the stressor is removed and the HPA-axis ends cortisol production (Wilson, Hansen, & Li, 2011).

As previously discussed, traumatizing experiences consist of adverse circumstances and events that are uncontrollable, emotionally distressing, sudden, and often beyond the realm of everyday experiences. Consequently, traumatic stressors often lead to more long-term adverse effects on the body than general stressors, resulting in alteration in the biological stress response system (Dougal & Baum, 2004; Kendall-Tackett, 2009; Wilson, Hansen, & Li, 2011). More specifically, traumatic stressors can cause activation of the aforementioned neurobiological stress response well beyond the presentation of a threat, resulting in prolonged disruption of homeostasis (Weber & Reynolds, 2004; Wilson, Hansen, & Li, 2011). Such disruption leads to allostasis, or the physiological process by which the body attempts to regain its equilibrium and stability in response to stressors. While the body is attempting to regain equilibrium, however, exposure to chronic sympathetic nervous system and HPA-axis activation can cause wear and tear on the body, typically in the form of long-term alterations and disruptions in other body

systems such as the respiratory, muscular, and cardiovascular systems (Kendall-Tacket, 2009; Solomon & Heide, 2005). Additionally, inflammation levels may become abnormally high in the case of traumatic or severe stress, and high levels of proinflammatory cytokines and inflammation in the body can increase vulnerability to disease (Kendall-Tacket, 2009; McEewn, 2003).

Research also indicates that stressors with both physiological and psychological origins trigger increases in the production of pro-inflammatory cytokines. Such elevated inflammation is associated with impairments in immune functioning and wound healing, heart disease, and Alzheimer's disease (Frasure-Smith & Lesperance, 2005; Kiecolt-Glaser et al., 2005; Nivison, Guillozet-Bongaarts, & Montine, in press; Surtees et al., 2008). For example, longitudinal research with a sample of 1,037 participants in a New Zealand birth cohort found that maltreatment in childhood was associated with higher levels of inflammation 20 years later (Danese, Pariante, Caspi, Taylor, & Poulton, 2007). These effects of the maltreatment on inflammation levels were dose-responsive and remained significant even when controlling for potential confounding factors, such as health behaviors and life stressors in adulthood.

Despite the large body of research examining the trauma–health link and mechanisms underlying the relationship, traumas that do not adhere to the DSM diagnostic criteria (e.g., loss of a loved one, family problems such as parental divorce, and relationship problems) remain understudied. This knowledge gap is jarring, given recent findings that individuals who have experienced traumas that do not adhere to the DSM diagnostic criteria report similar levels of psychological distress and even greater PTSD symptomology than individuals who have experienced a DSM-congruent trauma (Boals, Riggs, & Kraha, 2012; Gold, Marx, Soler-Baillo,

& Sloan, 2005). Thus, investigation of a broader range of potentially traumatizing experiences (e.g., racial trauma and academic trauma) may be crucial to the future of trauma research.

### **Racial Trauma as a Distinct Form of Traumatic Stress**

**Models of racial trauma.** Racist incidents have long been established as stressors that impact the mental health of marginalized racial/ethnic groups, but conceptualizations of exposure to racism as a form of trauma did not arise until the 1990s and early 2000s (Bryant-Davis & Ocampo, 2005, 2006; Daniel, 2000; Sanchez-Hucles, 1998; Wyatt, 1990). Based on this literature, Carter (2007) developed a model of race-based traumatic stress. This model integrates research on racism, discrimination, stress, and trauma to form a non-pathological model of traumatic stress to explain psychological and physiological pain experienced by members of racially/ethnically marginalized groups as a result of individual, institutional, or systemic racism. Carter (2007) situates racism as a threat to the wellbeing and safety of members of marginalized racial/ethnic groups in order to highlight the ways in which racism harms and violates the rights of communities of color. Carter (2007) further argues that race-based traumatic injury results from specific forms of racism, such as racial discrimination, racial harassment, and discriminatory harassment. Racial discrimination refers to avoidant racist encounters that maintain or create distance between dominant and marginalized racial/ethnic groups (Carter et al., 2005), while racial harassment is defined as hostile racist encounters whereby a member of a marginalized racial/ethnic background is treated as subordinate or inferior (Carter & Helms, 2002). Discriminatory harassment, also defined as aversive hostile racism, captures experiences where racism manifests as a distancing strategy either interpersonally (i.e., behaviors and actions) or structurally (i.e., policies and procedures) in contexts from which people of color were previously excluded (e.g., workplaces). Furthermore, the model specifies that racist



encounters can be covert, overt, or ambiguous, and that they are often highly negative, disempowering, sudden, and uncontrollable, much like other traumatic stressors. Carter (2013) also developed the first scientifically validated measure to assess experiences of race-based traumatic stress: the Race-Based Traumatic Stress Symptom Scale (RBTSSS; Carter et al., 2013). The 52-item measure was validated with a diverse adult sample and found to have seven scales: Depression, Anger, Physical reactions, Avoidance, Intrusion, Hypervigilance/arousal, and Low self-esteem.

Williams, Printz, and DeLapp (2018) expanded upon Carter's (2007) model and adopted the term *racial trauma*, which has been defined as traumatic stress reactions and responses to experiences of racism (Bryant-Davis & Ocampo, 2006; Comas-Dias, 2016; Williams, Printz, & DeLapp, 2018). Through their work, Williams and colleagues have expanded upon previous conceptualizations of experiences of racism as a traumatic stressor by providing a model for assessing racial trauma within a clinical framework using the DSM-5. These researchers also developed additional measurement tools to assist clinicians in the assessment of racial traumatic stress and its sequelae (Williams, Metzger, Leins, & DeLapp, 2018; Williams, Printz, & DeLapp, 2018).

Racial trauma has a shared etiology with general traumatic stress in that it involves disturbingly negative experience(s) that may lead to adverse physical, social, and emotional consequences for trauma survivors. Importantly, however, the model highlights several distinctions between racial trauma and general traumatic stress. First, racial trauma has a specific systemic, socio-political cause (i.e., racism) that predisposes marginalized racial/ethnic groups to disturbingly negative and oppressive experiences (Carter, 2007; Williams, Printz, & DeLapp, 2018).

Second, in the general traumatic stress literature, trauma is most often defined as a physically threatening event or set of circumstances that is experienced as distressing as described above. In contrast, racial trauma is often defined as a psychological trauma, whereby trauma refers to the psychological or physiological experience of an event itself as distressing (Williams, Metzger, Leins, & DeLapp, 2018). Thus, racial trauma is often described in terms of the experience of the event by an individual as opposed to the event itself. This distinction allows for more individuation in terms of who can be affected by this type of trauma.

Third, racial trauma typically involves not one traumatic event, but often a set of continuous circumstances that may lead to adverse experiences and treatment of marginalized racial/ethnic groups across the lifespan (Bryant-Davis & Ocampo, 2006; Comas-Dias, 2016; Williams, Printz, & DeLapp, 2018). Discriminatory racial events may occur at the individual, institutional, or systemic level, and include experiences such as witnessing or experiencing racism-related violence and profiling by police, racism-related hate crimes, differential selection and treatment in sanctioning in school settings, and microaggressions (Carter, 2007; Harrell, 2000, Skiba, Arredondo, & Williams, 2014). Online victimization may also be a particularly poignant discriminatory racial experience for youth and young adults in particular, given the rise of both overt and covert racism on online platforms (Eschmann, 2019).

Fourth, racial trauma also differs phenomenologically from general traumatic stress and PTSD as defined by the DSM-5. Specifically, racial trauma includes a number of symptoms general traumas often do not. Example of such symptoms include avoidance of dominant group members, paranoia, and intense concern about the wellbeing of loved ones (Williams, Peña, & Mier-Chairez, 2017; Williams, Printz, & DeLapp, 2018).

Fifth and finally, racial trauma may be experienced vicariously by marginalized racial/ethnic groups. In other words, individuals may experience trauma-related emotional, social, and physiological consequences by witnessing or being made aware of other people of a shared racial/ethnic background experiencing racial maltreatment (Heard-Garris, Cale, Camaj, Hamati, & Dominguez, 2018). More specifically, individuals of marginalized racial/ethnic groups who have witnessed or been socialized about communal discrimination may experience posttraumatic stress symptoms or traumatization due to a socialized fear and hypervigilance of racism-related stressors (Helms, Nicholas, & Green, 2012; Williams, Printz, & DeLapp, 2018).

**Mechanisms underlying the racial trauma–health link.** Researchers have found that experiences of racial discrimination and racism-related stress impact health through both direct and indirect channels much like other stressors (e.g., through allostatic load, psychological distress, and sleep difficulties), as well as through negative coping behaviors that may detract from health such as substance use (Harrell, 2000; Hicken, Lee, Ailshire, Burgard, & Williams, 2013; Williams, Neighbors, & Jackson, 2003). Research also demonstrates that responses to racial discrimination and racism-related stress mirror the sequelae of trauma (Carter & Forsyth, 2010; Flores et al., 2010; Sibrava et al., 2019; Torres & Taknint, 2015). For example, Carter and Forsyth (2010) found that reports of direct racist encounters from a diverse sample of adults were also associated with increased posttraumatic stress symptomology (i.e., avoidance, guilt, hypervigilance, and anxiety) as well as prolonged stress. Similarly, it has been documented that reports of greater exposure to racial discrimination are associated with reports of increased posttraumatic stress symptoms and substance use among adolescents (Flores et al., 2010). Notably, responses such as hyperarousal, hypervigilance, avoidance and numbness, and altered mood and cognitions are symptoms included as criteria for PTSD as outlined in the DSM.

Sibrava et al. (2019) found similar results in a sample of Black and Latinx American adults, noting that PTSD diagnosis was significantly associated with greater reports of discrimination experiences.

Importantly, however, a growing body of research provides evidence that the impact of racial traumatic stress on the body may differ from that of general traumatic stress. The literature on minority stress models, which conceptualize stressors specific to marginalized groups as unique, chronic, and socially-based (Meyer, 1995; Meyer, Schwartz, & Frost, 2008; Thoits, 1995), explores this idea. More specifically, these models posit that racism-related stressors “contribute individually and collectively to the stress experiences of minority populations—above those stressors experienced universally (i.e., general life stress;” Pittmann, Cho Kim, Hunter, & Obasi, 2017, p. 2). Given that racial trauma is a developing construct, much of this research captures racial trauma as racial discrimination, racial harassment, race- or racism-related stress, and racial microaggressions. For instance, Utsey and colleagues (2008) conducted research providing evidence that race-related stress was a much stronger risk factor for psychological distress than stressful life events for Black Americans. Additionally, Pieterse and colleagues (2010) reported that, for Black Americans, racial/ethnic discrimination explained 10% of the variance in post-traumatic stress symptoms when controlling for general life stress. Moreover, a robust body of research examining the impact of racist encounters on American Indian or Native Americans populations situate historical (i.e., colonialism and genocide) and contemporary (e.g., microaggressions) racial trauma as the underlying cause of much of the behavioral and physical health sequelae in Native American communities, including posttraumatic stress symptomology (Burnette & Figley, 2017; Elm, Walls, & Aronson, 2019;

Kading et al., 2015; LaFromboise, Medoff, Lee, & Harris, 2007; Skewes & Blume, 2018; Walters & Simoni, 2002).

Taken together, these findings provide evidence that exposure to racism and racism-related stress may result in traumatic stress responses and other negative social, emotional, and health consequences, often over and above the effects of general life stress. Thus, it is essential that researchers continue to investigate potential race-based traumatic stressors in different age groups and across the lifespan within Black American communities, as they have been found to be chronic stressors that can contribute a host of poor negative health outcomes (Williams & Mohammed, 2009; Williams & Mohammed, 2013). Such research may also benefit from examining the manifestation and impact of racism in social systems in which the potential for exposure to racism is heightened (e.g., the education system), as these environments may have unique health concerns and risk and protective factors.

### **Towards a Framework of Trauma in Education**

**Racism and racial trauma in education.** In 1848, Horace Mann, the first state secretary of education in the nation's history, asserted that education is "the great equalizer" and "balance of wheel of the social machinery" (Cremin, 1957; Grove & Montgomery, 2003). Over 160 years later, U.S. Secretary of Education Arne Duncan reinforced Mann's claim, stating that education was still an equalizing force in America and citing the importance of education in shaping future directions for the nation (Duncan, 2017; Klein, 2014). Indeed, educational success is linked with increased social capital and economic potential (Adler & Newman, 2002; Telfair & Shelton, 2012), better self-reported health (Subramanian, Huijts, & Avendano, 2010), and lowered likelihood of engagement in the criminal justice system (Lochner & Moretti, 2004).

Despite the positive outcomes associated with educational attainment, however, researchers have documented a number of disturbing racial disparities and inequities in the American education system that suggest that education actually exacerbates existing racial and class inequalities rather than being “the great equalizer.” For example, research on K-12 education demonstrates that only half of Black and Latinx children are proficient in letter recognition at age four, compared to their White peers (Aud et al., 2010). By fourth grade, Black and Latinx children are three to four times as likely to score below proficient in math. Similarly, research on disparities based on social class demonstrate that low-income children start school six to nine months behind high-income children in school readiness (Reardon & Portilla, 2016), and also tend to perform more poorly on standardized tests than their higher-income counterparts (Reardon, 2013). American Indian/Alaska Native and Latinx students are also more likely to report experiencing violence (e.g., threat of or injury with a weapon) in schools than their counterparts of other racial/ethnic backgrounds.

Significant racial disparities also exist in K-12 disciplinary outcomes such that Black and Latinx students are much more likely than their White counterparts to receive out-of-school suspension or expulsion (National Center for Education Statistics [NCES], 2017). Importantly, school-level discipline disparities are associated with student adjustment problems as well as lowered perception of equity and school belongingness among Black students (Bottiani, Bradshaw, & Mendelson, 2017). These outcomes have serious implications for a student’s school trajectory, as they may undermine students’ relationships with their educators and administrators as well as their academic outcomes (Okonofua, Walton, & Eberhardt, 2016).

There are also notable racial disparities in post-secondary education outcomes. Six-year graduation rates are significantly lower for Black and American Indian/Alaska Native students

than for their White and Asian American counterparts (NCES, 2017). Additionally, Black and Latinx students are less likely to receive degrees from public four-year colleges and instead more likely to be awarded degrees from for-profit institutions as well as institutions with lower faculty pay and lower average SAT scores (Libassi, 2018).

Many education scholars cite racism as a source of these disparities. Indeed, there is strong evidence supporting that stereotyping, prejudice, and discrimination are brought into classrooms across America (Henderson & Long, 1973; Tenenbaum & Ruck, 2007; Triplett, Allen & Lewis, 2014; Zucker & Prieto, 1977). For instance, educators' negative attitudes towards students from underrepresented backgrounds have been found to interfere with their impartiality and perceptions of student ability (London et al., 2014). Additionally, studies have shown that school quality and biased treatment of students of color based on teachers' racial attitudes emerged as the primary explanations for performance differences, with biased treatment of Black students explaining 20% of Black-White differences on test performance. Research has also found that teachers tend to hold higher expectations for White students, whereas they are more likely to suggest special education classes or discipline for Black students (Tenenbaum & Ruck, 2007).

**Trauma in education and its health consequences.** Importantly, exposure to institutional racism has a well-documented effect on the health and wellbeing of students of color. For example, exposure to microaggressions and other racism-related stressors in academic settings is associated with psychological distress (e.g., posttraumatic stress symptoms and depressive symptoms) as well as problems in personal and romantic relationships, sleep disturbances, and physical health (Chao et al., 2012; Neville, Heppner, Ji, & Thye, 2004). Additionally, recent research provides evidence that continuous exposure to racism may lead to

the development of racial battle fatigue, which refers to a prolonged stress response resulting from hostile, demeaning, or dismissive racial environments (Smith, 2008; Smith, Allen, & Danley, 2007). Symptoms of racial battle fatigue include posttraumatic stress symptoms, high blood pressure, anxiety, acute stress, and somatic symptoms such as chronic pain, nausea, and headaches (Smith, 2008; Smith, Allen, & Danley, 2007).

Expanding on the microaggression and racial battle fatigue literature, researchers have also begun examining student experiences of racial trauma in educational institutions in recent years in order to capture the full range of psychological and physiological outcomes associated with prolonged exposure to racism in academic settings. For example, Truong & Museus (2012) conducted interviews with a diverse sample of 26 doctoral students to examine academic victimization through racism and racial trauma. The students in this sample reported symptoms of racial trauma (e.g., depression, anger, dissociation, and somatic complaints such as physical pain) as a result of racist experiences including repeated microaggressions, solo status and isolation, the devaluation of research on race, and differential support and investment from the institution.

Additionally, Pieterse and colleagues (2010) provide further evidence of racial trauma in student populations. In this study, a racially diverse sample of 289 undergraduate students completed measures assessing general life stress, PTSD symptomology, racial/ethnic discrimination, and racial climate. Results revealed that for Black students alone, racial/ethnic discrimination explained 10% of the variance in post-traumatic stress symptoms when controlling for general life stress. Taken together, these findings provide evidence that exposure to racial trauma may result in traumatic stress responses and other negative social, emotional,



and health consequences for students from marginalized racial backgrounds, at times over and above the effects of general life stress.

Though there is evidence of racism in schools and of associations between exposure to racism and adverse health and mental health outcomes, it is important to note that racism is not the only institutionalized social structure that influences the school experiences and outcomes of students of color. In other words, race-only analyses of student experiences and outcomes do not capture the full range of phenomenological experiences associated with inhabiting marginalized racial identities in academic settings. As such, analyses of the contribution of students' school experiences to their health outcomes require more nuanced perspectives to understand and unpack the specific and overlapping power dynamics students of color face in the American education system.

**Conceptual models of trauma in education.** Several educators have recognized and outlined what they refer to as educational trauma to capture the relationship between educational experiences and trauma sequelae in students. Liebman, an education scholar and clinician, first noted a conceptual relationship between negative education experiences and trauma as a public-school educator, arguing that students who feel disempowered by schools may exhibit fight-or-flight responses to negative educational experiences (Massey, 2017). Building upon this conceptualization, clinical psychologist and educator Gray (2016) argued that current pedagogical approaches and practices to educate students and assess their academic performance predispose them to traumatic educational experiences and went onto define educational trauma. Gray (2013) defines educational trauma as the “inadvertent perpetration and perpetuation of victimization of producers and consumers of the educational system.” Gray (2013) outlines a spectrum of educational trauma that impacts all students. Traumatic educational experiences on

Gray's spectrum range from the culture of over-testing to excessive use of medication to modify student behaviors. Gray's model culminates with the school-to-prison pipeline in K-12 education, whereby student behavior is policed in low-income communities of color due to the increased presence of law enforcement. Gray (2013) further stipulates that low-income students of color are vulnerable to experiences of educational trauma, due to their multiply marginalized status.

The conceptualization of trauma in education paints a scathing picture of the American education system as a social structure that replicates, maintains, and perpetrates harm even though it is continuously framed as a balancing societal force. Gray (2013) provided a much-needed conceptual framework of trauma in education and outlined several pedagogical strategies to eradicate educational trauma that they themselves put into practice in their everyday interactions in academic settings. Gray's work also contributes to scientific conceptualizations of the health contributions of students' school experiences, interactions, and treatment within academic settings. However, the educational trauma model does not provide a conceptual or methodological framework for measuring the harm caused by educational institutions or outline the full scope of disturbingly negative experiences students of color may have at different educational levels. Additionally, these conceptual models have not been empirically tested or examined. Thus, testable models that build upon these conceptualizations of trauma in education must be developed. Such models may provide the institutional context, methodological considerations, and empirical evidence of trauma in education necessary to reimagine the American education system as one based on "intersectional justice, antiracism, love, healing, and joy" (Love, 2019, p. 11).

### **The Present Research**

## **Defining Academic Trauma**

Drawing on previous conceptualizations of trauma in education, the present research sought to develop a testable model of academic trauma. I define academic trauma as a systemic, psychological form of traumatic stress resulting from the cumulative toll of adverse and oppressive experiences in academic settings. I also emphasize that this form of traumatic stress differs from general trauma or racial trauma as it captures phenomenological experiences and outcomes specific to the education system. More specifically, this construct captures the phenomenological experiences associated with inhabiting a marginalized scholar identity as well as a marginalized racial/ethnic identity in an education system founded upon Western and White supremacist beliefs as a result of settler colonialism (Battiste, 2013; Leonardo & Singh, 2017).

## **Foundational Frameworks Underlying Academic Trauma**

**Critical race theory.** The current conceptualization of academic trauma builds on previously established social-ecological models to address trauma-related issues (see Magruder, McLaughlin, & Borbon, 2017). Specifically, this conceptualization moves beyond the individual level to examine institutionalized social structures and factors that influence patterns of traumatization and health outcomes (Goldsmith, Martin, & Smith, 2014, p. 1). I posit that Critical Race Theory (CRT) and intersectionality provide frameworks to understand and unpack academic trauma in students. CRT is “a framework or set of basic perspectives, methods, and pedagogy that seeks to identify, analyze, and transform those structural and cultural aspects of society that maintain the subordination and marginalization of people of color” (Solorzano, 1997, p. 6). Legal scholars developed the theory as a critique of the limitations of one-dimensional class analyses of social issues by Critical Legal Scholars (CLS; Crenshaw, Gotanda, Peller, & Thomas, 1995). Importantly, the CRT framework was expanded to education over 20 years ago

to provide the field a theory of race and acknowledge that policies and practices in the American education system perpetrated educational inequity that directly harmed students of color (Ladson-Billings & Tate, 1995).

**Intersectionality.** While CRT plays a crucial role in understanding and researching how racism shapes contemporary society, CRT scholars also emphasize the importance of exploring other aspects of social structure and identity formation that shape racist inequities (Gillborn, 2015). Intersectionality, which seeks to fully explicate how social structure shapes identities and subsequently experiences in institutional social structures, is crucial for such examinations (Gillborn, 2015; Tefera, Powers, and Fischman, 2018). Intersectionality captures the interdependent nature of systems of oppression (e.g., racism, cissexism, and ageism). It provides a framework to move beyond one-dimensional analyses of social structures by situating the complexities of power dynamics and inequities as central to identity formation and perception in social settings (Gillborn, 2015; Tefera, Powers, and Fischman, 2018). The framework was developed by critical race theorist and legal scholar Kimberle Crenshaw (1989, 1991), and has been engaged widely throughout analysis of a variety of social issues. Intersectional approaches, like critical race analyses, engage real-world issues and work to center and contextualize the embodied nature of social hierarchy, power dynamics, and inequity with the ultimate aim of social intervention and social change.

Education researchers highlight the importance of examining how racism intersects with other forces of oppression in varying societal contexts and historical moments, and thus have framed intersectionality as an aspect of CRT or a “tool of critical race analysis and intervention” (Gillborn, 2015, p. 279). Given this important focus on the relationships between power, inequity, privilege, and marginalization in various institutionalized social structures,

intersectionality provides a critical lens to examine the complexities of student experiences and outcomes.

Of particular importance to the current research is the potential use of intersectional approaches in examinations of systems of power that may intersect with racism to shape student experiences and outcomes in academic settings. Scholars have already begun to examine how ability and language intersect with race to influence how students are perceived and treated in schools (Hernández-Saca, Gutmann Kahn, and Cannon, 2018). However, there is one aspect of institutionalized social structure that may intersect with race that often goes unnoticed or unnamed: positionality within the institution, or student status more specifically.

**Social influence.** My conceptualization of academic trauma acknowledges that there are power dynamics inherent to classrooms based on the structure of American educational institutions. More specifically, researchers contend that power must be exerted by one group over another (e.g., by educators over students) in traditional educator-learner relationships in order for information transfer to occur. Indeed, social influence researchers McCroskey & Richmond (1983) conducted research on frameworks of authority in education. Findings indicated that “without the communication of power by the teacher over the student, the student cannot learn” (p. 175). Within this framework, power manifests as a negotiated entity that students bestow upon their educators in exchange for their education. Student behavior and educator communication styles influence the nature of the power relations between these two constituencies (Cahn, 1986, 1990; Finn, 2007).

Social influence researchers have outlined five types of power that educators use to influence students: coercive power, reward power, legitimate power, referent power, and expert power (French & Raven, 1959). *Coercive* power refers to strategies to relay the potential for

discipline and punishment in an attempt to ensure that students adhere to classroom rules. *Reward* power includes influence strategies related to systems of behavioral conditioning (e.g., positive and negative reinforcement). *Legitimate* power is an inherent form of influence that lies simply in an educator occupying their employed position. *Referent* power stems from relationship building and interacting with students. Finally, *expert* power refers to influence stemming from an educator's content knowledge, ability, and competence (French & Raven, 1959). Underlying this taxonomy are delineations of soft (i.e., prosocial and constructive) and harsh (i.e., antisocial and admonishing) power (Finn, 2012; French & Raven, 1959). The reward, expert, and referent power bases are considered soft or prosocial power, while the legitimate and coercive power bases are considered to be harsh or antisocial power bases (Finn, 2012). Use of soft power is associated with improvements in student motivation (Richmond, 1990), cognitive and socioemotional learning (McCroskey et al., 1985; Richmond & McCroskey, 1984; Richmond et al., 1987), teacher credibility (Schrodt et al., 2007), and teacher effectiveness (Teven & Herring, 2005). Harsh power usage, however, is associated with poorer student motivation (Richmond, 1990), teacher effectiveness (Schrodt et al., 2007), and cognitive and socioemotional learning (McCroskey et al., 1985; Richmond & McCroskey, 1984; Richmond et al., 1987).

These power dynamics exist regardless of students' identities and backgrounds due to the organizational structure of the education system. Intersectionality as a tool of CRT, however, lends itself to the conclusion that while institutional power relations are inherently shaped by an individual's positionality (e.g., subordinate or supervisor), in institutional settings they must also intersect with other systems of power influenced by larger hierarchical social structures (e.g., racism, sexism, ableism, etc.; Tefera, Powers, and Fischman, 2018). Consistent with this idea,

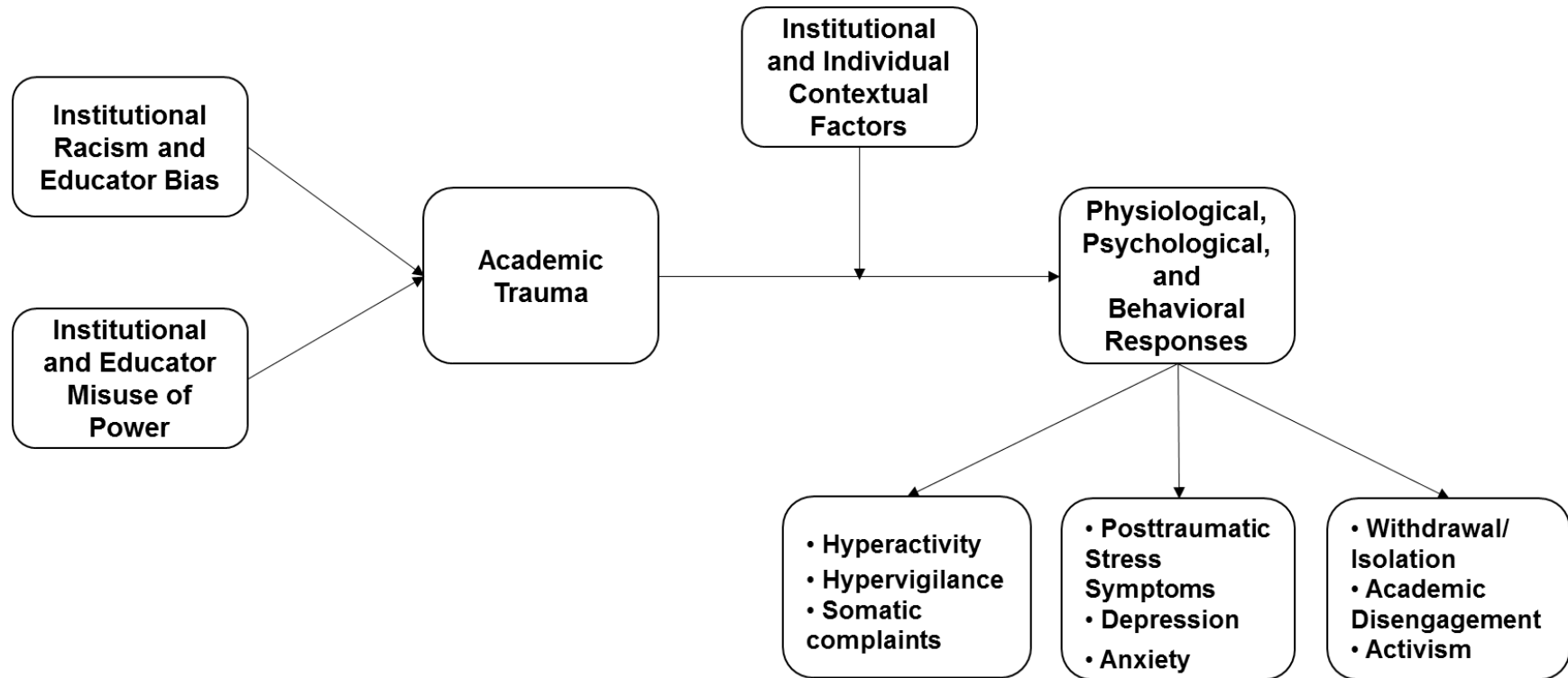
social influence researchers posit that power usage may be influenced by situational factors such as education level (K-12, undergraduate, graduate) and education sector (e.g., public or private), as well as personal factors like the age, race, gender, and attitudes of educators and students (Schwarzwald, Koslowsky, & Brody-Shamir, 2006).

### **A New Conceptual Model of Academic Trauma**

Taken together, this new conceptual model of academic trauma (see Figure 1 below) posits that students from marginalized racial/ethnic backgrounds may not only face racism in the American education system but may also contend with the social influence wielded by educators and administrators. The model was adapted from Carter's (2007) Race-Based Traumatic Injury Model, and differs from previous conceptualizations of trauma in education and educational harm in three major ways:

1. Power is inequitably distributed in schools; therefore, examinations of academic trauma must be conducted through a critical race and intersectional lens with attention to an individual's demographic background and positionality within an institution.
2. Educational inequities, like all others, are *embodied* consequences of discrimination and other oppressive social structures that often shape adverse health outcomes. Thus, academic settings must necessarily be examined as unique health contexts with unique stressors.
3. Traumatic academic experiences can occur at any point in an individual's academic career where they inhabit a subordinate position and thus K-12 students, post-secondary education students, and early-career faculty are all potentially at risk of being traumatized by the education system.

Figure 1. The new conceptual model of academic trauma





## **Potential Moderators of the Hypothesized Academic Trauma—Health Link**

Various aspects of students' identities and educational institutions may influence the potential contribution of traumatic academic experiences to students' physical and mental health outcomes. However, this study focuses on three culturally-relevant factors as potential risk or protective factors: ethnic-racial identity centrality, emotion regulation (i.e., racialized emotion management), and perceived school equity. These three factors were selected based on a robust body of research detailing their role in shaping students' school experiences and responses to discrimination (Banks & Kohn-Wood, 2007; Bottiani, Bradshaw, & Mendelson, 2017; Weissberg, Durlak, Domitrovich, & Gullotta, 2015).

**Ethnic-racial identity centrality.** A robust amount of literature details the importance of ethnic-racial identity in understanding the experiences and wellbeing of Black Americans (Marks et al., 2004). Most relevant to this review is research detailing a specific aspect of ethnic-racial identity that has emerged as particularly salient for students: centrality (Sellers & Shelton, 2003; Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003). Centrality refers to the extent to which an individual considers race to be a central part of their identity (Banks & Kohn-Wood, 2007).

Sellers and Shelton (2003) found that higher levels of centrality are associated with greater reports of discrimination. Students who scored higher on centrality were also more likely to perceive ambiguous events as discriminatory than their counterparts who scored lower on centrality. Moreover, Sellers and colleagues (2003) recruited a sample of 555 Black undergraduate students to assess relationships among racial identity, racial discrimination, perceived stress, and psychological distress. Results revealed that greater experiences with racial discrimination predicted greater psychological distress in students who reported race as being

less central to their identity. Neblett and colleagues (2004) also found that centrality buffered against psychological distress.

Given that academic trauma is conceptualized here as the experience of discrimination at the intersection of both racial and institutional power dynamics, it stands to reason that students' ethnic-racial identity may influence their experience and perception of such discrimination.

Based on previous research on ethnic-racial identity, Black students with stronger racial centrality may be more vulnerable to the physical and mental effects of academic trauma, such that they report experiencing more somatic complaints and posttraumatic stress symptomology.

**Emotion regulation.** Emotion regulation refers to a set of skills and strategies individuals use to regulate and address their own emotional experiences. These strategies help individuals adapt to social situations or norms, and thus achieve various goals (Calkins & Hill, 2007; Eisenberg & Spinrad, 2004). Research indicates that emotion regulation may play a central role in shaping student wellbeing in academic contexts (Harley, Jarrell, & Lajoie, 2019; Lopez & Denny, 2019).

Researchers have outlined two overarching types of emotion regulation strategies: antecedent-focused strategies and response-focused strategies (Gross & John, 2003). Antecedent-focused emotion regulation strategies consist of responses preceding full emotional and physiological responses and behavior change. Conversely, response-focused emotion regulation strategies capture responses that occur after an emotional response has been generated. Beyond this broad distinction of emotion regulation strategies, researchers have historically attended most to strategies that (1) occur often in everyday life and (2) are easily examined within the context of individual difference (Gross & John, 2003). Two such specific emotion regulation strategies that have been found to be associated with student outcomes are particularly relevant

to this review: cognitive reappraisal and expressive suppression (Gross & John, 2003; Harley, Jarrell, & Lajoie, 2019; Lopez & Denny, 2019).

Cognitive reappraisal<sup>1</sup> is an antecedent-focused strategy that involves reframing emotion-producing situations or circumstances before an emotion is experienced in order to alter its influence (Gross & John, 2003; Lazarus & Alfert, 1964; Wang, Chen, & Han, 2017). An example of this would be a patient viewing a difficult medical procedure as a chance to be proactive about their health, rather than a result of their poor health behaviors. Conversely, expressive suppression is a response-focused strategy that involves attempting to alter the expression of an already ongoing emotion (e.g., trying not to cry; Gross, 1998; Harley, Jarrell, & Lajoie, 2019).

Researchers have found that cognitive reappraisal is associated with greater overall wellbeing (Harley, Jarrell, & Lajoie, 2019; Lopez & Denny, 2019; Schutte, Manes, & Malouff, 2009), while expressive suppression is associated with negative outcomes such as increased negative affect, depression symptomology, and poorer overall health in student samples (John & Gross, 2007; Lopez & Denny, 2019). For example, Harley and colleagues (2019) assessed emotion regulation (i.e., cognitive reappraisal and emotion suppression) and physiological activation (i.e., electrodermal activity and skin conductance) in a sample of 37 medical students. Results from this study demonstrated that students who habitually employed cognitive reappraisal reported higher levels of learner's pride, while students who habitually engaged in expressive suppression reported higher levels of shame, anxiety, and hopelessness. This study

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<sup>1</sup> Note: Cognitive *reappraisal* and cognitive *appraisal* are used interchangeably throughout the emotion regulation literature base to characterize the process of reframing an event or set of circumstances that has the potential to produce an emotional response. For the purposes of this research, I use the term cognitive *reappraisal* in accordance with heavily cited works on emotion regulation strategies (e.g., Gross & John, 2003).

also found that expressive suppression significantly and positively predicted higher skin conductance levels, which is indicative of greater emotional arousal.

Lopez and Denny (2019) found similar results in a sample of 393 undergraduate students. Results indicated that participants' self-reported use of cognitive reappraisal strategies predicted better global health as mediated by fewer depressive and anxiety symptoms. Conversely, expressive suppression predicted poorer overall health as mediated by greater depressive and anxiety symptoms. Taken together, this pattern of results suggests that response-focused strategies, such as expressive suppression, may exacerbate the relationship between students' negative academic experiences and poorer health outcomes. On the other hand, antecedent-focused strategies, such as cognitive reappraisal, may protect against poor health outcomes that may be associated with negative academic experiences.

***Racialized emotion management.*** Importantly, however, some social settings and situations may elicit the use of emotion suppression strategies as a protective measure for certain social groups. More specifically, people of color may find themselves engaging in a racialized form of response-focused emotion regulation, or racialized emotion management, in racialized social settings (Lozada, 2020). Though understudied, racialized emotion management has been conceptualized as the emotion regulation strategies that people of color engage in to navigate interracial interactions (Bonilla-Silva, 2019) and survive in racialized social settings (e.g., the workplace, academic settings; Wingfield, 2010).

The literature on racial differences in perceptions of emotional expression creates a framework to better understand the need for racialized emotion management. Research has found evidence of outgroup bias in perceptions of emotional expression, such that individuals are better at accurately interpreting the emotions of ingroup members (Elfenbein & Ambady, 2000;

Elfenbein & Ambady, 2002a). For example, researchers have found that White college students interpret the emotions of other White students more accurately than they do the emotions of Black students (Nowicki, Glanville, & Demertzis, 1998). Moreover, research by Chiao and colleagues (2004) found that White Americans interpret African American faces, particularly angry and fearful ones, with less accuracy than they do other White or Asian American faces. Research examining racialized perceptions of emotions also demonstrates that preservice teachers mislabel non-angry Black faces as angry more so than White faces (Halberstadt, Castro, Chu, Lozada, & Sims, 2018).

In the case of Black students, such biased perception may have dire consequences, as Black individual's emotional expression, particularly anger and fear, is associated with White individual's perceptions of threat and approachability (Willis, Windsor, Lawson, & Ridley, 2015). To offset these effects in academic settings, Black students may engage in a racialized form of emotion management and suppress their emotions to prevent being perceived in a negative or stereotypical light (Lozada, 2020). Said differently, racialized emotion management may be an adaptive or protective strategy that Black students employ to protect themselves from potential discriminatory racial encounters in schools.

Support for the racialized emotion management process can be found in research on racialized "feeling rules," or expected feeling norms, in the workplace (Hochschild, 1983; Wingfield, 2010). Harlow's (2003) work on Black professors illustrates this point. Harlow contends that Black professors experience racialized classroom dynamics in which they must constantly defend their content expertise and authority as instructors. More specifically, due to stereotypes about the intellectual capabilities of Black Americans, Harlow argues that Black professors may have negative classroom interactions with White students who question their

knowledge and capabilities. In response to such experiences, Black professors necessarily regulate their emotions (e.g., frustration and anger) to maintain professionalism and a positive classroom environment. In this way, Black professors engage in emotion work to ensure that their emotion expression aligns with the racialized feeling norms expected of them in their line of work (Harlow, 2003; Wingfield, 2010).

While little research to date has examined this phenomenon in student samples, education scholars contend that students from marginalized racial/ethnic backgrounds must develop additional psychosocial competencies (e.g., emotion regulation) to navigate racialized educational environments (Perry et al., 2004). Notably, these coping strategies employed to navigate racialized environments often involve emotion management or suppression (Harlow, 2003), which is associated with negative indicators of mental health (i.e., anxiety, depression, and negative affect; Hu et al., 2014), particularly in samples with Western cultural values (i.e., open expression of emotions and individualism; Frijda & Sundararajan, 2007). Consequently, it is plausible that greater use of racialized emotion management to navigate racialized school environments may be associated with poorer health outcomes in Black American students.

**Perceived equity.** Equity, which is often conceptualized as “social justice or fairness” (Braveman & Gruskin, 2003, p. 254) is a growing concept of study in education research. In schools, equity refers to “treating students fairly by ensuring that each student receives what they need to be successful” (Debnam, Johnson, Waasdorp, & Bradshaw, 2014, p. 448). It is an important aspect of school climate that encourages positive student adjustment and success (Marsh & Overall, 1980; Marsh & Roche, 1997; Rodabaugh & Kravitz, 1994; Walsh & Maffei, 1994). However, research provides evidence that students from marginalized racial/ethnic backgrounds may be particularly vulnerable to educational inequity (Booker, 2006) and often

perceive less cultural inclusivity in schools than their White counterparts (Bottiani, Bradshaw, & Mendelson, 2017; Debnam, Johnson, Waasdorp, & Bradshaw, 2014). For example, in a study of 578 undergraduate students from diverse racial/ethnic backgrounds, researchers found that Black students perceived more racial conflict on campus and reported being treated less equitably by educators and staff members than their White counterparts (Ancis, Sedlacek, & Mohr, 2000). Similarly, using a public data set with responses from 19,833 students from 52 high schools, Debnam, Johnson, Waasdorp, and Bradshaw (2014) found that perception of more school equity is associated with greater reports of students' school engagement and perceived connection to their school.

Research also indicates that perception of an inequitable academic climate, specifically in the context of differential treatment by teachers/instructors, is associated with poor mental health outcomes. More specifically, Wong, Eccles, and Sameroff (2003) conducted a study with 629 Black adolescents examining the impact of racial discrimination on students' academic and psychological outcomes. Participants completed measures of perceived discrimination, positive connection to ethnic group, perception of differential treatment based on race, academic achievement, academic motivation, and mental health. Results revealed that perceptions of differential treatment based on race were associated with increases in anger and depression.

Taken together, these results indicate that student perceptions of school equity shape their academic experiences and psychological adjustment. Given that traumatic academic experiences occur at the intersection of inequitable racial and educational power dynamics, I posit that students' perceptions of school equity may influence the relationship between traumatic academic experiences and physical and mental health outcomes. More specifically, since greater perception of school equity is associated with more positive student outcomes, students who

report academic trauma but perceive more equity in their school may report better physical and mental health outcomes. Conversely, however, students who perceive less school equity may be more vulnerable to the physical and mental effects of academic trauma.

### **The Focus of the Present Study**

While many marginalized racial/ethnic groups experience and live with racism, the present research focuses on Black students. Black Americans report greater exposure to racial maltreatment (Chou, Asnaani, & Hofmann, 2012), including both microaggressions (Landrine et al., 2006) and overt discrimination (Chou et al., 2012; Cokley, Hall-Clark, & Hicks, 2011), than their counterparts of other marginalized racial/ethnic groups. Additionally, data from the National Survey of American Life revealed that Black Americans report higher rates of PTSD and posttraumatic stress symptomology than their White (Himle, Baser, Taylor, Campbell, & Jackson, 2009) or Asian and Latinx counterparts (Chou et al., 2012; Zoellner, Feeny, Fitzgibbons, & Foa, 1999). Research also demonstrates that rates of PTSD recovery are lower for Black Americans than their non-Hispanic White counterparts in longitudinal studies (Pérez Benítez et al., 2014). Given these notable racial disparities in responses to traumatic stress, it is important to examine a broader range of traumatic experiences that may shape Black Americans' exposure to traumatic stress.

The present study also limits its focus to undergraduate students. Many undergraduate students are entering an important developmental period of identity exploration and formation (Arnett, 2000; Erikson, 1968). Thus, investigation of trauma exposure and its sequelae may be particularly relevant for Black undergraduate students.

### **The Goal of the Current Study**



Despite a growing body of conceptual narratives detailing the toll of racism and unchecked abuses of power on students, the potentially traumatic academic experiences of students remain understudied. This study tested the hypothesis that academic trauma predicts the somatic complaints and posttraumatic stress symptomology of Black undergraduate students. This research also examined several culturally relevant moderators of the hypothesized relationship between academic trauma and health outcomes: ethnic-racial identity centrality, racialized emotion management, and perceived equity.

It was hypothesized that Black undergraduate student experiences of academic trauma would be positively correlated with reports of somatic and posttraumatic stress symptomology. It was further hypothesized that stronger identification with their ethnic-racial identity (i.e., higher racial centrality scores) would strengthen the association between academic trauma and somatic and posttraumatic stress symptomology. Conversely, it was predicted that greater racialized emotion management would weaken the association between academic trauma and somatic and posttraumatic stress symptomology. Similar results were expected of perceptions of school equity; such that greater perception of school equity was expected to weaken the hypothesized association. Finally, it was also predicted that greater racialized emotion management would be associated with greater reports of somatic symptoms.

This is the first study to date, to my knowledge, to empirically examine academic trauma. As such, this research sought to unpack the relationship between students' school experiences and short-term health outcomes, as opposed to examining educational attainment and long-term health outcomes. Through the identification of specific experiences that are characteristic of academic trauma as well as its potential physical and mental health sequelae, this research provides data to inform school-based health services and health promotion efforts for Black

undergraduate students. Additionally, identification of culturally-relevant risk factors of academic trauma will inform future studies aimed at developing interventions and education policy to improve the school experiences and health outcomes of Black undergraduate students. This work also has implications for the reduction and elimination of racial health disparities, as scholars have outlined the importance of examining the specific circumstances through which oppressive forces (e.g., discrimination) contribute to health outcomes (Williams & Mohammed, 2009).

It is important to note that the point of this research is not to insinuate that Black students' school experiences are all negative, or that Black students do not survive and thrive in academic settings. Black students demonstrate great resilience and success in schools, as evidenced by data demonstrating that Black women earn the most certificates, associate's degrees and bachelor's degree across all racial/ethnic groups, and that more Black students are enrolling in undergraduate programs than ever before (Nichols & Evans-Bell, 2017). Rather, this work sought to give voice to the very real issues that Black students face in American educational institutions, and to hold space for what scholar Michael J. Dumas has termed "black suffering" within the context of schooling (Dumas, 2016). More specifically, Dumas (2016) cites "the inequitable distribution of educational resources and the continued mistreatment of Black children in schools" as evidence that schools function as sites of Black suffering. My dissertation research adopts this frame, and seeks to honor the experiences of Black students while also illuminating the interconnectivity of education and health disparities through investigation of the contribution of adverse educational experiences to the health outcomes of Black students.

## **Methods**

### **Participants**

A cross-sectional online survey design was used to test the proposed associations between academic trauma, somatic complaints, and posttraumatic stress symptoms. A total of 176 self-identified Black post-secondary students aged 18 and older were recruited for this study. Participants were recruited via the SONA online research participant system through the VCU Department of Psychology. Flyers were also distributed through a variety of mediums (e.g., social media, emails to my professional network, and listservs) to recruit a broader range of participants at different institutions. To be eligible for the study, participants had to: (1) be at least 18 years of age, (2) self-identify as Black/African-American, and (3) be currently enrolled as an undergraduate student. Participants who did not meet the screening criteria ( $n = 19$ ) or did not complete the entire survey ( $n = 27$ ) were excluded from the current analysis, resulting in a total of 130 analyzable cases. A power analysis using G\*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) indicated that at least 160 participants are required to detect a small to medium effect size ( $d = .07$ ) with adequate power (.80) and with two test variables (i.e., academic trauma and each moderator), the two-way interactions between each set of predictors (i.e., academic trauma X ethnic-racial identity; academic trauma X emotion regulation; academic trauma X perceived school equity), and five control variables (i.e., general trauma, racial trauma, racial discrimination, and college stress).

## **Procedure**

Interested participants were first directed to the online pre-screening process to determine their eligibility. Participants who did not meet inclusion criteria for the study were notified and directed out of the study. Eligible participants were redirected to the online consent form, which provided an overview of the study topic, purpose, and survey measures and informed participants that their data would remain anonymous and confidential. Participants who consented to

participate were then directed to the full survey, which took approximately 30-45 minutes to complete. Once they completed the survey, SONA participants were automatically granted research credits, while participants outside of VCU were offered the opportunity to enter a drawing for one of fifteen \$50 Amazon gift cards.

## Measures

### **Predictor variable.**

*Academic trauma.* Academic trauma was assessed using an adapted version of the Intersectional Discrimination Index, which is a 33-item measure of anticipated and actual discrimination at the intersection of multiple indices of identity (e.g., race, gender;  $\alpha = .93$ ; Scheim & Bauer, 2019; Appendix A, p. 134). Participants responded to 17 questions assessing various negative academic experiences they had during their tenure at their current university/college on a scale from 1 (never) to 5 (almost every day). Sample items included “because I am a student of color, I have been steered away from science, technology, engineering, and mathematics (STEM) majors,” “because I am a student of color, I have been treated as less capable or smart than other students,” and “because I am a student of color, I have been called names or heard/saw my identity used as an insult.” A factor analysis was conducted to further understand the structure of the Academic Trauma Scale. All items loaded with simple structure (i.e.,  $\geq .40$ ) on one factor, which suggests that the measure is indeed measuring one overall construct: academic trauma. Higher scores indicated greater experiences of academic trauma. The Academic Trauma Scale demonstrated high internal consistency in this sample ( $\alpha = .92$ ).

### **Outcome variables.**

***Somatic Symptoms.*** Participants' somatic symptoms were assessed using the 7-item somatic subscale of the Brief Symptom Inventory ( $\alpha = .71$ ; BSI; Derogatis, 1993; Appendix B, p. 135). Participants reported the extent to which they had been bothered by such problems as "faintness or dizziness" and "nausea or upset stomach" during their tenure at their current university/college on a scale from 1 (not at all) to 5 (extremely). Higher scores indicated greater severity of somatic complaints. The BSI has been used with diverse populations and has been validated with college students (Juang, Ittel, Hoferichter, & Gallarin, 2016; Rodriguez et al., 2003). The internal consistency of the BSI within the current sample was high ( $\alpha = .84$ ).

***Posttraumatic stress symptomology.*** Participants' mental health was indexed using the civilian version of the PTSD Checklist ( $\alpha = .91$ , PCL; Weathers, Litz, Herman, Huska, & Keane, 1993; Appendix C, p. 136). The PCL is a 17-item scale that assesses posttraumatic stress symptomology as outlined by the DSM. Respondents rated how bothered they had been by various problems related to a traumatic event during their tenure at their current university/college. Sample problems included "feeling very upset when something reminded you of the stressful experience," and "avoiding activities or situations because they remind you of the stressful experience." Each item was rated on a 5-point scale from 1 (not at all) to 5 (extremely); higher scores denoted greater severity of posttraumatic stress symptomology. The PCL demonstrated high internal consistency within the current sample ( $\alpha = .94$ ).

### **Moderators.**

***Ethnic-racial identity centrality.*** Participants' ethnic-racial identity centrality was assessed using the centrality subscale of the Multidimensional Inventory of Black Identity (MIBI; Sellers et al., 1997; Appendix D, p. 138). The centrality subscale ( $\alpha = .78$ ) consists of eight items assessing how central respondents feel their race is to their self-concept. Sample

items include “*In general, being Black is an important part of my self-image,*” and “*I have a strong attachment to other Black people.*” Participants rated each item on a 5-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores on this measure denoted greater centrality of ethnic-racial identity. The MIBI has been validated with Black undergraduate samples (Banks & Kohn-Wood, 2007). Consistent with prior research, the centrality subscale demonstrated adequate internal consistency within this sample ( $\alpha = .76$ ).

***Racialized emotion management.*** Participants’ use of racialized strategies to regulate emotions were assessed using three items adapted from the Racialized Beliefs about Emotions measure (Lozada, 2020; Appendix E, p. 139). Sample items included “as a Black person, I try to choose the right time and place to express my emotions.” Responses were measured on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree); higher scores denoted more racialized emotion management. The racialized emotion management subscale demonstrated adequate internal consistency within this sample ( $\alpha = .77$ ).

***Perceived equity.*** Participants’ perceptions of school equity and cultural inclusivity were assessed using the equity scale ( $\alpha = .82$ ; Bradshaw et al., 2014; Debnam et al., 2014; Haynes, Emmons, & Ben-Avie, 2001; Appendix F, p. 140). This four-item scale assesses perceptions of equitable treatment on the basis of such backgrounds as race, socioeconomic status, and gender, as well as cultural inclusivity, using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Sample items include “At this school, students of all races are treated the same” and “The school provides instructional materials that reflect my culture.” Higher scores represented greater perception of equity. The internal consistency of the equity scale within this sample was high ( $\alpha = .84$ ), consistent with prior research.

**Potential covariates.** To determine if academic trauma is a distinct form of systemic trauma that predicts students' mental and physical health outcomes over and above other forms of trauma, both general trauma (e.g., witnessed or vicarious violence, natural disasters) and racial discrimination were included in the main analyses as covariates. Additionally, I included college stress as a covariate to ensure that academic trauma was tapping into separate factors outside of general college stressors. Participant reports of their overall health status were also included as a covariate in order to parse out health effects of academic trauma separate from those associated with students' general health status. Finally, emotional regulation (i.e., expressive suppression, cognitive appraisal) was included as a covariate in order to examine the effects of racialized emotion management on the relationship between academic trauma and Black student health outcomes over and above the effects of more generalized emotion regulations strategies.

**General trauma.** To assess lifetime exposure to potentially traumatic events, participants completed the Life Events Checklist ( $\alpha = .63$ ; LEC; Gray et al., 2004; Appendix G, p. 141). The original measure lists 17 potential traumas (e.g., natural disaster and sudden unexpected death of a loved one). The LEC converges with other measures used to assess trauma exposure including the Traumatic Life Events Questionnaire ( $r = .55$ ) and the Clinician-Administered PTSD Scale ( $r = .39$ ) (Gray, et al., 2004). The scale has also been validated with diverse student samples (Polanco-Roman, Danies, & Anglin, 2016). For this study, however, three items about physical and sexual assault were collapsed into one item that assessed being attacked, shot, stabbed, threatened with a weapon, or experiencing any unwanted advances. These items were collapsed in order to prevent any confidentiality concerns or participant discomfort that may have arisen by asking participants to directly report sexual violence or victimization. This resulted in 14 total items. Respondents were instructed to indicate their level of exposure to the different traumas

(i.e., not sure, never exposed, learned about it, witnessed it, or directly experienced it) on a scale from 1 to 5, where 5 was direct experience of a trauma. Composite scores were developed by recoding values for each of the 14 items. More specifically, for each item, participant responses were dichotomized (i.e., recoded into either 0 or 1). If they had only learned about, never been exposed to, or reported not being sure about experiencing that particular form of trauma, participant responses were recoded with a score of 0. Conversely, if participants reported either witnessing or directly experiencing a trauma, their responses were recoded as 1. Participant scores on each item were then summed, creating a possible range of 0-14. Higher scores on this measure indicated greater trauma exposure. Consistent with prior research, the LEC demonstrated adequate internal consistency within the sample ( $\alpha = .69$ ).

***Racial discrimination.*** Participant experiences of racial discrimination were measured using the Major Experiences of Discrimination Scale ( $\alpha = .92$ ; EDS; Sternthal, Slopen, & Williams, 2011; Appendix H, p. 142). The 6-item scale assesses poor treatment from others. Sample items include “at any time in your life, have you ever been unfairly fired from a job or been unfairly denied a promotion?” and “for unfair reasons, have you ever not been hired for a job?” Respondents indicated the frequency of discriminatory experiences on a scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores denoted more major experiences of discrimination. Consistent with prior research, the EDS demonstrated adequate internal consistency within this sample ( $\alpha = .74$ ).

***College stress.*** General college stressors were assessed using the University Stress Scale ( $\alpha = .83$ ; USS; Stallman, 2008; Stallman, 2016; Appendix I, p. 143). Respondents reported how frequently they experienced stress from any of 11 stressors during their tenure at their current university/college on a scale from 1 (never) to 5 (everyday). Sample items include



“academic/coursework demands” and “romantic relationships.” Higher scores indicated greater college stress. Consistent with prior research, the USS demonstrated adequate internal consistency within this sample ( $\alpha = .80$ ).

**Overall health.** Participants’ overall health was assessed using the 20-Item Short Form Survey (SF-20; Stewart, Hays, & Ware, 1988; Ware, Sherbourne, & Davies, 1992; Appendix J, p. 144). Participants reported perceptions of their health on six dimensions; physical functioning (6 items; 3-point Likert scale), role functioning (2 items; 3-point Likert scale), social functioning (1 item; 6-point Likert scale), mental health (5 items; 6-point Likert scale), current health perceptions (4 items; 5-point Likert scale), and pain (1 item; 6-point Likert scale). The scales were scored such that higher scores represented better functioning and health. Examples items include “for how long [if at all] has your health limited you in each of the following activities” (physical functioning) and “how much bodily pain have you had during your time at your current university/college” (pain). The SF-20 demonstrated high internal consistency within this sample ( $\alpha = .89$ ).

**Emotion regulation.** The Emotion Regulation Questionnaire (ERQ) was used to assess the degree to which participants engage in emotion regulation (Gross & John, 2003; Appendix E, p. 139). Participants responded to 10 items overall assessing skills in cognitive reappraisal (e.g., “I control my emotions by changing the way I think about the situation I’m in;”  $\alpha = .79$ ) and expressive suppression (e.g., “I keep my emotions to myself;”  $\alpha = .73$ ) on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores on the ERQ indicated greater use of emotion regulation strategies. Consistent with prior research, both the cognitive reappraisal and expressive suppression subscales demonstrated high internal consistency within this sample ( $\alpha = .83$  and  $\alpha = .81$ , respectively).

**Demographics.** Participants self-reported the following information: age, race/ethnicity, gender, high school demographics, major/program of study, current year in school, parental education level, first-generation student status, sexual orientation, marital status, and financial status (Appendix K, p. 146).

### **Analysis Plan**

Data were tested first for assumption violations for normality, linearity, outliers, and missingness using descriptive statistics. Results indicated that all but two variables were normally distributed. More specifically, two variables were both skewed and kurtotic: academic trauma [*skewness* = 1.091 (*SE* = .212) and *kurtosis* = 1.296 (*SE* = .422)] and somatic complaints [*skewness* = 1.430 (*SE* = .212) and *kurtosis* = 2.495 (*SE* = .422)]. Given the normality assumption for outcome variables, a square root transformation was conducted for somatic complaints. The transformation was successful in improving the normality of the variable: *skewness* = .930 (*SE* = .212) and *kurtosis* = .545 (*SE* = .422).

Review of scatterplots for each variable also revealed adequate linearity. Mahalanobis distance scores were examined for each case in order to screen for multivariate outliers. Results of a multiple regression revealed two cases that exceeded the critical Chi-square value of 32.9505 at  $p = .001$ . However, because multivariate analyses are robust to the present of slight outliers (Tabachnick & Fidell, 2012), both outliers were included in the final analyses. Finally, there was no missingness as only cases that were 99% complete were included in the analyses.

Bivariate correlations among all variables were conducted to identify potential covariates before the main hypothesis testing (Table 1). Variables that were significantly associated with the predictor variable (i.e., academic trauma) and/or the outcome variables (i.e., somatic complaints and posttraumatic stress symptomology) were included in the hypothesis testing as

covariates. Examinations of correlation coefficients revealed that expressive suppression was significantly and positively associated with both academic trauma ( $r = .249, p < .001$ ) and posttraumatic symptomology ( $r = .300, p < .001$ ), while reports of cognitive reappraisal were *not* significantly associated with either academic trauma ( $r = -.045, p = .609$ ) or posttraumatic stress symptomology ( $r = -.156, p = .077$ ). Major experiences of discrimination were also positively associated with the academic trauma ( $r = .408, p < .001$ ), and both outcome variables: somatic complaints ( $r = .255, p < .001$ ) and posttraumatic stress symptomology ( $r = .175, p < .001$ ). Moreover, college stress was found to be positively associated with academic trauma ( $r = .627, p < .001$ ), somatic complaints ( $r = .477, p < .001$ ), and posttraumatic stress symptomology ( $r = .666, p < .001$ ). Participants' self-reported overall health was also included in the hypothesis testing as a covariate, given its significant and negative associations with the predictor ( $r = -.440, p < .001$ ) and outcome variables [ $(r = -.661, p < .001$  for somatic complaints and  $(r = -.685, p < .001$ ) for posttraumatic stress symptomology, respectively]. Reports of general trauma were significantly and positively associated with academic trauma ( $r = .352, p < .001$ ), as well as somatic complaints ( $r = .369, p < .001$ ) and posttraumatic stress symptomology ( $r = .357, p < .001$ ).

Financial burden was also significantly and positively correlated with the predictor ( $r = .177, p < .001$ ) and somatic complaints ( $r = .207, p < .001$ ). Participants' self-reported appraisal of the extent to which their high school experience prepared them for their current university/college was also significantly and negatively associated with academic trauma ( $r = -.286, p = .003$ ), as well as somatic complaints ( $r = -.205, p = .033$ ) and posttraumatic stress symptomology ( $r = -.237, p = .013$ ). Finally, sexual orientation was significantly and negatively associated with both academic trauma ( $r = -.226, p = .010$ ) and posttraumatic stress

symptomology ( $r = -.230, p = .008$ ). Consequently, eight variables were selected as covariates based on their significant associations with the predictor and/or outcome variables: expressive suppression, major experiences of discrimination, college stress, overall health, general trauma, financial burden, high school experience, and sexual orientation. Cognitive appraisal was not included as a covariate, as it was not significantly associated with either the predictor or outcome variables.

Table 1

*Correlations among main variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Academic Trauma	—	.520**	.634**	.202*	.494**	-.478**	.294**	.408**	.627**	-.440**	.352**	.177*	-.286**	-.226**
2. Somatic Complaints		—	.636**	.255**	.367**	-.356**	.063	.255**	.477**	-.661**	.369**	.207*	-.205*	-.172
3. Posttraumatic Stress Symptoms			—	.116	.402**	-.310**	.300**	.175*	.666**	-.685**	.357**	.115	-.237*	-.230**
4. Ethnic-Racial Identity				—	.409**	-.244**	-.088	.195*	.179*	-.173*	.168	-.043	-.058	-.139
5. Racialized Emotion Management					—	-.288**	.340**	.270**	.412**	-.287**	.210*	.064	-.189*	-.153
6. Perceived Equity						—	.004	-.325**	-.417**	.346**	.180*	-.132	.315**	.133
7. Expressive Suppression							—	.019	.271**	-.016	.128	-.019	-.129	.037
8. Major Experiences of Discrimination								—	.244**	-.194**	.281**	.023	-.128	-.156
9. College Stress									—	-.506**	.357**	.171	-.364**	-.207*
10. Overall Health										—	.179**	-.158	.240*	.303**
11. General Trauma											—	.154	-.041	-.095
12. Financial Burden												—	-.236*	-.148
13. High School Experience													—	.270**
14. Sexual Orientation														—
<i>Mean or Frequency</i>	31.00	10.77	41.74	30.93	10.48	11.99	12.68	10.72	33.48	69.96	4.88	119	54	105
<i>Standard Deviation or Proportion</i>	12.05	4.65	15.69	5.03	3.19	3.79	3.71	4.56	7.85	10.81	2.65	92%	42%	80.8%

Note. \* indicates  $p < .05$ , \*\* indicates  $p < .01$ , and \*\*\* indicates  $p < .001$ .

Proportion refers to the proportion of participants not assigned to the reference group.

The aims of this study were to: (1) test whether academic trauma predicts somatic complaints and posttraumatic stress symptomology, (2) examine whether ethnic-racial identity centrality, racialized emotion management, and perceived school equity would moderate the hypothesized relationship between academic trauma and physiological and psychological symptoms, and (3) assess whether racialized emotion management would predict somatic symptoms in a sample of Black undergraduate students. To address these aims, six moderated multiple regressions were conducted using PROCESS (Hayes, 2013). Specifically, in each model, one moderator (i.e., ethnic-racial identity centrality, racialized emotion management, or perceived equity) was entered into PROCESS Model 1 with academic trauma as the predictor variable and either somatic complaints or posttraumatic stress symptomology entered as the outcome variable. The eight aforementioned control variables were also included as covariates in each test. All continuous variables were grand-mean-centered prior to being entered into the analysis. Additionally, all categorical variables were dummy-coded prior to being entered into the analysis. Financial burden was dichotomized (0 for no, 1 for yes) as was preparedness based on high school experience (0 for no, 1 for yes).

A Bonferroni correction was used to correct for potential Type 1 error inflation as this study involves multiple comparisons (Holm, 1979). Consequently, the threshold of significance for tests in this study was  $p > .008$ . A post hoc power analysis conducted with G\*Power (Faul, Erdfelder, Lang, & Buchner, 2007) for an  $F$ -test with  $p > .008$ , 120 participants, and two tested predictor variables revealed that the power achieved with this sample is .46.

## Results

### Participant Characteristics

The majority of participants identified as cisgender women (77.5%). Moreover, the vast majority (92.3%) of participants identified as U.S.-born Black/African American adults. Within those participants, however, 73.1% reported having U.S.-born parents while an additional subset of participants reported African-born (12.3%) and Caribbean-born (6.9%) parents. Participants ranged in age from 18 to 34 (age  $M = 19.89$ ,  $SD = 2.75$ ), though the majority of participants were between the ages of 18 and 24 (93.1%). Table 2 provides all participant demographic data.

Table 2

*Participant Characteristics*

<b>Participant Characteristics</b>	<b><i>M (SD) or N (%)</i></b>
<b><u>Age</u></b>	
18-24	121 (93.1%)
25-34	9 ( 6.9%)
<b><u>Ethnicity</u></b>	
U.S. -born Black adult or African American (parents born in the U.S.)	95 (73.1%)
U.S. -born Black adult or African American (parents born in an African nation)	16 (12.3%)
U.S. -born Black adult or African American (parents born in an Caribbean nation)	9 ( 6.9%)
African-born Black adult	4 ( 3.1%)
Caribbean-born Black adult	1 ( 0.8%)
Not Listed (Please Specify)	5 ( 3.8%)
<b><u>Gender Identity</u></b>	
Cisgender woman	100 (77.5%)
Cisgender man	21 (16.3%)
Transgender woman	1 ( 0.8%)
Transgender man	0 ( 0.0%)
Nonbinary	4 ( 3.1%)
Not Listed (Please Specify)	4 ( 3.1%)
<b><u>Sexual Orientation</u></b>	
Gay or Lesbian	4 ( 3.1%)
Heterosexual	105 (80.8%)
Bisexual	19 (14.6%)
Asexual	1 ( 0.8%)
Questioning	1 ( 0.8%)
Not Listed	0 ( 0.0%)
<b><u>First Generation Status</u></b>	
Yes	84 (64.6%)
No	43 (97.7%)
Uncertain	3 ( 2.3%)
<b><u>Year in School</u></b>	
Freshman	67 (51.5%)
Sophomore	22 (16.9%)
Junior	16 (12.3%)
Senior	14 (10.8%)
Graduate student	11 ( 8.5%)
<b><u>High School Composition</u></b>	
Predominantly White	56 (43.1%)
Evenly Mixed	38 (29.2%)



Predominantly Minority (mostly Black and/or Brown students)	31 (23.8%)
Not Listed	5 ( 3.8%)
<b><u>High School Class Size</u></b>	
Less than 100	10 ( 7.7%)
100-300	41 (31.5%)
300-700	63 (48.5%)
700-1,000	14 (10.8%)
Over 1,000 students	2 ( 1.5%)
<b><u>Financial Aid</u></b>	
Grants	87 ( 66.9%)
Loans	100 (76.9%)
Scholarships	78 ( 60.0%)
No Aid	12 ( 9.2%)
<b><u>Employment Status</u></b>	
Employed Full-time	9 ( 6.9%)
Employed Part-time	61 (46.9%)
Unemployed	60 (46.2%)
<b><u>Marital Status</u></b>	
Married (opposite sex)	3 ( 2.3%)
Married, civil union, or registered domestic partnership (same sex)	0 ( 0.0%)
Widowed	0 ( 0.0%)
Divorced	3 ( 2.3%)
Separated	0 ( 0.0%)
In a committed relationship	30 (23.3%)
Single	93 (72.1%)
<b><u>Parent/Guardian Education Level</u></b>	
Did not finish high school	1 ( 0.8%)
High School Diploma or GED	28 (21.7%)
Associate Degree (2-year degree)	11 ( 8.5%)
Some College	12 ( 9.3%)
Bachelor's Degree (4-year degree)	48 (37.2%)
Graduate Degree (Masters, PhD, JD, MD, etc.)	29 (22.5%)

## Descriptive statistics

Again Table 1 presents means, standard deviations, and bivariate correlations among all major variables. Academic trauma was significantly and positively correlated with both somatic complaints ( $r = .520, p < .001$ ) and posttraumatic stress symptomology ( $r = .634, p < .001$ ), suggesting that participants' somatic complaints and posttraumatic stress symptomology increased as their reports of academic trauma increased. Academic trauma was also significantly and positively associated with college stress ( $r = .627, p < .001$ ) and general trauma ( $r = .352, p < .001$ ). This suggest that reports of college stress and general trauma increased as reports of academic trauma increased. Moreover, academic trauma was significantly and negatively associated with perceived equity ( $r = -.478, p < .001$ ) and overall health ( $r = -.440, p < .001$ ). These associations indicate that participant reports of perceived school equity and their own overall health decreased as reports of academic trauma increased.

Consistent with previous research (Gupta, 2013; Morina, et al., 2018), somatic complaints were significantly and positively correlated with posttraumatic stress symptomology ( $r = .636, p < .001$ ). This suggests that participants' posttraumatic stress symptomology increased as their somatic complaints increased. Finally, racialized emotion management was significantly and positively correlated with academic trauma ( $r = .494, p < .001$ ), somatic complaints ( $r = .376, p < .001$ ), and posttraumatic stress symptomology ( $r = .402, p < .001$ ). This suggests that reports of academic trauma, somatic complaints, and posttraumatic stress symptomology increased as reports of racialized emotion management increased.

## Hypothesis Testing

**Somatic Complaints.** Three separate tests predicting somatic complaints with each of the three moderators were conducted, which yielded the same pattern of the results. The overall

model predicting somatic complaints with academic trauma as a predictor and *ethnic-racial identity centrality as a moderator* was significant,  $F(11, 97) = 9.63$ ,  $MSE = .228$ ,  $p < .001$ ,  $R^2 = .5219$ . However, the main effects of both academic trauma ( $B = .008$ ,  $SE = .005$ ,  $p = .13$ ,  $CI [-.0025, .0194]$ ) and ethnic-racial identity centrality were not significant ( $B = .01$ ,  $SE = .009$ ,  $p = .19$ ,  $CI [-.0064, .0325]$ ). Moreover, the two-way interaction (Academic Trauma X Ethnic Racial Identity Centrality) was also not significant,  $F(1, 97) = 2.08$ ,  $p = .15$ ,  $R^2 = .0103$ . These findings are inconsistent with my hypothesis, suggesting that there is no evidence that higher academic trauma and higher ethnic-racial identity centrality predict greater somatic complaints in Black college students. This pattern of results also suggests a lack of evidence that ethnic-racial identity centrality moderates any potential effect of academic trauma on somatic complaints (Table 3).

Table 3

*Ethnic-racial identity centrality as a moderator predicting somatic complaints*

	<i>B</i>	<i>SE</i>	<i>T</i>	95% <i>CI</i>	
				Lower	Upper
Academic Trauma	.008	.006	1.53	-.0025	.0194
Ethnic-Racial Identity Centrality	.013	.009	1.33	-.0064	.0325
Academic Trauma X Centrality	.001	.000	1.44	-.0004	.0025
<b>Covariates</b>					
Expressive Suppression	-.006	.013	-.42	-.0330	.0215
Major Experiences of Discrimination	-.004	.011	-.36	-.0267	.0186
College Stress	.001	.008	.21	-.0147	.0182
Overall Health	-.031***	.005	-6.22	-.0142	-.0212
General Trauma	.047	.019	2.46	.0091	.0852
Financial Burden	.200	.176	1.14	-.1482	.5489
High School Experience	-.019	.103	-.19	-.2247	.1851
Sexual Orientation	.138	.131	1.05	-.1231	.3391
<b>Constant</b>	-.312	.212	-1.47	-.7331	.1087

Note. \* indicates  $p < .05$ , \*\* indicates  $p < .01$ , and \*\*\* indicates  $p < .001$ .

Similarly, the overall model predicting somatic complaints with academic trauma as a predictor and *racialized emotion management as a moderator* was significant,  $F(11, 97) = 9.49$ ,  $MSE = .229$ ,  $p < .001$ ,  $R^2 = .5183$ . However, the main effects of both academic trauma ( $B = .007$ ,  $SE = .006$ ,  $p = .24$ ,  $CI [-.0046, .0184]$ ) and racialized emotion management ( $B = .028$ ,  $SE = .018$ ,  $p = .11$ ,  $CI [-.0067, .0631]$ ) were not significant. The two-way interaction (Academic Trauma X Racialized Emotion Management) was also not significant,  $F(1, 97) = .4304$ ,  $p = .51$ ,  $R^2 = .0021$ . As in the first analysis, this pattern of results suggests that there is no evidence that higher academic trauma and higher racialized emotion management predict greater somatic complaints, or that racialized emotion management moderates the association between academic trauma and somatic complaints in the current sample (Table 4).

Table 4

*Racialized emotion management as a moderator predicting somatic complaints*

	<i>B</i>	<i>SE</i>	<i>T</i>	95% <i>CI</i>	
				Lower	Upper
Academic Trauma	.007	.006	1.19	-.0046	.0184
Racialized Emotion Management (REM)	.028	.018	1.61	-.0067	.0631
Academic Trauma X REM	.001	.001	.656	-.0015	.0031
<b>Covariates</b>					
Expressive Suppression	-.017	.014	-1.19	-.0451	.0113
Major Experiences of Discrimination	-.003	.011	-.283	-.0259	.0195
College Stress	.002	.008	.247	-.0145	.0186
Overall Health	-.030***	.005	-5.92	-.0400	-.0199
General Trauma	.049	.019	2.55	.0109	.0868
Financial Burden	.188	.175	1.08	-.1601	.5360
High School Experience	-.021	.104	-.201	-.2268	.1851
Sexual Orientation	.109	.129	.846	-.1479	.3678
<b>Constant</b>	-.2778	.212	-1.31	-.6995	.1439

*Note.* \* indicates  $p < .05$ , \*\* indicates  $p < .01$ , and \*\*\* indicates  $p < .001$ .

Finally, the overall model predicting somatic complaints with academic trauma as the predictor and *perceived equity as a moderator* was significant,  $F(11, 97) = 9.12$ ,  $MSE = .234$ ,  $p < .001$ ,  $R^2 = .5084$ . Much like the first two analyses, however, none of the main effects of academic trauma ( $B = .007$ ,  $SE = .006$ ,  $p = .24$ ,  $CI [-.0049, .0196]$ ), perceived equity ( $B = -.009$ ,  $SE = .015$ ,  $p = .54$ ,  $CI [-.0392, .0209]$ ), or the two-way interaction (Academic Trauma X Perceived Equity) were significant,  $F(1, 97) = .5322$ ,  $p = .47$ ,  $R^2 = .0027$  (Table 5).

Table 5

*Perceived equity as a moderator predicting somatic complaints*

	<i>B</i>	<i>SE</i>	<i>T</i>	95% <i>CI</i>	
				Lower	Upper
Academic Trauma	.007	.006	1.19	-.0049	.0196
Perceived Equity (PE)	-.009	.015	-.60	-.0392	.0209
Academic Trauma X PE	.001	.001	-.73	-.0029	.0014
<b>Covariates</b>					
Expressive Suppression	-.007	.014	-.525	-.0350	.0204
Major Experiences of Discrimination	-.002	.012	-.146	-.0248	.0214
College Stress	.001	.009	.139	-.0157	.0181
Overall Health	-.031***	.005	-6.02	-.0417	-.0210
General Trauma	.047	.019	2.45	.0091	.0858
Financial Burden	.193	.179	1.08	-.1609	.5476
High School Experience	-.002	.107	-.01	-.2129	.2098
Sexual Orientation	.079	.132	.60	-.1828	.3415
<b>Constant</b>	-.2718	.217	-1.25	-.7023	.1586

*Note.* \* indicates  $p < .05$ , \*\* indicates  $p < .01$ , and \*\*\* indicates  $p < .001$ .

**Posttraumatic Stress Symptomology.** Three separate tests predicting posttraumatic stress symptomology with each of the three moderators were conducted. The pattern of results differed from that for somatic complaints. The overall model predicting posttraumatic stress symptomology with academic trauma as a predictor and *ethnic-racial identity centrality as a moderator* was significant,  $F(11, 97) = 20.11, MSE = 87.15, p < .001, R^2 = .6952$ . Furthermore, the main effect of academic trauma was significant ( $B = .373, SE = .108, p = .0008, CI [.1589, .5880]$ ), suggesting that academic trauma is a significant predictor of posttraumatic stress symptomology in this sample, as predicted. However, neither the main effect of ethnic-racial identity centrality ( $B = -.157, SE = .191, p = .41, CI [-.5380, .2231]$ ) nor the two-way interaction (Academic Trauma X Ethnic Racial Identity Centrality) were significant,  $F(1, 97) = 1.74, p = .19, R^2 = .0055$ . These findings are inconsistent with my hypothesis, suggesting that there is no evidence that ethnic-racial identity centrality predicts posttraumatic stress symptomology or moderates the relationship between academic trauma and posttraumatic stress symptomology in Black college students (Table 6).

Table 6

*Ethnic-racial identity centrality as a moderator predicting posttraumatic stress symptomology*

	<i>B</i>	<i>SE</i>	<i>T</i>	95% <i>CI</i>	
				Lower	Upper
Academic Trauma	.374***	.108	3.45	.1589	.5880
Ethnic-Racial Identity Centrality	-.157	.192	-.82	-.5380	.2231
Academic Trauma X Centrality	.019	.014	1.32	-.0095	.0472
<b>Covariates</b>					
Expressive Suppression	.709	.269	2.64	.1758	1.2421
Major Experiences of Discrimination	-.396	.224	-1.77	-.8392	.0479
College Stress	.427	.162	2.63	.1050	.7493
Overall Health	-.729***	.098	-7.42	-.9247	-.5346
General Trauma	.816	.376	2.17	.0686	1.5603
Financial Burden	-5.76	3.44	-1.67	-12.585	1.0665
High School Experience	.854	2.02	.42	-3.1590	4.8661
Sexual Orientation	.603	2.58	.23	-4.5088	5.7156
<b>Constant</b>	4.78	4.15	1.15	-3.4672	13.0186

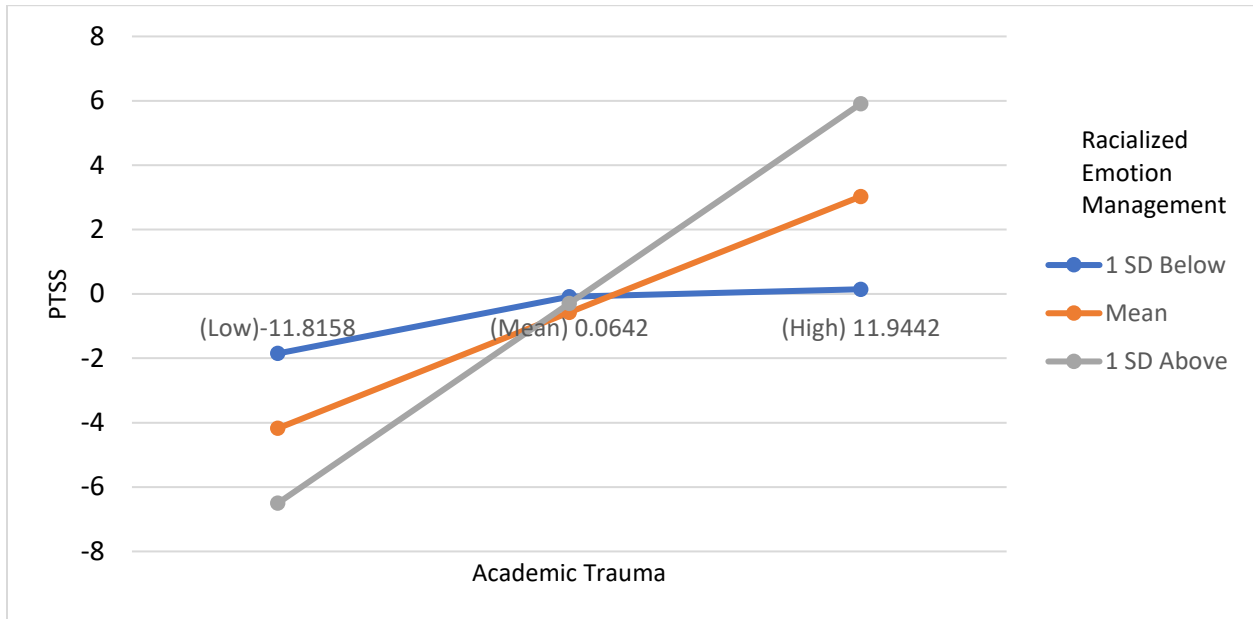
Note. \* indicates  $p < .05$ , \*\* indicates  $p < .01$ , and \*\*\* indicates  $p < .001$ .

The overall model predicting posttraumatic stress symptomology with academic trauma as a predictor and *racialized emotion management as a moderator* was also significant,  $F(11, 97) = 22.25$ ,  $MSE = 81.17$ ,  $p < .001$ ,  $R^2 = .7161$ . As in the previous analysis, the main effect of academic trauma was significant as predicted, ( $B = .298$ ,  $SE = .109$ ,  $p = .007$ ,  $CI [.0819, .5145]$ ). This suggests that academic trauma is a significant predictor of posttraumatic stress symptomology in this sample. Additionally, while the main effect of the moderator (i.e., racialized emotion management) was not significant ( $B = .081$ ,  $SE = .331$ ,  $p = .80$ ,  $CI [-.5758, .7387]$ ), the two-way interaction (Academic Trauma X Racialized Emotion Management) was significant,  $F(1, 97) = 9.94$ ,  $p = .002$ ,  $R^2 = .0291$ . While the simple slope for academic trauma was not significant at low levels (i.e., 1 SD below the mean) of racialized emotion management, ( $B = .084$ ,  $SE = .140$ ,  $p = .55$ ,  $CI [-.1952, .3633]$ ), it was significant at the mean ( $B = .075$ ,  $SE = .109$ ,  $p = .006$ ,  $CI [.0876, .5189]$ ) as well as high levels (i.e., 1 SD above the mean) of racialized emotion management, ( $B = .522$ ,  $SE = .116$ ,  $p < .001$ ,  $CI [.2920, .7530]$ ).

Additionally, results from the Johnson-Neyman analysis indicate that racialized emotion management scores of 9.47 and above (on a scale ranging from 3-15) constitute the defining significance region (see Figure 2 below). Taken together, these findings suggest that academic trauma is significantly associated with posttraumatic stress symptomology among Black college students who reported at least average levels of racialized emotion management. In contrast, academic trauma is not associated with posttraumatic stress symptomology among Black college students who reported low levels of racialized emotion management (Table 7).

Figure 2. Two-Way Interaction (Academic Trauma X Racialized Emotion Management)

Predicting Posttraumatic Stress Symptomology



Note. All continuous variables were grand-mean-centered prior to the analyses.

Table 7

Racialized emotion management as a moderator predicting posttraumatic stress symptomology

	<i>B</i>	<i>SE</i>	<i>T</i>	95% <i>CI</i>	
				Lower	Upper
Academic Trauma	.298**	0.109	2.74	.0819	.5145
Racialized Emotion Management (REM)	.081	0.331	.24	-.5758	.7387
Interaction Term (Academic Trauma X REM)	.068**	0.021	3.15	.0250	.1101
<b>Covariates</b>					
Expressive Suppression	.711	0.268	2.66	.1805	1.2422
Major Experiences of Discrimination	-.456	0.215	-2.12	-.8833	-.0291
College Stress	.459**	0.157	2.92	.1471	.7706
Overall Health	-.707***	0.095	-7.42	-.8965	-.5183
General Trauma	.786	0.359	2.18	.0720	1.5007
Financial Burden	-5.19	3.30	-1.57	-11.747	1.3590
High School Experience	.551	1.95	.28	-3.3272	4.4285
Sexual Orientation	.746	2.45	.30	-4.108	5.6010
<b>Constant</b>	3.27	4.00	.82	-4.6738	1.2064

Note. \* indicates  $p < .05$ , \*\* indicates  $p < .01$ , and \*\*\* indicates  $p < .001$ .



Finally, the overall model predicting posttraumatic stress symptomology with academic trauma as a predictor and *perceived equity as a moderator* was significant,  $F(11, 97) = 20.78$ ,  $MSE = 85.18$ ,  $p < .001$ ,  $R^2 = .7021$ . Again, the main effect of academic trauma was significant ( $B = .328$ ,  $SE = .118$ ,  $p = .006$ ,  $CI [.0945, .5620]$ ). Consistent with the previous two analyses, these results suggest that greater academic trauma predicts posttraumatic stress symptomology in Black college students. In contrast, the main effect of perceived equity was not significant ( $B = .260$ ,  $SE = .289$ ,  $p = .37$ ,  $CI [-.3142, .8344]$ ), suggesting a lack of evidence supporting the association between perceived equity and posttraumatic stress symptomology in Black college students. The two-way interaction (Academic Trauma X Perceived Equity) was also not significant,  $F(1, 97) = 3.69$ ,  $p = .057$ ,  $R^2 = .0114$ . Taken together, this overall pattern of results provides evidence that academic trauma is a significant predictor of posttraumatic stress symptomology in this sample (Table 8).

Table 8

*Perceived equity as a moderator predicting posttraumatic stress symptomology*

	<i>B</i>	<i>SE</i>	<i>T</i>	95% <i>CI</i>	
				Lower	Upper
Academic Trauma	.328**	.118	2.79	.0945	.5620
Perceived Equity (PE)	.260	.289	.90	-.3142	.8344
Academic Trauma X PE	-.039	.021	-1.92	-.0808	.0013
<b>Covariates</b>					
Expressive Suppression	.752**	.266	2.82	.2235	1.2810
Major Experiences of Discrimination	-.352	.222	-1.58	-.7932	.0894
College Stress	.406	.163	2.50	.0830	.7292
Overall Health	-.766***	.099	-7.69	-.9634	-.568
General Trauma	.709	.369	1.92	-.0234	1.44
Financial Burden	-4.42	3.41	-1.29	-11.181	2.35
High School Experience	.715	2.03	.35	-3.3201	4.7503
Sexual Orientation	.196	2.52	.08	-4.8090	5.2013
<b>Constant</b>	3.27	4.14	.79	-4.9482	11.4884

*Note.* \* indicates  $p < .05$ , \*\* indicates  $p < .01$ , and \*\*\* indicates  $p < .001$ .

To probe the nature of the hypothesized relationships between academic trauma, health outcomes (i.e., somatic complaints and posttraumatic stress symptomology) and the three moderators, I conducted several ancillary analyses. First, I conducted the moderation analyses without any of the eight covariates or the eleven graduate student cases ( $N = 119$ ). Results revealed a significant main effect of academic trauma when predicting both somatic complaints and posttraumatic stress symptomology. To determine what was driving this pattern of significance (i.e., the removal of the covariates or the removal of the graduate student cases), I ran two additional analyses: one with the graduate student cases included and the covariates removed ( $N = 130$ ), and another with the covariates included and the graduate student cases removed ( $N = 99$ ). I found that academic trauma significantly predicted both somatic complaints and posttraumatic stress symptomology when all eight covariates were removed from the model while keeping graduate students in the sample. However, when the covariates were left in the

model and the graduate student cases were removed; academic trauma only significantly predicted posttraumatic stress symptomology. These findings suggest that the covariates were dampening the effects of academic trauma when predicting somatic complaints.

### **Discussion**

The present study sought to expand previous conceptual models of trauma in education by examining specific experiences that may contribute to patterns of traumatization for Black students using the newly developed Academic Trauma Scale (ATS). The ATS is unique as it attempts to capture the cumulative toll of disturbingly negative experiences at the intersection of race and social power to which Black students are subjected at higher education institutions within a trauma framework. In developing this measure, this research also sought to extend previous literature assessing racism in schools by capturing race-based bias not as a manifestation of a generalized racism that happens to occur in school settings, but rather as a manifestation of a particular brand of anti-Blackness that is and has historically been specific to the American education system.

In particular, this research examined, in a sample of Black college students, whether:

- (1) academic trauma predicted health outcomes (i.e., somatic complaints and posttraumatic stress symptomology);
- (2) the relationship between academic trauma and health outcomes was moderated by three culturally-relevant factors (i.e., ethnic-racial identity centrality, racialized emotion management, and perceptions of school equity); and
- (3) racialized emotion management predicted somatic complaints.

Findings from the present study provided partial support for the first hypothesis.

Specifically, greater reports of academic trauma were associated with greater reports of

posttraumatic stress symptomology, but not somatic complaints, in this sample. The significant association between academic trauma and posttraumatic stress symptomology emerged even after controlling for eight potentially confounding factors (i.e., expressive suppression, major experiences of discrimination, college stress, overall health, general trauma, financial burden, high school experience, and sexual orientation). These results provide evidence that adverse and oppressive school experiences can be traumatizing for Black students, contributing to negative psychological outcomes in this population. Importantly, these models explained a vast majority of the variance (between 70-72%) in posttraumatic stress symptomology in Black college students.

Additionally, the present study provides evidence that racialized emotion management was a significant moderator of the relationship between academic trauma and posttraumatic stress symptomology. Specifically, greater academic trauma predicted more posttraumatic stress symptomology only at the group-mean average and high levels of racialized emotion management. This suggests that, as academic trauma increases, the toll of racialized emotion management may exacerbate the effects of academic trauma on posttraumatic stress symptomology. This is also supported by the presence of a significant and positive bivariate correlation between racialized emotion management and both academic trauma and posttraumatic stress symptomology in this study.

These results provide some evidence that future research examining the school experiences and corresponding emotion work of Black students have to account for the racialized context of academia. As discussed in the introduction, individuals perceive and interpret the emotional expression of outgroup members with less accuracy than they do ingroup members (Elfenbein & Ambady, 2000; Elfenbein & Ambady, 2002a). This is particularly the case in

studies examining White American perceptions of Black individuals' emotions (Chiao et al., 2004; Nowicki et al., 1998) and subsequent evaluations of threat perception and hostility (Halberstadt et al., 2018; Willis et al., 2015). Given that the overwhelming majority of educators are White (Taie & Goldring, 2017), Black students may engage in racialized emotion management in order to avoid being perceived in a negative or stereotypical way.

This idea is consistent with Stevenson's (2014) Racial Encounter Coping Appraisal and Socialization Theory (RECAST), which functions as a racialized extension of the transactional model of stress and coping (Anderson & Stevenson, 2019; Lazarus and Folkman, 1984). Specifically, the RECAST asserts that racial encounters can activate racial stress appraisal in youth. Through this process, individuals come to understand that an encounter is racialized and therefore may be associated with a number of physiological, psychological, or behavioral responses within themselves in others. Moreover, the RECAST posits that youth may navigate a racial coping reappraisal process after perceiving a discriminatory racial encounter, in which they evaluate the intensity and manageability of a stressor. The RECAST further suggests that youth then navigate the process of racial coping decision-making in order to outline resolutions to discriminatory racial encounters (Anderson & Stevenson, 2019). Within this theoretical framework, it is plausible that racialized emotion management or suppression emerges as a coping strategy used by Black students to navigate towards resolution of discriminatory racial events.

Findings from the current study complement previous research findings that emotion suppression strategies may exacerbate the detrimental effects of racially oppressive school experiences on the mental health of Black students. These findings suggest that individuals who reported low levels of racialized emotion management may not have the added toll of altering

their emotional response or expression to traumatic academic experiences. The lack of such taxing emotion regulation may explain why the association between academic trauma and posttraumatic stress symptomology was not significant among those who reported low levels of racialized emotion management.

Though expressive suppression itself has been linked with negative mental health outcomes, it is important to note that the ability to aptly enhance or suppress emotions is an important life skill (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004; Westphal, Seivert, & Bonanno, 2010). Termed expressive or emotion regulation flexibility, the capability to alter one's emotional expression based on situational demands has been found to be associated with better psychological adjustment and greater life satisfaction (Bonanno et al., 2004; Chen, Chen, & Bonanno, 2018; Westphal, Seivert, & Bonanno, 2010). Thus, more research is needed to fully understand the role and impact of racialized emotion management on the health outcomes of Black students.

It should be noted, however, that findings from the present study need to be interpreted with caution given the homogenous nature of this sample. Specifically, the current findings may lend primarily to a conceptualization of academic trauma that is specific to the experiences of Black cisgender women. Said differently, though this research study was only intended to investigate the intersection of race and social power in schools, the fact that the majority of the sample were cisgender Black women allows for the inclusion of a third intersection in the model: gender identity. Importantly, intersectionality theory as a tool for multidimensional analysis of human experiences and power dynamics was first conceptualized to specifically examine the role of race and gender in shaping the experiences of Black cisgender women within a historically racist and sexist legal system (Crenshaw, 1989, 1991). While the theory has since been expanded

to examine a number of intersections between identities and systems (Tefera, Powers, and Fischman, 2018), disparities research in health and education reveals a continued need for an intersectional approach to understand the experiences and outcomes of Black women in particular (Alim et al., 2006; Baker, 2017; Martin & Smith, 2017; Shoge, 2019).

For instance, research demonstrates that Black cisgender women are at high risk of exposure to traumatic stressors and also tend to report higher prevalence of trauma sequelae (i.e., PTSD and depression) across the lifespan than men of all races (Alim et al., 2006; Baker, 2017; Kessler et al., 2005). Most relevant to this review, however, are findings demonstrating that Black cisgender women are subjected to a number of adverse and oppressive experiences in academe across all educational levels. For example, recent research demonstrates that Black girls are approximately 5.5 times more likely to be suspended than White girls, and are more likely to be suspended multiple times than students of any other gender or race (Onyeka-Crawford, Patrick, & Chaudhry, 2017). Moreover, findings from research examining issues of subjective discipline demonstrate that Black girls are at much greater risk of being disciplined based on informal teacher reports of misbehavior, as well as grade retention, than their White counterparts (Martin & Smith, 2017). Finally, research on Black women in higher education (i.e., undergraduate and graduate students) indicates that they report frequent experiences of gendered racial microaggressions, which can have detrimental effects on their mental and physical health (Lee & Williams, 2012; Shoge, 2019). The findings from this dissertation study corroborate this body of research, providing further evidence of educational harm against Black cisgender women within a trauma framework. Taken together, results from the present study and previous investigations demonstrate the importance and necessity of an intersectional approach to examine the school experiences of Black students who identify as women. However, the

generalizability of the current findings to Black cisgender men and Black folx with diverse gender identities is yet to be tested empirically.

Moreover, in accordance with an intersectional approach, it is also important to further unpack the nuanced findings regarding racialized emotion management. More specifically, given that the sample was predominantly Black cisgender women, the results regarding the interaction effect between academic trauma and racialized emotion management may indicate a pattern of emotion regulation that is specific to Black students that identify as women. As previous research indicates, emotion regulation strategies can be influenced by one's gender identity, such that women use of a broader range of emotion regulation strategies and report greater use of emotion suppression with age than those who identify as men (Nolen-Hoeksema & Aldao, 2011). Consequently, the pattern of results in this study could provide evidence of a relationship between school experiences and emotion suppression that is specific to Black cisgender women. In particular, these findings may suggest that Black women-identifying students tend to report, on average, moderate to high levels of racialized emotion management at their institutions as a protective measure against oppressive forces, and that such emotion suppression practices then exacerbate the psychological toll of academic trauma.

There are several null results that must be noted. First, the null findings may be due to the small sample size and subsequent lack of power, as a post hoc power analysis conducted with G\*Power indicated that the study was under .50 power. However, there might be other potential explanations for them, which are detailed below.

Unlike the findings with posttraumatic stress symptomology, the current study failed to provide evidence that academic trauma predicts somatic complaints in a sample of Black college students. One potential explanation for the null result could lie with the distribution of reports of



academic trauma in the present study. More specifically, academic trauma was positively skewed in this sample, indicating that most participants in the sample reported low or mild to moderate levels of academic trauma ( $M = 31.00$  on a scale from 17-85). It is possible that lower levels of academic trauma are not strong enough to elicit somatization in students. This explanation is consistent with previous research suggesting that higher levels of trauma exposure are associated with more and greater severity of somatic complaints (Loeb et al., 2018; Nicolaidis et al., 2004).

Another potential reason for the null result may be related to the age of the participants in the current study. Specifically, this study assessed the relationship between academic trauma and somatic complaints in a sample of emerging adults, over 90% of which were between the ages of 18-24. Research demonstrates that emerging adults often report fewer somatic or medically unexplained symptoms (approximately 25%; Janssens et al., 2014) than their older counterparts (approximately 20-50%; de Waal et al., 2004; Maiden et al., 2003; Nimnuan et al., 2001; Snijers et al., 2004). Though 85.4% of participants in this study reported at least one somatic complaint throughout their time at their current university/college, only 27.4% of participants reported experiencing more than two somatic complaints throughout their time in college. Thus, it may be the case that emerging adults are less likely to experience somatic complaints or other physiological health concerns, as opposed to psychological health concerns, in response to academic trauma. This would also explain the positively skewed reports of somatic complaints in the current sample. Taken together, a lack of variability in both academic trauma and somatic complaints may have inhibited our ability to adequately probe the relationship between academic trauma and somatization in Black postsecondary students.

The current study also failed to provide evidence that either ethnic-racial identity centrality or perceived equity moderates the relationship between academic trauma and

posttraumatic stress symptomology or somatic complaints. One potential explanation for the lack of evidence of ethnic-racial identity centrality as a moderator could lie with the wording of the academic trauma measure. Specifically, each item in the measure began with the phrase “Because I am a student of color,” and thus could have been tapping into ethnic-racial identity centrality. Consequently, this wording could have dampened our ability to parse out any moderating effects of ethnic-racial identity centrality.

It is also possible that ethnic-racial identity centrality may not exacerbate the relationship between academic trauma and Black student health outcomes, while other aspects of ethnic-racial identity (i.e., the degree to which Black Americans feel positively or negatively about their ethnic-racial identity, or how favorably they believe Black identity is viewed in society) may be influential (Rivas-Drake et al., 2014). Additional research on this topic should assess other aspects of ethnic-racial identity (e.g., public and private regard) to better understand how the construct as a whole is related to the racialized academic experiences of Black students.

Additionally, the lack of evidence of perceived equity as a moderator of the relationship between academic trauma and posttraumatic stress symptomology may be related to the small sample size. As mentioned above, the current study was underpowered and thus could not fully unpack the effects of perceived equity as a moderator of the relationship between academic trauma and Black students’ health outcomes. While the small sample size could be driving this null result, it may also be the case that campus climate played a large role in influencing student perceptions of school equity. More specifically, the majority of the sample ( $n = 94$ ) attended Virginia Commonwealth University, a predominantly White institution (PWI) with approximately 30,000 undergraduate students in the Southeast region of the country. Though predominantly White (~55%), Virginia Commonwealth University still boasts a large population

of students from minoritized backgrounds (~9,000; VCU, 2020). Consequently, participants from this institution may perceive the campus to be more inclusive given the high number of other students who look like them. Such considerations are important for interpretation of findings from the present study regarding the marginally significant interaction between academic trauma and perceived school equity when predicting posttraumatic stress symptomology, as it is possible that students at schools with less diversity may perceive the university climate to be less equitable.

Despite this, results from this study demonstrated a trend toward significance for the two-way interaction between academic trauma and perceived equity when predicting posttraumatic stress symptomology. When considered with the presence of a significant and negative relationship between perceived equity and both academic trauma and posttraumatic stress symptomology, these findings suggest that perceived equity may emerge as a significant moderator with a larger sample size. Indeed, results from this study suggest that student perceptions of university climate may contribute to their experiences of academic trauma, and that university climates that result in reduced perceptions of student power and belongingness within an institution may contribute to patterns of traumatization. Future research with larger sample sizes should continue to investigate the role of perceived equity and institutional climate in Black postsecondary students' school experiences.

### **Implications for Higher Education Institutions**

Importantly, the pattern of results in this study has critical implications for education research and interventions. Specifically, the finding that academic trauma does not predict somatic complaints in this sample suggests that research on and interventions for academic trauma should begin with a focus on the psychological consequences of academic trauma. In

particular, higher education institutions should examine and address the racist and hierarchical power structures that exist on their campuses, and the specific ways that they disenfranchise and contribute to the psychological outcomes of Black students.

Additionally, the finding that academic trauma predicted posttraumatic stress symptomology at average and high levels of racialized emotion management suggests a need for further research on the racialized feeling norms and expectations for Black Americans at higher education institutions. Such a focus would provide insight for researchers and educators regarding the circumstances and contexts under which Black students engage in racialized emotion work. Future research and interventions on this topic should also further examine the relationship between Black students' school experiences and their racialized beliefs about emotion regulation and management.

Finally, the finding that academic trauma predicts posttraumatic stress symptomology in Black students provides evidence that academic institutions and the actors they imbue with power can traumatize Black students. Indeed, as conceptualized here, academic trauma captures oppressive experiences such as challenging institutional climate, experiences of bias, and misuses of power by faculty, staff, and campus police. These experiences stem from the racist and hierarchical structure of academia, and depict the ways in which Black students feel multiply marginalized and stripped of agency as both Black Americans and students within an education context. Inasmuch as they contribute to the posttraumatic stress symptomology of Black students, educational institutions and the actors they imbue with power may maintain and replicate existing racial disparities in mental health through academic trauma.

It is important to note, however, that I am not purporting that all actors in the education system have malicious intent towards Black students. Rather, I am asserting that, because the

education system has excluded and disenfranchised Black Americans on the basis of race since its inception (Battiste, 2013; Branch and Jackson, 2020; Leonardo & Singh, 2017; Love, 2019), it functions as a racialized social system. Branch and Jackson (2020) conceptualize racialized social systems as systems “in which economic, political, social, and ideological levels are partially structured along racial lines, where races are socially constructed and typically determined by phenotypic characteristics” (p. 176). Importantly, a critical race approach holds that the prejudiced beliefs and attitudes of individual actors are not necessary to maintain and replicate such a structure because racism is built into its foundation (Blauner, 2001). Consequently, changes must be made to the structure of the education system to ensure that it does not continue to maintain racial inequality. Below are some recommendations for structural change based on the findings from this research.

### ***Broaden Awareness of Academic Trauma***

Though there has been increasing discourse around trauma in education in the public domain (Gray, 2015; Grollman, 2015; Milan, 2017), little research to date has examined or considered academic trauma with respect to student health. For educational institutions and actors to address academic trauma, they must first know that it exists and understand its effects on Black students' health. Findings from this research demonstrate that academic trauma is a significant predictor of posttraumatic stress symptomology, despite the study being underpowered. Additionally, this study demonstrated that the bulk of participants reported at least a few traumatic academic experiences, as only 8.5% of participants in this study reported never experiencing academic trauma at all. Moreover, 1 in 6 participants (15.4%) reported at least mild to moderate academic trauma as indicated by a score of 43 or above (range 17-85).

Thus, these findings suggest a need for education researchers, professionals, and institutions to more closely investigate the relationship between students' school experiences and health within a trauma framework, particularly in the case of multiply marginalized students such as Black students. Given that academic trauma is conceptualized here as a challenging institutional climate, experiences of bias, and/or misuses of power at the intersection of racial and social power in schools, a critical race approach demands that educational institutions reflexively examine and dismantle the hierarchical power structures that maintain oppressive environments for Black students (Branch and Jackson, 2020; Love, 2019). Examples of such work can be found in the growing movement of educational institutions exploring and dismantling their legacies of oppression, violence, and degradation of people from minoritized backgrounds (Doerer, 2018; Wilder, 2013). An example of this can be found in The Lemon Project at the College of William and Mary, which is a “multifaceted and dynamic attempt to rectify wrongs perpetrated against African Americans by William & Mary through action or inaction” (The Lemon Project, 2020). Moreover, given the findings that student demographic characteristics (i.e., financial means, high school experiences, and sexual orientation) were associated with their reports of academic trauma, educational institutions and scholars must consider how their histories, policies, and practices may interact with students' identities to trigger or re-traumatize Black students (Shaia & Crowder, 2017).

### ***Provide Supports and Resources for Students and Families***

**Tailor Counseling Center Supports for Black Students.** Many college counseling centers provide supports and resources to help students navigate a myriad of adverse experiences faced by college students, including trauma, PTSD, and discrimination (Pina, 2017; Purves & Erwin, 2002; Stone & Archer, 1990). However, this study provides empirical evidence that

academic trauma contributes to the mental health outcomes of Black students above and beyond the effects of general trauma and racial discrimination. Consequently, counseling centers at higher education institutions should tailor academic trauma interventions to the specific needs and experiences of Black students. These interventions should pay specific attention to both race and school identities, and the ways in which they shape Black students' school experiences.

Moreover, data from this study suggest that academic trauma interventions should be intersectional in nature. Specifically, these interventions should take into account financial status/burden, high school experience, and sexual orientation, as these three demographic characteristics were associated with mean differences in participant reports of academic trauma. For example, intersectional interventions could encourage university counseling centers, faculty, staff, and campus police to consider whether and how differences within Black student identities have shaped their interactions with students. More specifically, these constituents could be required to recall and examine manifestations of bias and misuses of power in situations in which they've engaged with Black students with varying social identities (e.g., Black students from low-income backgrounds, Black students from college prep high schools vs. under-resourced high schools, and/or Black students with minoritized sexual identities). In addition, academic trauma interventions should develop tailored resources and safe spaces to support and validate the experiences of Black students with varying social identities, such as support groups specific to students from low-income backgrounds or sexual minority students led by counseling center staff with shared backgrounds. Finally, the significant two-way interaction between academic trauma and racialized emotion management suggests that academic trauma interventions may need to address the liminal space Black students have to process and manage their emotions on college campuses. As an example, university counseling centers and schools can include

questions about racialized feelings norms and expectations in campus climate surveys to better understand whether and how students from different racial backgrounds regulate and express their emotions based on the campus composition and climate. Interventions and trainings on academic trauma can use this data in annual faculty and new student trainings, as well as student theater dramatizations (Hoch et al., 2015) to provide counselors and faculty with real life data and scenarios regarding Black student concerns about racialized emotional regulation and expression.

**Family Outreach.** Though students often matriculate to study and live at higher education institutions by themselves, they do not navigate these school campuses alone. Family serves as a largely important source of social support for Black postsecondary students (Herndon & Hirt, 2004), and can play a crucial role in delivery of services and supports to students in schools in general (Santiago, Raviv, & Jaycox, 2018). Indeed, partnering with families can help to raise awareness of various school services, resources, and interventions, and support positive student outcomes (Santiago, Raviv, & Jaycox, 2018). Engaging families with ways to support their students may be particularly important for supporting the mental health of Black students, given that social stigma has been found to be a barrier to help-seeking behaviors among Black Americans (Alvidrez, Snowden, & Kaiser, 2008; Nadeem et al., 2007). Additionally, research demonstrates that Black emerging adults may also prefer to seek help from their families rather than mental health professionals (Avent & Cashwell, 2015; Ayalon & Young, 2005; Briggs et al., 2011; McMiller & Weisz, 1996), so providing resources and support for families may also help parents and caregivers better support their students overall.

***Develop Trauma-Informed, Antiracist Policies and Interventions***



In order to address and eliminate the negative psychological effects of traumatic experiences at the intersection of racism and social power in academic settings, higher education institutions must also address the social structures of their organizations. First, these institutions must proactively examine and dismantle their existing racist policies and practices, prior to being prompted by racial incidents, in order to build capacity to better navigate and support community members both in general and before, during, and after racial crises (American Council on Education, 2018). For example, student sanctioning and major application policies that leave the fate of students of color to individual actors or predominantly White panels may combine with biased interpersonal experiences to traumatize Black students. Education institutions may benefit from abandoning these policies and practices in service of more intentionally equitable and trauma-informed policies.

Second, higher education institutions must develop and implement ongoing trauma-informed, antiracist, and equity-based interventions at the institution-level in order to maintain an organizational structure that avoids further marginalization of Black students (Shai & Crowder, 2017). Additionally, the provision of safe and anonymous resources for students to report bias and traumatizing experiences, as well as bias response teams that seek to move beyond the individual level to enact structural change, may further institutional efforts to understand academic trauma and its consequences (LePeau, Snipes, Morgan, & Zimmerman, 2018).

For these trauma-informed strategies to be successful, however, educational institutions must ensure support for these measures and for the wellbeing of Black students at all levels (i.e., from the top-down). Indeed, previous research demonstrates that institutions' lack of commitment to these trauma-informed strategies on behalf of school administrators can seriously hinder school-level interventions to transform both the culture and students experiences

(Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). Universities should also avoid one-size fits all responses such as task forces and racial climate research as the primary methods of addressing racial crises. Research on collegiate responses to racial incidents and crises indicate that the collection of data and development of task forces in the midst of collective traumas limit the institutions' ability to engage in deep and meaningful climate change and community relationship building (American Council of Education, 2018).

Finally, university support of student demands and resistance to racism and social power on college campuses may provide a strong starting place for educational institutions to begin their work of both understanding and improving student experiences. Indeed, research indicates that the development of activism and advocacy partnerships between students, faculty, and staff helps to foster inclusivity and long-term change on college campuses (Kezar, 2010). Further support for this recommendation can be found in the American Council on Education's (2018) report on confronting racial challenges on college campuses. The report frames campus racial crises and poor institutional management of such events as collective traumas that have serious implications for the social and emotional wellbeing of members of the campus community. In particular, the report recommends that university leadership first engage in an active listening process in order to fully understand the challenges facing the campus community and foster a sense of self-efficacy and relationship building. Next, the report recommends that university leaders speak from the heart, and engage in critical, honest discussion with the campus community that is free of political agendas. Research evaluating the statements of college presidents in response to racial incidents on college campuses suggests that when speaking from the heart, university leaders should specifically address the oppressive forces (i.e., racism) underlying the racial crisis, as well as the racial incidents that sparked it (Cole & Harper, 2017).

Finally, the American Council on Education (2018) recommends that university leaders adopt a strategy of “acting with” the members of the campus community most affected by the racial crisis. Such intentional focus can help to foster campus relationships, and aid in the healing process as the campus navigates a collective trauma. Taken together, these measures may go a long way in helping academic institutions understand and mitigate Black students experiences of academic trauma and the negative health outcomes with which it is associated.

### **Limitations and Future Directions**

First, the present study was underpowered and the data collected largely represents a homogenous sample: Black cisgender women (77.5%) attending Virginia Commonwealth University (72%). The lack of cisgender men, transwomen and men, and non-binary participants limited our ability to understand whether and how gender is associated with Black student experiences of academic trauma. Moreover, this study did not examine Black student experiences at schools with different racial compositions (e.g., predominantly White institutions, vs. mixed institutions, historically Black colleges and universities [HBCUs], and other minority-serving institutions). Based on the pattern of results in the current study and previous research on heterosexism in education (Becker et al., 2017), I would expect that students with minoritized gender identities would report more experiences of academic trauma. Moreover, I would expect that students at HBCUs and other minority-serving institutions would report fewer experiences of academic trauma as I have conceptualized it, given that they are less likely to experience anti-Black bias. Additional studies on academic trauma should recruit larger, more diverse samples from a wider range of schools, using tailored social media recruitment methods (e.g., study hashtags specific to each school, targeted recruitment from campus organizations).

Additionally, this examination of academic trauma focused primarily on Black undergraduate students. As this program of research expands, future research should examine academic trauma in graduate student samples, particularly given that several of the op-eds reporting traumatic academic experiences that have been circulating in public discourse were written by graduate students (Grollman, 2015; Milan, 2017). Indeed, Grollman (2015) outlined four specific aspects of their graduate training that were traumatic (i.e., intensely and disturbingly negative and uncontrollable). Here the scholar referred specifically to the “structure and culture of graduate school” as a factor underlying their experience of trauma, citing repeated microaggressions based on their race and gender identities and sexual orientation, as well as disregard for their research on minoritized communities as examples of their own traumatic academic experiences. They also cited efforts to destroy their commitment to activism and steer them to ill-fitting careers as examples of abuses of social power and influence whereby educators and academia more generally sought to impose their beliefs and will on a student.

Furthermore, Milan (2017) outlines the academic culture of gratitude, which encourages students to inhabit a constant sense of gratitude toward being accepted into academia without acknowledging the sacrifices and costs students, and particularly students of color, incur to be there. Moreover, and perhaps most saliently, the scholar outlines the traumatic nature of the identity confusion students of color may experience when navigating hostile academic settings:

*“Because if the academy is not enough, and we have made the academy our identity, our source of self, and our well of worthiness, then who are we when these institutions fall short of loving us? If my degree is meant to be a sign of my self-worth and exceptionalism, but I must dim the parts of me that make me exceptional in order to receive it, does it have meaning?”* (Milan, 2017).

These narratives exemplify specific educational experiences that may be traumatic for graduate students who may be multiply marginalized as a result of racial and educational power structures. Taken together with previous research (Truong & Museus, 2012), such narratives suggest that graduate students may be at particular risk of academic harm given imbalanced power dynamics in the interpersonal relationships between students and their faculty mentors.

Future studies should also investigate academic trauma in K-12 students, paying special attention to the unique challenges students face in this context. Unlike undergraduate and graduate students, K-12 students often have limited ability to choose their academic institutions, courses, and educators. Additionally, because they are younger, K-12 students may be subjected to harsher power usage from their educators (Jamieson & Thomas, 1974; Shwarzwald, Koslowsky, & Brody-Shamir, 2010). Consequently, research should examine the intersecting effects of racism and educational power dynamics within this student population.

Furthermore, I intentionally conceptualized and examined academic trauma based on only two social identities (i.e., race and school position) to better understand how racism and social power shape Black student experiences. However, an intersectional approach demands examination of how various social structures interact with multiple aspects of an individual's identity (e.g., race, sexual orientation, level of ability; Tefera, Powers, & Fischman, 2018). Importantly, the present study found three participant characteristics that were associated with academic trauma in the current sample (i.e., financial status, high school experience, and sexual orientation). Thus, future research should build out the model to examine how other institutionalized social structures (e.g., heterosexism, classism, and ableism) intersect with racism and educational power dynamics to traumatize Black students with a number of different social identities and positions.

Finally, though this study demonstrates the negative contribution of academic trauma to the mental health outcomes of Black postsecondary students, relatively few reports of academic trauma in the sample may suggest the presence of factors that are protective against academic trauma for Black students. Thus, future research should investigate those protective factors in order to better support Black students. For example, factors such as faculty and staff support (Dickter, Charity Hudley, Franz, & Lambert, 2018; Kezar, 2010) and family support (Barnette, 2004) may be important factors to examine, as previous research has demonstrated their importance in improving the school experiences and outcomes of students from underrepresented backgrounds. Investigation of academic trauma and factors that protect against it concurrently may provide useful information for education institutions and clinicians seeking to improve the experiences and health outcomes of Black students. Such an integrity-based approach (i.e., one that seeks to fully explicate the “complexity, coherence, and meaning contained with the life experiences” of Black students) will help to demonstrate that Black students “do not simply succumb to oppression. Rather, they have developed a multitude of styles, approaches, impressions, reactions, and general ways of responding to circumstances created by a racist society” (Boykin & Allen, 2000, p. 29).

### **Conclusion**

The present study sought to test a novel conceptual model of academic trauma using self-report measures among a sample of Black postsecondary students. Results provide evidence that academic trauma predicts posttraumatic stress symptomology in this sample, and that high levels of racialized emotion management exacerbate the contribution of academic trauma to negative mental health outcomes among Black postsecondary students. Moreover, this study provides evidence that certain Black students (i.e., students experiencing financial burden, students who

feel that their high school experiences did not prepare them their university/college, and students with minoritized sexual identities [i.e., gay, lesbian, bisexual, asexual, or questioning]) report higher levels of academic trauma. This pattern of results suggests that academic trauma may be a unique form of systemic trauma contributing to the pervasive racial disparities in health outcomes. Future research should build upon this work by examining the academic trauma–health link at different educational levels (i.e., K-12; graduate education), and developing intervention efforts to improve Black students’ school experiences and mental health outcomes. This interdisciplinary research is a necessary step towards health equity, as it investigates systemic and intersectional factors contributing to the health outcomes of Black students.

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## Appendices

### Appendix A: Academic Trauma

Academic Trauma refers to the cumulative toll of oppressive and discriminatory experiences across multiple indices of identity (i.e., marginalized racial and student identities).

**Participant Instructions:** We are interested in your experiences at the intersection of your race identity and student identity. For the following items, please indicate how frequently you have experienced the following circumstances (experiences/feelings) *because you are a student of color* on a scale from **1 (never) to 5 (almost every day)**.

#### Institutional Climate:

- Because I am a student of color, I feel I have to sell out or give up parts my identity to be successful at my school.
- Because I am a student of color, I feel invisible and unimportant on campus.
- Because I am a student of color, I feel like I am constantly watched/monitored on campus.
- Because I am a student of color, I am made to feel like I should be grateful to be at my school.
- Because I am a student of color, professors and administrators have made me feel unwelcome on campus.
- Because I am a student of color, I feel physically unsafe on campus.

#### Experiences of Bias

- Because I am a student of color, educators consider themselves superior to me
- Because I am a student of color, I have been steered away from science, technology, engineering, and mathematics (STEM) majors.
- Because I am a student of color, I have been treated as less capable or smart than other students
- Because I am a student of color, I have been called names or heard/saw my identity used as an insult.

#### Misuse of Power:

- Because I am a student of color, educators try to embarrass me or yell at me in front of the class when I make a mistake.
- Because I am a student of color, educators do not acknowledge my contributions to class discussions.
- Because I am a student of color, educators fact check my contributions to class discussions.
- Because I am a student of color, I have little power at my institution.
- Because I am a student of color, faculty and staff can make decisions on my behalf, regardless of what I want.
- Because I am a student of color, I have been physically or verbally harassed by campus police.
- Because I am a student of color, campus police assume I am doing something suspicious (e.g., preparing to steal something, etc.)



**Appendix B: Somatic Complaints**  
Brief Symptom Inventory Somatic Symptoms Subscale

**Instructions:** While at your current university/college, how much were you distressed by the following symptoms:

<b>Item</b>	<b>Scale</b>				
1. Faintness or dizziness	(1) Not at all	2	3	4	(5) Extremely
2. Pains in the heart or chest	1	2	3	4	5
3. Nausea or upset stomach	1	2	3	4	5
4. Trouble getting your breath	1	2	3	4	5
5. Hot or cold spells	1	2	3	4	5
6. Numbness or tingling in parts of your body	1	2	3	4	5
7. Feeling weak in parts of your body	1	2	3	4	5

## Appendix C: Posttraumatic Stress Symptomology

**Instructions:** Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then indicate how much you have been bothered by that problem *while at your current university/college*.

Item	Scale				
	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing memories, thoughts, or images of a stressful experience from the past	1	2	3	4	5
2. Repeated, disturbing dreams of a stressful experience from the past?	1	2	3	4	5
3. Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?	1	2	3	4	5
4. Feeling very upset when something reminded you of a stressful experience from the past?	1	2	3	4	5
5. Having physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience from the past?	1	2	3	4	5
6. Avoiding thinking about or talking about a stressful experience from the past or avoiding having feelings related to it?	1	2	3	4	5
7. Avoiding activities or situations because they reminded you of a stressful experience from the past?	1	2	3	4	5
8. Trouble remembering important parts of a stressful experience from the past?	1	2	3	4	5
9. Loss of interest in activities that you used to enjoy?	1	2	3	4	5
10. Feeling distant or cut off from other people?	1	2	3	4	5
11. Feeling emotionally numb or being unable to have loving feelings for those close to you?	1	2	3	4	5
12. Feeling as if your future will somehow be cut short?	1	2	3	4	5
13. Trouble falling or staying asleep?	1	2	3	4	5
14. Feeling irritable or having angry outbursts?	1	2	3	4	5
15. Having difficulty concentrating?	1	2	3	4	5
16. Being "super-alert" or watchful or on guard?	1	2	3	4	5
17. Feeling jumpy or easily startled?	1	2	3	4	5

A total symptom severity score can be obtained by summing the scores for each of the 17 items.  
(<https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp#obtain>)

## Appendix D: Ethnic-Racial Identity Centrality

### MIBI: Racial Centrality Subscale

Item	Scale				
	Strongly disagree				Strongly agree
Overall, being Black has very little to do with how I feel about myself. (R)	1	2	3	4	5
In general, being Black is an important part of my self-image	1	2	3	4	5
My destiny is tied to the destiny of other Black people.	1	2	3	4	5
Being Black is unimportant to my sense of what kind of person I am (R)	1	2	3	4	5
I have a strong sense of belonging to Black people.	1	2	3	4	5
I have a strong attachment to other Black people.	1	2	3	4	5
Being Black is an important reflection of who I am.	1	2	3	4	5
Being Black is not a major factor in my social relationships. (R)	1	2	3	4	5

## Appendix E: Emotion Regulation

### Emotion Regulation Questionnaire and Racialized Emotion Management Scales

**Instructions:** The following questions will assess both your emotional experiences and emotional expression at your current university/college. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

(1) Strongly disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly agree
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1. When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.
2. I keep my emotions to myself.
3. When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.
4. When I am feeling positive emotions, I am careful not to express them.
5. When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.
6. I control my emotions by not expressing them.
7. When I want to feel more positive emotion, I change the way I'm thinking about the situation.
8. I control my emotions by changing the way I think about the situation I'm in.
9. When I am feeling negative emotions, I make sure not to express them.
10. When I want to feel less negative emotion, I change the way I'm thinking about the situation.

#### Scoring:

Items 1, 3, 5, 7, 8, 10 make up the Cognitive Reappraisal facet.

Items 2, 4, 6, 9 make up the Expressive Suppression facet.

Scoring is kept continuous.

Each facet's scoring is kept separate.

#### Racialized Emotion Management (Emotion Masking and Emotional Codeswitching)

11. As a Black person, I hide my emotions to protect myself from people of other racial groups.
12. As a Black person, I try to choose the right time and place to express my emotions.
13. As a Black person, I know how to express my emotions in the "White way" and the "Black way."

## Appendix F: Perceived Equity

### The Equity Scale

1. At my current university/college, students of all races are treated the same.

1 Disagree strongly	2 Disagree	3 Agree	4 Agree Strongly
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2. At my current university/college, all students are treated equally regardless of whether their parents are rich or poor.

1 Disagree strongly	2 Disagree	3 Agree	4 Agree Strongly
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3. At my current university/college, students of all genders are treated fairly.

1 Disagree strongly	2 Disagree	3 Agree	4 Agree Strongly
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4. My university/college provides instructional materials that reflect my culture.

1 Disagree strongly	2 Disagree	3 Agree	4 Agree Strongly
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## Appendix G: General Trauma

LIFE EVENTS CHECKLIST (LEC) Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it happened to you personally, (b) you witnessed it happen to someone else, (c) you learned about it happening to someone close to you, (d) you're not sure if it fits, or (e) it doesn't apply to you. Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

Item	Scale				
	Happened to me	Witnessed it	Learned about it	Not sure	Doesn't apply
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)					
2. Fire or explosion					
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)					
4. Serious accident at work, home, or during recreational activity					
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)					
6. Physical assault (for example, being attacked, shot, stabbed, threatened with a weapon, or experiencing unwanted advances)					
7. Combat or exposure to a war-zone (in the military or as a civilian)					
8. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
9. Life-threatening illness or injury					
10. Severe human suffering					
11. Sudden, violent death (for example, homicide, suicide)					
12. Sudden, unexpected death of someone close to you					
13. Serious injury, harm, or death you caused to someone else					
14. Any other very stressful event or experience					

## Appendix H: Major Experiences of Discrimination Scale

In the following questions, we are interested in your perceptions about the way other people have treated you. Can you tell me if any of the following has ever happened to you ***because of your race?***

Item	Scale				
	(1) Never	(2) Past week	(3) Past month	(4) Past year	(5) More than a year ago
1. At any time in your life, have you ever been unfairly fired from a job or been unfairly denied a promotion?	1	2	3	4	5
2. For unfair reasons, have you ever not been hired for a job?	1	2	3	4	5
3. Have you ever been unfairly stopped, searched, questioned, physically threatened or abused by the police?	1	2	3	4	5
4. Have you ever been unfairly prevented from moving into a neighborhood because the landlord or a realtor refused to sell or rent you a house or apartment?	1	2	3	4	5
5. Have you ever been unfairly denied a bank loan?	1	2	3	4	5

**Follow-up Question:** How many times has this happened during your lifetime?



## Appendix I: College Stress

Adapted from The University Stress Scale

Instructions: How often have each of the following caused you stress during your time at the current university/college? If any are not applicable to you, tick Not at all.

Item	Scale				
	1 (Not at all)	2 (Sometimes)	3	4 (Frequently)	5 (Constantly)
1. Academic/coursework demands	1	2	3	4	5
2. Housing/accommodation	1	2	3	4	5
3. Family relationships	1	2	3	4	5
4. Friendships	1	2	3	4	5
5. Romantic relationships	1	2	3	4	5
6. Relationship break-down	1	2	3	4	5
7. Parental expectations	1	2	3	4	5
8. Study/life balance	1	2	3	4	5
9. Uncertainty after graduation	1	2	3	4	5
10. Concerns about choosing a career	1	2	3	4	5
11. Other demands (please specify)	1	2	3	4	5

**Appendix J: Overall Health**  
Short-Form 20 Health Survey

1. In general, would you say your health is:

- 1 - Excellent
- 2 - Very good
- 3 - Good
- 4 - Fair
- 5 - Poor

2. For how long (if at all) has your **health limited you** in **each** of the following activities?

	Limited for more than 3 months	Limited for 3 months or less	Not limited at all
a. The kinds or amounts of <b>vigorous</b> activities you can do, like lifting heavy objects, running or participating in strenuous sports	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
b. The kinds or amounts of <b>moderate</b> activities you can do, like moving a table, carrying groceries, or bowling	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
c. Walking uphill or climbing a few flights of stairs	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
d. Bending, lifting, or stooping	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
e. Walking one block	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
f. Eating, dressing, bathing, or using the toilet	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3

3. How much **bodily pain** have you had **during the past 4 weeks**:

- 1 - None
- 2 - Very mild
- 3 - Mild
- 4 - Moderate
- 5 - Severe
- 6 - Very Severe

4. Does your health **keep** you from working at a job, doing work around the house, or going to school?

- 1 - YES, for more than 3 months
- 2 - YES, for 3 months or less
- 3 - NO

5. Have you been unable to do **certain kinds or amounts** of work, housework, or schoolwork because of your health?

- 1 - YES, for more than 3 months
- 2 - YES, for 3 months or less
- 3 - NO

For **each** of the following questions, please mark the circle for the **one** answer that comes **closest** to the way you have been feeling **during the past month**.

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
6. How much of the time, during the past month, has you <b>health limited your social activities</b> (like visiting with friends or close relatives)?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
7. How much of the time, during the past month, have you been a <b>very nervous person</b> ?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
8. During the past month, how much of the time have you felt <b>calm and peaceful</b> ?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
9. How much of the time, during the past month, have you felt <b>downhearted and blue</b> ?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
10. During the past month, how much of the time have you been a <b>happy person</b> ?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
11. How often, during the past month, have you felt so <b>down in the dumps that nothing could cheer you up</b> ?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6

12. Please mark the circle that **best** describes whether **each** of the following statements is **true** or **false** for you.

	Definitely true	Mostly true	Not sure	Mostly false	Definitely false
a. I am somewhat ill	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
b. I am as healthy as anybody I know	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
c. My health is excellent	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
d. I have been feeling bad lately	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

## Appendix K: Demographics

1. How old are you (in years)?  
\_\_\_ years
2. With which race/ethnicity do you most closely identify?
  - a. White/Caucasian American
  - b. Black/African American
  - c. Asian American
  - d. Latino/a or Hispanic American
  - e. Native American
  - f. Multiracial (Please specify: \_\_\_\_\_)
  - g. International student
3. Which of the following best represents how you identify?
  - a. Cisgender woman
  - b. Cisgender man
  - c. Transwoman
  - d. Transman
  - e. Non-binary
  - f. Not Listed (Please specify: \_\_\_\_\_)
4. About how big was your graduating class in high school?
  - a. Less than 100 students
  - b. 100-300 students
  - c. 300-700 students
  - d. 700-1,000 students
  - e. Over 1,000 students
5. How would you classify your high school?
  - a. Predominantly White
  - b. Evenly mixed
  - c. Predominantly minority (mostly Black and/or Brown students)
6. To what extent do you agree with the following statement: my high school experiences prepared me for life at my current university/college?

1	2	3	4	5
Disagree strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

7. What is your class status?
  - a. Freshman
  - b. Sophomore
  - c. Junior

- d. Senior
  - e. Not listed (please specify:\_\_\_\_\_)
8. Are you a first-generation college student – an individual who neither of their or guardians possesses a college degree?
- a. Yes
  - b. No
  - c. Uncertain
9. What type of financial aid do you receive to pay for school? (Check all that apply)
- a. Grants
  - b. Scholarships
  - c. Loans
  - d. I do not receive financial aid
10. To what extent do you experience financial burden?
- a. Not at all
  - b. Very little
  - c. Somewhat
  - d. To a great extent
11. Do you have a full-time or part-time job to pay for school and make ends meet?
- a. Yes (full-time)
  - b. Yes (part-time)
  - c. No
12. What is your parent’s (mother, father, or both) or guardian’s highest level of education?
- a. Did not finish High School
  - b. High School Diploma or GED
  - c. Associates Degree (2-year degree)
  - d. Vocational Degree
  - e. Some College
  - f. Bachelor’s Degree (4-year degree)
  - g. Graduate Degree (Masters, Ph.D, JD, MD, etc)
13. What is your marital status?
- a. Married (opposite sex)
  - b. Married, civil union, or registered domestic partnership (same-sex)
  - c. Widowed
  - d. Divorce
  - e. Separated
  - f. In a committed relationship
  - g. Single
14. Which of the following best represents how you identify?

- a. Gay or Lesbian
- b. Heterosexual (straight)
- c. Bisexual/Pansexual
- d. Asexual
- e. Questioning
- f. Not Listed (Please specify: \_\_\_\_\_)

## Vita

Ebony Alana Lambert was born on October 27, 1993, in Richmond, Virginia. She graduated from Thomas Jefferson High School in Richmond, Virginia in 2012. Ebony received her Bachelor of Arts in Psychology and Africana Studies from The College of William and Mary in Williamsburg, Virginia in 2016 and her Master of Science in Health Psychology from Virginia Commonwealth University in Richmond, Virginia in 2018. Throughout her academic career, Ebony has conducted research at the intersection of psychology, education, and health.