TRIALS OF TRIUMPH: CAMPUS CLIMATE, ACADEMIC RESILIENCE, AND RACIAL BATTLE FATIGUE AMONG BLACK COLLEGE STUDENTS

By

Kristen J. Mills

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ABSTRACT

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Academic resilience provides a strengths-based framework for examining personal and contextual factors that impact the academic success of Black college students. At the same time, it is imperative to acknowledge negative outcomes that exist in tandem with academic resilience such as racial battle fatigue (i.e., race-related psychological, physiological, and behavioral stress responses). The present study examined campus climate (i.e., general, academic, and racial campus climate), academic resilience, racial battle fatigue, and civic engagement among Black college students attending a historically and predominantly white institution (PWI). An online survey was used to collect data from a simple random sample of approximately 380 Black college students attending a Midwestern university. Hierarchical multiple regression analyses were used to test for (1a) the direct effect of campus climate on academic resilience, (1b) the moderating effect of civic engagement on the relationship between campus climate and academic resilience, (2a) the direct effect of campus climate on racial battle fatigue and (2b) the moderating effect of civic engagement on the relationship between campus climate and racial battle fatigue. This scholarship aimed to advance knowledge about how campus climate impacts Black students holistically, and the significance of civic engagement for guiding how Black students negotiate and navigate the academic milieu to advance their academic goals and support their well-being. Findings revealed differential relationships between general, academic, and racial campus climate and academic resilience such that general and academic campus climate positively predicted academic resilience, but racial campus climate negatively predicted

academic resilience. The findings also revealed differential moderation of civic engagement such that civic engagement only moderated the relationship between general campus climate and academic resilience. Similarly, findings revealed differential relationships between general, academic, and racial campus climate and racial battle fatigue (physiological, psychological, physio-behavioral, and psycho-behavioral). General campus climate negatively predicted psychological and psycho-behavioral racial battle fatigue. Academic campus climate negatively predicted each type of racial battle fatigue. Racial campus climate negatively predicted physiological and psychological racial battle fatigue. In addition, the findings revealed differential moderation and conditional variation of civic engagement between each form of campus climate and racial battle fatigue. Civic engagement moderated the relationship between general campus climate and physiological racial battle fatigue. Civic engagement moderated the relationship between academic campus climate and psychological racial battle fatigue, but this moderation was opposite of the hypothesized direction. Civic engagement also moderated the relationship between racial campus climate and psychological racial battle fatigue. Implications for future research and practice are discussed.

This dissertation is dedicated to The Culture, my Village, and Detroit, MI. Your protections sustain me. Your reciprocity empowers me. I am forever grateful for all that is You.

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> "She has always been happier for me and everything that's ever happened to me than even I was…She is the sister everybody would want. She is the friend that everybody deserves. I don't know a better person. I don't know a better person….The therapy that I didn't have and the therapy that I don't need is because of my thousands and thousands of hours on the phone… I get to release the day and I just realize that she is the friend that everybody should have"

BP and Katie, you especially have been everything to me – my anchor and the light of my life through high and low places. Few things on this side of heaven can compare to my love for you.

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CHAPTER 1: Introduction and Theoretical Framework

INTRODUCTION

Black[1] college students can experience a multitude of stressors (e.g., unsupportive campus climate), but concurrently demonstrate academic resilience by using personal and environmental assets to facilitate positive academic outcomes such as persistence, academic aspirations, self-esteem, and achievement (Brown & Tylka, 2011; Hartley, 2011; Morales, 2008a, 2008b). Academic resilience refers to success in school in the presence of risk or adversity, where risk (e.g., economic, cultural, and social barriers) increases the likelihood of a negative academic outcome (e.g., limited educational attainment) (Cabrera & Padilla, 2004; O'Connor, 2002). Unlike the deficit-model, which has historically subordinated students of color, academic resilience uses a strengths-based model to attend to factors and processes that aid in facilitating a positive outcome or recovery including protective factors (e.g., supportive mentoring relationships) and positive adaptations (e.g., developing assertiveness). Protective factors and positive adaptations exist in multiple contexts (e.g., school and community). In addition, protective factors and positive adaptations can increase the likelihood of a positive academic outcome (e.g., degree completion), and can inform support strategies or interventions to promote positive outcomes (Bowman, 2013; Kenny et al, 2007; Masten, 2001). Therefore, examining academic resilience among Black college students can provide insight into the factors that aid in facilitating positive academic outcomes, and direction for initiatives, interventions, or strategies for student supportive services.

[1] "Black" is inclusive of those who identify as Black, African American, or of African ancestry in the United States context.

Research has also emphasized that Black and Latino college students can experience racial battle fatigue while in pursuit of post-secondary education (Hotchkins, 2017; Smith et al., 2011; Smith, Mustaffa, Jones, Curry, & Allen, 2016). Racial battle fatigue is defined as "the cumulative psychosocial-physiological impact of racial micro- and macroaggressions on racially marginalized targets" (Smith et al., 2016, p. 1192). The racial battle fatigue framework emphasizes the relationships between racial microaggressions (e.g., low expectations from faculty) and macroaggressions (e.g., policies/practices that communicate purposeful segregation between white and non-white students) experienced by people of color and stress responses. Three stress responses are highlighted in this framework: psychological (e.g., anxiety and frustration), physiological (e.g., headaches and clenched jaws), and behavioral stress responses (e.g., prolonged high-effort coping and poor school or job performance). These three types of stress responses can be interrelated. For Black college students experiencing racial battle fatigue, attention is directed to resisting and coping with racial micro- and macroaggressions and impedes students' focus on academic development and productivity (Smith, 2010). Racial microaggressions can contribute to the broader campus climate for Black college students. That is, racial microaggressions can contribute to facilitating an unsupportive, hostile, and distressing campus climate for students of color (Johnson-Ahorlu, 2012). In this view, a negative campus climate might produce similar psychological, physiological, and behavioral stress responses outlined in the racial battle fatigue framework. Therefore, examining how the campus climate is associated with racial battle fatigue among Black college students can provide insight on how the campus environment contributes to stress, health and academic impediments, and provide direction for health promotion, student supportive services (e.g., advising), and student health services (e.g., counseling or recreational fitness).

Campus climate can impact both academic resilience and racial battle fatigue. Campus climate encompasses the "current attitudes, behaviors, and standards of employees and students that concern the access for, inclusion of, and level of respect for individual and group needs, abilities, and potential" (Rankin & Reason, 2008, p. 264). Relatedly, academic campus climate involves "students' observations about their academic experience such as treatment by instructors, being perceived as serious students by peers, and receiving academic mentoring" (Reid & Radhakrishnan, 2003 p. 265). In the wake of Title IX enforcement, many post-secondary institutions are assessing campus climate, primarily focusing on issues of sexual assault and misconduct, and dating and domestic violence (Department of Justice Office on Violence Against Women, 2016). Perceptions of a negative campus climate, particularly campus racial climate (i.e., the campus racial environment), have been negatively associated with Black college students' academic outcomes (e.g., academic and intellectual development, achievement, persistence, and graduation rates) (Brown, Morning, & Watkins, 2005; Cabrera, Nora, Terenzini, Pascarell, & Hagedorn, 1999; Fischer, 2010; Harper, 2013; Martin, Spenner, & Mustillo, 2017; Solorzano, Ceja, & Yosso, 2000; Strayhorn, 2013). Research has also highlighted the role of campus climate at historically white campuses in facilitating and perpetuating racial battle fatigue among faculty and students of color (Smith, 2004, 2008a, 2008b; Smith, Allen, & Danley, 2007; Smith, Hung, & Franklin, 2011; Smith, Yosso, & Solórzano, 2011).

Civic engagement might serve as a protective mechanism for Black students. Civic engagement is "individual and collective activities intended to identify and address issues of public concern and enhance the well-being of one's community and society" (Chan, Ou, & Reynolds, 2014, p. 1830). These activities can include participating in discussions about sociopolitical issues, volunteering, serving in an organization, or participating in a march or

protest. Civic engagement has been shown to predict better socioemotional (e.g., optimism and life satisfaction) and academic outcomes (e.g., achievement) among African American emerging adults (Chan et al., 2014). Historically, Black college students have actively participated in civic engagement with particular attention paid to civic engagement during the civil rights era (Gasman, Spencer, & Orphan, 2015). Civic engagement has long been promoted by Historically Black Colleges and Universities, and often integrated into the mission of these institutions (HBCUs) (Gasman, et al., 2015). At colleges and universities, civic engagement has been used as an experiential learning tool to engage students in local, state, and national issues, expand their worldviews, and promote civic and social responsibility in a diversifying society (Bowman, 2011). Research has shown that students who view the campus culture as more supportive of civic engagement have more civically minded values, beliefs, and activities (Billings & Terkla, 2014). Logan, Lightfoot, and Contreras (2017) found that, in the 'era of Trump', negative campus climate motivated Black and Latinx college students' civic engagement via campus activism. For both Black men and women, perceptions of a more negative campus racial climate have been related to higher civic engagement at the end of their first year in college (Leath & Chavous, 2017). Civic engagement has also been shown to positively impact resilience among Black college students (Daniels, Billingsley, Billingsley, Long, & Young, 2015). Though research has examined the relationship between civic engagement and stress more broadly among Black youth (Hope, 2015; Richards et al., 2016), there are no studies to date that examine the relationship between civic engagement and racial battle fatigue among Black college students.

Current Study

There is growing literature on campus climate and its impact on college students of color. But there are currently few studies that investigate academic resilience, and racial battle fatigue among Black college students. Additionally, educational literature narrowly represents studies that examine how civic engagement may moderate the relationship between campus climate and academic resilience or racial battle fatigue, particularly with Black college students. The present study seeks to fill these gaps in the literature by examining the following research questions: (1) How is general, academic, and racial campus climate associated with academic resilience among Black college students? (1a) Does civic engagement moderate the relationship between general, academic, and racial campus climate and academic resilience among Black college students? (2) How is general, academic, and racial campus climate associated with racial battle fatigue among Black college students? (2a) Does civic engagement moderate the relationship between general, academic, and racial campus climate and racial battle fatigue among Black college students?

I hypothesized that: (1a) General, academic, and racial campus climate will significantly predict academic resilience, such that more positive perceptions of campus climate will predict higher levels of academic resilience; (1b) civic engagement will moderate the relationship between each type of campus climate and academic resilience such that civic engagement will attenuate the effect of general, academic, and racial campus climate on academic resilience; and (2a) General, academic, and racial campus climate will significantly predict academic resilience, such that more positive perceptions of campus climate will predict lower levels of racial battle fatigue; and (2b) civic engagement will moderate the relationship between each type of campus climate and racial battle fatigue such that civic engagement will attenuate the effect of general, academic, and racial campus climate on racial battle fatigue. Exploring how contextual factors

(i.e., campus climate) and protective factors (i.e., civic engagement) are associated with students' academic resilience and racial battle fatigue is a valuable contribution to education researchers, practitioners, and stakeholders because it will provide direction for: a) assessing campus climate to develop a sustainable infrastructure that promotes healthy academic and socioemotional development among students from traditionally underrepresented groups; and b) utilizing civic engagement as a learning tool to bolster academic development and attainment and to lessen psychological, physiological, and behavioral stress.

THEORETICAL FRAMEWORK

Resilience theory will be used as the guiding framework for this study. Resilience theory includes the three interrelated components discussed in the broader literature (i.e., risk factors, protective factors, and adaptations). First, risk factors (e.g., negative campus climate) are variables that increase the probability of a negative outcome (Bowman, 2013; Cassen, Feinstein, & Graham, 2008). Second, protective factors (e.g., civic engagement) are variables (i.e., individual assets or environmental resources) that increase the likelihood of positive outcomes and decrease the likelihood of negative outcomes by buffering, interrupting, or preventing risk (Bowman, 2013; Greene & Conrad, 2002). Protective factors can have direct or moderating effects (Luthar, Cicchetti, & Becker, 2000; Zimmerman, 2013; Zimmerman et al., 2013). Third, adaptions (e.g., increasing assertiveness), sometimes called compensatory or coping strategies, are strategies and mechanisms that facilitate positive outcomes or recovery in the presence of risk (Bowman, 2013; Morals, 2008a; O'Dougherty Wright, Masten, & Narayan, 2013).

Fergus and Zimmerman (2005), Zimmerman (2013), and Zimmerman and colleagues (2013) synthesized multiple models of resilience theory (e.g., protective factor, compensatory, and challenge or inoculation) to demonstrate the conceptualized relationships between risk factors and protective factors. It is important to note that in these models and in the broader literature, there remains little exploration of adaptations. In the protective factor model, "assets or resources moderate or reduce the effects of a risk on a negative outcome" (Fergus & Zimmerman, 2005, p. 401). The protective factor model subtype protective-reactive (a protective factor reduces the negative effects of risk) will be used for this study. In this study, negative campus climate is conceptualized as a risk factor, whereas civic engagement is conceptualized as a protective factor. Adaptations will not be examined in this study. Protective factor models are

typically analyzed using multiple regression or structural equation models (Fergus & Zimmerman, 2005; Zimmerman, 2013; Zimmerman et al., 2013).

Relevance to Community Research and Action

Resilience has been studied in community psychology (e.g., Brodsky et al., 2011; Brodsky & Bennett Cattaneo, 2013; Fergus & Zimmerman, 2005; Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008; Runswick-Cole & Goodley, 2013; Zimmerman et al., 2013) with some studies focusing on African Americans (e.g., Brodsky, 1999). Resilience as a construct is signified by the interrelationships between its components: risk factors, protective factors, and adaptations. The relevance of resilience research lies in its problem definition. In contrast to the deficit model which subordinated students of color, current academic resilience research uses a strengths-based model which attends to the personal assets and environmental resources at multiple levels (e.g., ethnic identity, supportive parents or teachers), that contribute to academic success in the face of risk or adversity. (Bowman, 2013; Kenny et al, 2007). The strengths-based model embodies inherent values of community psychology (e.g., respect for diversity, identifying and mobilizing resources, and multiple levels of analysis) and examines the interrelationships between individuals and social systems, a key tenet of community psychology research (Kelly, 1971; Trickett, 1996). The findings of the current study could be used to inform social change efforts designed to improve the college experiences of Black college students.

CHAPTER 2: Campus Climate, Civic Engagement, and Academic Resilience

LITERATURE REVIEW

Campus Climate and Academic Resilience among Black Students

Academic resilience refers to success in school in the presence of risk or adversity, where risk (e.g., negative campus climate) increases the likelihood of a negative academic outcome (e.g., low academic performance) (Cabrera & Padilla, 2004; O'Connor, 2002). Several constructs have been used as a proxy for measuring academic resilience. Generally, academic resilience is measured using indicators of academic achievement such as academic performance, grade point averages, or standardized test scores (e.g., Cappella & Weinstein, 2001; Cunningham & Swanson, 2010; and Gayles 2005), but it has also been measured via students' confidence in graduating high school (Catterrall, 1998), academic aspirations (Cunningham & Swanson, 2010; Griffin & Allen, 2006), or a composite of multiple subscales (e.g., academic aspirations, social status, and pro-academic investments) (Braddock, Royster, Winfield, & Hawkins, 1991; Hawkins, & Mulkey, 2005). Recent research has developed academic resilience scales, but these studies have only been validated in undocumented immigrant Latinx student populations in the U.S. (e.g., Suárez-Orozco et al., 2015), or with non-U.S. students (e.g., Cassidy, 2016; Martin & Marsh, 2006). Academic resilience scales have not yet been validated with African American or Black student populations.

Campus climate encompasses the attitudes, behaviors, and standards of the university community (e.g., students, staff, and faculty) regarding the representation and inclusion of diverse groups and perspectives (Rankin & Reason, 2008). Smith (2008a) noted that among students of color, perceptions of the college or university environment are shaped by multiple

factors including: historical exclusion, representation of people of color (POC), and campus-wide racist behaviors. Historical exclusion involves the institutions' historical resistance to integration, and the mission, policies, and traditions that have benefitted white students prior to and since integration. The representation of POC within the institution (e.g., presence and visibility) spans each level to include students, staff, faculty, and administration. Campus climate certainly impacts the experiences of students of color (Harper, 2013). For example, campus climate specifically related to campus commitment to diversity has been found to strongly predict institutional satisfaction among Black undergraduate students (Dade, 2015). Negative campus climate can lower Black college students' general well-being (e.g., health, energy, satisfaction, mood, tension, and control) (D'Augelli & Hershbergerm 1993), limit the diversity of social networks and peer relationships (D'Augelli & Hershbergerm 1993; Kim & Hargrove, 2013), lower academic motivation (Leath & Chavous, 2018), lower academic achievement (Kim & Hargrove, 2013; Watson, 2013), and increase intent to leave college (Strayhorn, 2013).

Few studies have explicitly investigated the relationship between campus climate and academic resilience or resilience among Black college students. However, recent research has examined the relationship between campus climate and academic outcomes (e.g., academic performance, graduation rates, grade point average, and persistence) among Black college students (Brown et al., 2005; Cabrera et al., 1999; Fischer, 2010; Harper, 2013; Martin et al., 2017; Solorzano et al., 2000; Strayhorn, 2013). For instance, Johnson-Ahorlu (2013) investigated the relationship between campus climate, policies, curricular environments, and student outcomes (e.g., graduation and retention) among African American college students attending four-year broad access institutions (i.e., institutions that provide college access to a large student body without rigid admissions requirements). Focus group findings revealed that students viewed

the campus climate as laden with negative racial stereotypes by peers and faculty (e.g., intellectual inferiority of African Americans) and subsequently experienced anxiety and stereotype threat (i.e. anxiety or stress induced by the fear of fulfilling or association with a stereotype). Students described the campus climate and related anxiety and stereotype threat as major barriers to their academic success (e.g., achievement and degree completion). It is important to note that among each institution sampled in this study, African Americans had one of the lowest degree completion rates compared to other racial and ethnic groups.

In a similar study, Brown, Morning, and Watkins (2005) examined the relationship between campus climate, academic performance, and graduation rates in a national cross-sectional sample of African American engineering students. Findings revealed that students with more negative perceptions of campus climate reported weaker academic performance. Students attending Historically Black Colleges and Universities (HBCUs), described as having more welcoming campus climates, were more likely to have higher grades, more favorable perceptions of campus climate, and perceive less racism compared to students at high to very selective, selective, and less selective to nonselective institutions[2]. However, high to very selective, and selective institutions had higher graduation rates for African American students compared to HBCUs and less selective to nonselective institutions. In a study of campus climate, racial stereotypes, faculty relationships, and student retention at a primarily white institution (i.e., PWI), Love (2009) found that campus climate significantly predicted student retention among African American college students. That is, perceptions of a more positive campus climate significantly predicted higher levels of retention.

[2] Selectivity was assigned using the Princeton Review's (2002) Complete Book of Colleges: "1. Highly Selective to Very Selective (scores ranged 83 to 99); 2. Selective Schools (scores ranged from 75 to 82); 3. Less Selective to Nonselective Schools (scores ranged from 60 to 74); 4. HBCUs (regardless of scores)" (p. 265).

While some studies investigated a broad view of campus climate (e.g., general, academic, and racial), some studies specifically examined perceptions of campus racial climate. According to Solorzano, Ceja, and Yosso (2000) a positive campus racial climate includes "(a) the inclusion of students, faculty, and administrators of color; (b) a curriculum that reflects the historical and contemporary experiences of people of color; (c) programs to support the recruitment, retention and graduation of students of color; and (d) a college/university mission that reinforces the institution's commitment to pluralism" while a negative campus racial climate excludes one or more of these components (p. 62). Perceptions of a less favorable campus racial climate have been negatively associated with Black college students' academic outcomes (e.g., academic and intellectual development, achievement, persistence, and graduation rates) (Cabrera et al., & Hagedorn, 1999; Fisher, 2010; Harper, 2013; Solorzano et al., 2000).

Solorzano, Ceja, and Yosso (2000) found that campus racial climate impacted African American college students' academic and social experiences. In detail, the campus racial climate encompassed racial microaggressions (e.g., lowered expectations of African American students) within academic (e.g., classroom) and social spaces (e.g., events). Students reported a very tense campus racial climate in academic spaces and related negative academic impacts such as distrust of academic staff, doubts about academic performance, dropping courses, changing majors, or intending to leave the institution. Cabrera, Nora, Terenzini, Pascarell, and Hagedorn (1999) also found that for African American college students, the campus racial climate (i.e., perceptions of prejudice and discrimination on campus) had a large negative effect on students' academic and social experiences. The authors also noted the campus racial climate had an indirect effect on students' academic and intellectual development, and a large indirect effect on students' persistence. Using the National Longitudinal Survey of Freshmen, Fischer (2010) examined the

relationship between campus racial climate, grade performance, social satisfaction, and graduation rates among college students (Asian, Hispanic, Black and white). Fischer (2010) found that campus racial climate was negatively associated with graduation rates. Among Black students, campus racial climate negatively affected grade performance and graduation rates. Furthermore, in this study Black students reported the highest average perceptions of negative campus racial climate, lowest cumulative GPA, lowest social life satisfaction, and lowest 4-year degree completion rate. These findings suggest that negative campus climate can have adverse implications for Black college students' academic outcomes and may lend support for campus climate as a risk factor that impacts academic resilience among Black college students, particularly at a PWI.

Civic Engagement as a Protective Factor

Research suggests that students of color demonstrate academic resilience (Brown & Tylka, 2011; Hartley, 2011; Morales, 2008a, 2008b), which has implications for students' academic opportunity, performance, and achievement (Brooks, 2006; Cappella & Weinstein, 2001; Cunningham & Swanson, 2010; Gayles 2005). Resilience theory offers insight into the risk and protective factors related to academic resilience among Black college students. In resilience theory, risk factors increase the likelihood of a negative outcome whereas protective factors decrease the likelihood of a negative outcome and increase the likelihood of a positive outcome (Bowman, 2013; Cassen et al., 2008; Greene & Conrad, 2002). Protective factors can have direct or moderating effects (Luthar et al., 2000; Zimmerman, 2013; Zimmerman et al., 2013). Negative campus climate is a *risk factor* that might hinder academic resilience. Civic engagement is one potential *protective factor* that might moderate the relationship between negative campus climate and academic resilience.

Research suggests that civic engagement is related to academic resilience via motivation to mobilize resources, give back to a community, achieve set goals, honor sacrifices of others (e.g., family), or feel a sense of pride (Borijan, 2018; Suarez-Orozco et al., 2015). For instance, using a phenomenological design, Borijan (2018) explored academic resilience and civic engagement among 8 academically successful Latino undocumented undergraduate students. Borijan (2018) found that students' civic engagement (e.g., volunteering, advocacy, and activism) focused on helping others gain access to higher education and helped students remain motivated to maintain their academic resilience. The motivation to maintain academic resilience as a result of students' civic engagement was especially important considering their experiences with bullying, racism, and discrimination, and efforts to rescind the Deferred Action for Childhood Arrivals (DACA) program under the Trump administration. In a sample of 909 self-identified undocumented undergraduate students, Suarez-Orozco and colleagues (2015) found that students faced significant challenges (e.g., time constraints from work, college affordability, campus-based discrimination), accessed campus-level assets, reported high levels of academic resilience, and reported civic engagement in one or more activities in the previous month (e.g., mentoring or helping community members with translation). Like Borijan (2018), students reported that civic engagement motivated them to continue their studies. Literature linking motivation as a mechanism by which civic engagement serves as a protective factor has been primarily conducted with Latino populations but may extend to racially minoritized groups experiencing discrimination such as Black college students.

Prior research suggests that the school environment is related to marginalized adolescent students' civic engagement and resilience (Daniels et al., 2015; Sieder et al., 2017). Still, limited research examines civic engagement as a protective factor that promotes academic resilience

among Black college students who experience a negative campus climate. A few studies have examined the effects of civic engagement on academic resilience among African American students who experience environmental risk. In one study, Richards et al. (2016) examined the effects of a Civic Engagement Curriculum (CEC) strengths-based intervention that aimed to enhance resilience among urban low-income African American middle school youth in the contexts of toxic stress (e.g., low income high violence communities). Using leadership, life satisfaction, and coping as a proxy for resilience, Richards et al. (2016) found that the CEC significantly predicted higher levels of leadership, but not life satisfaction or coping among youth. Chan and colleagues (2014) noted that civic engagement in adolescence predicted higher levels of civic engagement and academic outcomes (e.g., achievement) during emerging adulthood among African American and Latino emerging adults exposed to high levels of risk factors (e.g., high poverty neighborhoods). These findingd suggest that civic engagement may act as a protective factor that reduces the impact of risk on positive outcomes (e.g., academic resilience) among African American populations.

Finally, using incremental regression analyses, Perez Espinoza, Ramos, Coronado, and Cortes (2009) found that civic engagement, an environmental protective factor measured by volunteerism in social service, a cause, politics, tutoring, and functionary work was significantly associated with academic resilience (i.e., high school GPA, school awards, and honors and advanced placement courses) in a sample of undocumented Latino students (83% college students). Cluster analyses revealed that protected (i.e., low risk and low protective factors) and resilient (i.e., high risk and high protective factors) students reported significantly higher civic engagement and academic resilience when compared to high risk students (i.e., high risk and low protective factors). These findings may lend support for civic engagement as a protective factor

that impacts academic resilience among other traditionally underrepresented or marginalized groups such as Black college students.

METHOD

In this section, I describe the methodology used to examine Research Questions: (1a) How is general, academic, and racial campus climate associated with academic resilience among Black college students? and (1b) Does civic engagement moderate the relationship between general, academic, and racial campus climate and academic resilience among Black college students? I hypothesized that: (1a) General, academic, and racial campus climate would significantly predict academic resilience, such that more positive perceptions of campus climate will predict higher levels of academic resilience; and (1b) civic engagement would moderate the relationship between each type of campus climate and academic resilience such that civic engagement will attenuate the effect of general, academic, and racial campus climate on academic resilience. Specifically, Black college students who are more civically engaged are expected to experience higher levels of academic resilience regardless of their perceptions of campus climate.

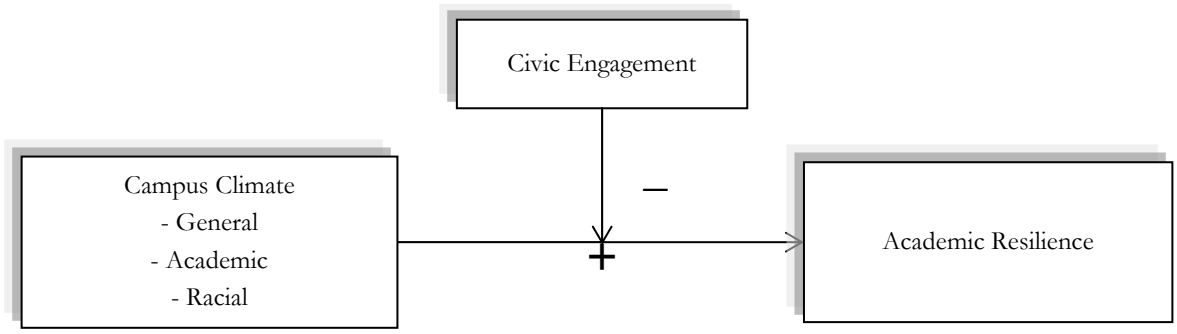

Figure 1 Campus climate and academic resilience moderated by civic engagement (Hypotheses 1a and 1b)

Setting

[University] is a historically and predominantly white large public research university with a student population of over 40,000 domestic and international students combined. As of Fall 2017, the university employed 26.2% faculty and academic staff of color. Of the more than 40,000 students that were enrolled as of Spring 2018, 13.2% were international students and 19.7% were domestic students of color. This included 6.9% Black/African American, 5.2% Asian, 4.4% Hispanic, 0.2% American Indian/Alaskan Native, and 0.1% Hawaiian/Pacific Islander students. An additional 2.9% of students identified as two or more races, and 1.1% was not reported. African American/Black first-time undergraduate students attending the university took an average of 5.04 calendar years to earn a bachelor's degree, the longest of any racial identity group. The university and broader community had a history of racial tension, but recent institutional initiatives aimed to promote diversity and inclusion. Relatedly, the enrollment of students of color had been increasing with the 2018 – 2019 freshman class representing increases in the admission of African American/Black students. The university had used letters to the student body, discussions, and townhall meetings to address topics related to campus climate such as the lack of representation of students, staff, and faculty of color on campus, establishing programs, departments, and colleges with foci on racial and ethnic studies, transgender bathroom use, reinforcing a commitment to inclusion, Black Lives Matter, and broader themes of diversity and inclusion.

Sample

The sampling frame for this study included self-identified Black or African American undergraduate students at [university], who were at least 18 years of age (N = 3597). Students

were either currently enrolled for the Fall 2018 semester (n = 3302) or enrolled for Spring 2018 and unenrolled (and not graduated) in the Fall 2018 semester (n = 295). Students who were unenrolled (and not graduated) were included as their experience may have differed from students who remained enrolled. These criteria were necessary as participants needed to identify as Black or African American to speak to the lived experiences of this demographic including assessing the university campus climate as students in this setting and must be at least 18 years of age to provide consent. The anticipated sample for this study was approximately 200 students. Power analyses using G*Power suggested a minimum of 178 students ($f2 = .15$, $\alpha = .05$, power = .95, predictors = 11). Simple random sampling procedures were used to recruit participants of interest for this study.

Recruitment

Recruitment of participants commenced after receiving approval from the Institutional Review Board at MSU (MSU STUDY ID: STUDY00000937; see Appendix A). The university registrar's office was used to recruit participants of interest for this study. The university registrar's office randomly sampled from the entire population of eligible participants for this study, allowing for a representative sample of Black students at [university]. The university registrar's office selected a minimum of 10 times the desired sample size with an anticipated 10% response rate (see Table 1). Once the sample was drawn, the university registrar's office sent a targeted email to eligible participants detailing the name and purpose of the study, time commitment, eligibility criteria, compensation, researchers' contact information, and an embedded link to the survey (see Appendix B). Using the registrar's office to recruit participants may have limited the scope of the sample such that the study did not representatively capture the population of students who began undergraduate studies at [university] and departed – these

students might differ from students who did not depart. Further, this recruitment method may have limited the variability of the sample such that students who may feel the most distressed (i.e., those who left the university) did not respond to the recruitment email.

In total, 527 participants completed at least some portion of the survey for an initial response rate of 14.7%. Next, 135 participants were removed after conducting listwise deletion for missingness and an additional 4 participants were removed who identified as gender non-binary or self-described[3]. Participants who identified as gender non-binary or self-described were removed given the small sample size. Thus, the final analytic sample reflected 10.8% of the target population[4]. Specifically, the sample for the current study included 388 students who were primarily women (N = 76.8%), social, behavioral, and economic sciences (SBE) majors (N = 58.8%), enrolled full-time (87.4%), and lived on campus (N = 59.0%) with an average grade point average (GPA) of 3.14 (*SD* = .56) (see Table 2). Of the 527 students who began the survey, there were no significant differences between included participants and those excluded due to missingness based on gender ($\chi^2 = 1.04$, p = .31), year ($\chi^2 = 5.92$, p = .21), or college ($\chi^2 = .025$, p = .88).

[3] One participant who was removed for missingness identified as gender non-binary or self-described

[4] The original request to the registrar was to recruit a target sample of 1000 students (5x the target sample of 200) who were second year or above. However, the registrar did not correctly interpret the request and instead sampled the entire population of self-identified Black or African American undergraduate students including first year students. Therefore, the targeted sample included 3597 students [3302 out of 3597 were enrolled for FS18 (91.8 %) and 295 out of 3597 were enrolled for SS18, but not graduated or enrolled FS18 (8.2 %)].

Table 1 Population and sample demographic comparison (study 1)

	Population (N = 3597)		Included Participants (n= 388)		Excluded Participants (n = 139)	
Gender						
Women	2093	(59.7%)	298	(76.8%)	66	(48.48%)
Men	1357	(40.0%)	90	(23.2%)	26	(18.71%)
Non-binary or self-described					5	(3.60%)
Missing					42	(30.22%)
Year						
First Year	1103	(32.8%)	100	(25.8%)	28	(20.14%)
Second Year	781	(23.2%)	97	(25%)	27	(19.42%)
Third Year	776	(21.4%)	77	(19.8%)	10	(7.19%)
Fourth Year	790	(22.5%)	82	(21.1%)	20	(14.39%)
Fifth+ Year			32	(8.2%)	12	(8.63%)
Missing					42	(30.22%)

Table 2 Participant demographics (study 1)

	Participants (*N*= 388)	
Sex		
Female	298	(76.8%)
Male	90	(23.2%)
Year		
First Year	100	(25.8%)
Second Year	97	(25%)
Third Year	77	(19.8%)
Fourth Year	82	(21.1%)
Fifth+ Year	32	(8.2%)
College		
Social, Behavioral, and Economic Sciences (SBE)	228	(58.8%)
Science, Technology, Engineering, and Mathematics (STEM)	159	(41.0%)
Missing	1	(0.3%)
Enrollment		
Full-Time	339	(87.4%)
Part-Time	27	(7.0%)
Not Currently Enrolled	6	(1.5%)
Missing	16	(4.1%)
First Generation College Student		
Second+ Generation	214	(55.2%)
First-Generation	154	(40.5%)
Missing	17	(4.4%)
Housing		
On Campus	229	(59.0%)
Off Campus	143	(36.9%)
Missing	16	(4.1%)
Employment		
Employed part-time	238	(61.3%)
Unemployed looking for work	61	(15.7%)
Unemployed not looking for work	51	(13.1%)
Employed full-time	21	(5.4%)
Retired	1	(0.3%)
Missing	16	(4.1%)

Data Collection

This study addressed the research questions via an online survey using Qualtrics software (see Appendix C for survey instrument). The survey's estimated response time was 21 minutes. Students interested in participating in the study were instructed to click on the embedded link to the survey from the registrar email, provide documentation of informed consent, and complete the survey. The first 200 participants received a $10 Amazon gift card incentive upon completion of the survey. All other participants were informed that the survey was no longer incentivized, but participants could still take the survey if interested. All information was kept confidential to the maximum extent allowable by law.

The General, Academic, and Racial Campus Climate Scales were used to measure students' perceptions of campus climate (Reid & Radhakrishnan, 2003). An adapted version of the Youth Inventory of Involvement was used to measure frequency of students' civic engagement (Pancer, Pratt, Hunsberger, & Alisat, 2007). The Academic Resilience Scale was used to measure students' academic resilience (Suárez-Orozco et al., 2015). The demographic questionnaire was used to characterize the sample of the study and included items such as: current year in school, enrollment status (e.g., part-time or full-time), college (e.g., STEM or Social, Behavioral, and Economic Sciences[5]), overall grade point average (GPA), and first year generational status. The survey concluded with a debriefing form and list of campus and community resources to attend to the possible feelings of discomfort participants may have

[5] STEM represents the following colleges: Agriculture and Natural Resources, Engineering, Human Medicine, Lyman Briggs College, Natural Science, Nursing, Osteopathic Medicine, and Veterinary Medicine. Social Behavioral and Economic Sciences represents the remaining colleges: Arts and Letters, Communication Arts and Sciences, Education, Eli Broad College of Business and Eli Broad Graduate School of Management, James Madison College, Music, Residential College in the Arts and Humanities, and Social Science.

experienced in reporting on campus climate (see Appendix D). At the close of the survey, participants were routed to a separate survey to provide contact information for the incentive.

Three senior Black college students attending [university] (1 man and 2 women) piloted the full survey to assess time for completion, clear language, and any errors (e.g., grammatical and display logic) prior to full data collection. During the pilot, students completed the electronic survey and were provided with a paper copy. Using the paper copy, students were instructed to note: any confusing language, difficult or redundant questions, grammatical errors, display errors, or other concerns. Students' time for completion (i.e., review of informed consent to entering an email address for the incentive) was recorded and averaged 20.3 minutes. After completing the survey, students reviewed any notes on the survey. Next, students were asked: Did you have any difficulty answering a question? Were the answer choices easy or difficult to follow? Were the response options thorough enough? Was there any question that felt out of place? Was there any question that felt redundant? Was there any question that was particularly interesting or uninteresting? Students reported 2 grammatical errors in the instructions of the Racial Battle Fatigue Block and no additional errors or major concerns. The grammatical errors were corrected in the electronic survey.

Measures

General, Academic, and Racial Campus Climate Scales. The General, Academic, and Racial Campus Climate Scales developed by Reid and Radhakrishnan (2003) were used to assess students' perceptions of campus climate. Sample items from the General Campus Climate (GCC) scale included "I have found the atmosphere at this university to be very friendly," and "In general, I fit in with other students here." The Academic Campus Climate (ACC) scale included three subscales: instructor, seriousness, and respect. Sample items from the ACC scale included

"My work is evaluated fairly (instructor)," "My instructors view me as a serious student (seriousness)," and "I have had instructors encourage me to major in their field (respect)." The Racial Campus Climate (RCC) scale included two subscales: racial experiences and university perceptions. Sample items from the (RCC) scale included "I have experienced racial insensitivity from other students (racial experiences)" and "The university makes a genuine effort to recruit racial and ethnic minority students (university perceptions)." The items were rated on a 7-point Likert scale ranging from 'Strong Agreement (1)' to 'Strong Disagreement (7)' and coded such that higher scores indicate more positive perceptions of campus climate. This scale was originally validated with African American, Latino, Asian American and White undergraduate and graduate students and indicated good internal consistency with Cronbach's alphas ranging from .68 to .76 (GCC α = .72; ACC instructor α = .75, ACC seriousness α = .75, ACC respect α = .68; RCC racial experiences α = .70 and RCC university perceptions α = .76). Participants' average score (mean scale score) was calculated for each campus climate scale. In the current sample, campus climate scales indicated good internal consistency (GCC α = .79; ACC α = .86; RCC α = .87).

Youth Involvement Inventory. The Youth Inventory of Involvement (YII) was used to assess students' history and frequency of civic engagement. The YII is a 30-item measure of community and political involvement across four factors: political activities, community activities, helping activities, and passive involvement (Pancer, et al., 2007). Sample items included: "gave help (e.g., money food, clothing, rides) to friends or classmates who need it" and "served as a member of an organizing committee or board for a school club or organization." The items were rated on a 5-point Likert scale ranging from 'Never Did This Over the Previous Year (0)' to 'Did This A Lot Over the Previous Year (4)' with higher scores indicating higher

levels of civic engagement. This scale was originally validated with high school students and indicated high internal consistency for the full scale with Cronbach's alpha of .90 for Time 1 and .88 for Time 2. The YII has been used with Black college student populations (Leath & Chavous, 2017). Items were adapted to fit a college student population [e.g, "Participated in a school academic club or team" was changed to "Participated in an academic club or team (e.g., accounting association)"]. Participants' average score (mean scale score) was calculated for the YII scale. In the current sample, the YII indicated good internal consistency (α =.93).

Academic Resilience Scale. The Academic Resilience Scale was used to assess students' academic resilience. The Academic Resilience Scale is an 11-item composite measure of academic resilience developed from college readiness, persistence, and completion literature (Suárez-Orozco et al., 2015). Sample items included: "I know how to get the help I need" and "I can handle difficult situations at school." The items were rated on a 5-point Likert scale ranging from 'Strongly Disagree (1)' to 'Strongly Agree (5)' with higher scores indicating higher levels of academic resilience. This scale was originally validated with undocumented undergraduate college students (e.g., community college, 4-year public and private colleges/universities) and indicated high internal consistency with a Cronbach's alpha of .82. Participants' average score (mean scale score) was calculated for the Academic Resilience scale. In the current sample, the Academic Resilience scale indicated acceptable internal consistency (α =.75).

Demographic Questionnaire. A demographic questionnaire was used to characterize the sample of the study and was developed specifically for use in this study. This questionnaire gathered information about current year in school, enrollment status (e.g., part-time or full-time), college (e.g., STEM or SBE), current overall grade point average (GPA), first year generational

status, current housing status (e.g., on-campus or off-campus), gender, age, marital status, employment status, and parent(s) education level.

RESULTS

Regression Analyses

Each campus climate scale indicated good internal consistency (GCC α = .79; ACC α = .86; RCC α = .87). Therefore, each campus climate scale was used as a composite measure. The Youth Inventory of Involvement also indicated good internal consistency (α =.93) and was used as a composite measure. Lastly, the Academic Resilience scale indicated acceptable internal consistency (α =.75) and was used as a composite measure[6]. Overall students reported moderate levels (neutral – favorable perceptions) of general, academic, and racial campus climate, low levels of civic engagement, and high levels of academic resilience (see Table 3).

Table 3 Descriptive statistics (study 1)

Variable	*M*	*SD*	*Min*	*Max*
General (GCC)	4.73	1.28	1.00	7.00
Academic (ACC)	4.78	.96	1.38	7.00
Racial (RCC)	4.48	1.24	1.00	7.00
Youth Inventory (CE)	1.37	.77	.00	4.00
Academic Resilience (AR)	4.02	.55	2.09	5.00

Data were analyzed using hierarchical multiple regression analyses in SPSS to examine if general, academic, and racial campus climate predicted academic resilience, and if the relationship between general, academic, and racial campus climate and academic resilience was moderated by civic engagement. The campus climate and civic engagement scales were grand

[6] Exploratory factor analyses (EFA) were conducted for each scale: General Campus Climate, Academic Campus Climate, Racial Campus Climate, Youth Inventory of Involvement, and Academic Resilience. After conducting listwise deletion for missing data, a total of 388 cases were used to analyze each scale. Descriptive statistics and factor loadings can be found in Appendix E.

mean centered prior to analysis to reduce multicollinearity. After conducting listwise deletion for missing data, a total of 387 cases were used in the analysis. In this hierarchical multiple regression model, gender, year, and college (e.g., STEM or SBE) were entered in block one, general (GCC), academic (ACC), and racial campus climate (RCC) were entered in block two, and civic engagement (CE) and the interaction terms (i.e., general campus climate by civic engagement; academic campus climate by civic engagement, and racial campus climate by civic engagement) in block three (see Table 4). Gender, year in school, and college were entered in block one as controls because academic resilience has been shown to vary by gender and college among Black students (McGee & Martin, 2011; Ricketts, Engelhard, & Chang, 2017), and as students matriculate through college they may be more inclined to demonstrate academic resilience due to adaptations or familiarity with the academic milieu (Morales, 2008a, 2008b). Too few students identified as gender non-binary or self-described gender, therefore the analyses focused on men and women only.

Table 4 Academic resilience predicted by general, academic, and racial campus climate, moderated by civic engagement (Model 1)

Block	Regression Equation
1	$\hat{Y}_{ar} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + \varepsilon$
2	$\hat{Y}_{ar} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + \varepsilon$
3	$\hat{Y}_{ar} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + b_{ce}X_{ce} + b_{ce\times gcc}X_{ce}X_{gcc} + b_{ce\times acc}X_{ce}X_{acc} + b_{ce\times rcc}X_{ce}X_{rcc} + \varepsilon$

In the hierarchical multiple regression model, Block 2 explained significantly more variance in academic resilience than Block 1(ΔF (3, 380) = 28.70, $p < .001$), and Block 3

explained significantly more variance than Block 2 (ΔF (4, 376) = 3.61 p = .007) (see Table 5). In Block 1, gender, year, and college did not explain a significant proportion of the variance academic resilience [R^2 = .02, F (3, 383) = .07, p =.97]. In Block 2, with the addition of the campus climate variables, the second block explained a significant proportion of the variance in academic resilience [R^2 = .19, F (6, 380) = 14.39, p < .001]. Lastly, in Block 3 after adding civic engagement and the interaction terms, the final block explained a significant proportion of the variance in academic resilience [R^2 = .22, F (10, 376) = 10.32, p < .001].

General campus climate (B= .07, p=.01), and academic campus climate (B=.23, p < .001) positively predicted academic resilience, but racial campus climate (B= -.10, p=.001) negatively predicted academic resilience. Controlling for all other predictors, individuals who reported more positive perceptions of general campus climate reported more academic resilience, such that for each 1 unit increase in general campus climate, academic resilience increased by .07. Also, individuals who reported more positive perceptions of academic campus climate reported more academic resilience, such that for each 1 unit increase in academic campus climate, academic resilience increased by .23. Conversely, for each 1 unit increase in racial campus climate, academic resilience decreased by .10.

Civic engagement only moderated the relationship in the hypothesized direction between general campus climate and academic resilience (B= -.08, p =.01). Specifically, students who reported high levels of civic engagement had similar levels of academic resilience, regardless of their perceptions of general campus climate (see Figure 2). However, students who reported low levels of civic engagement had lower levels of academic resilience when their perceptions of general campus climate were less positive.

Table 5 Unstandardized coefficients and standard errors for hierarchical regression model predicting academic resilience

	Academic Resilience $N = 387$					
	Block 1		*Block 2*		*Block 3*	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*
Gender	.00	.07	.03	.06	.03	.06
Year	-.01	.02	.01	.02	.01	.02
College	.02	.06	-.04	.05	-.06	.05
General			.08*	.03	.07*	.03
Academic			.23*	.04	.23*	.04
Racial			-.11*	.03	-.10*	.03
Civic					.07*	.03
General*Civic					-.08*	.03
Academic*Civic					.05	.05
Racial*Civic					-.02	.03
R^2	.001		.19		.22	
ΔR^2	.001		.19		.03	
ΔF	.073		28.70*		3.61*	

*p<.05

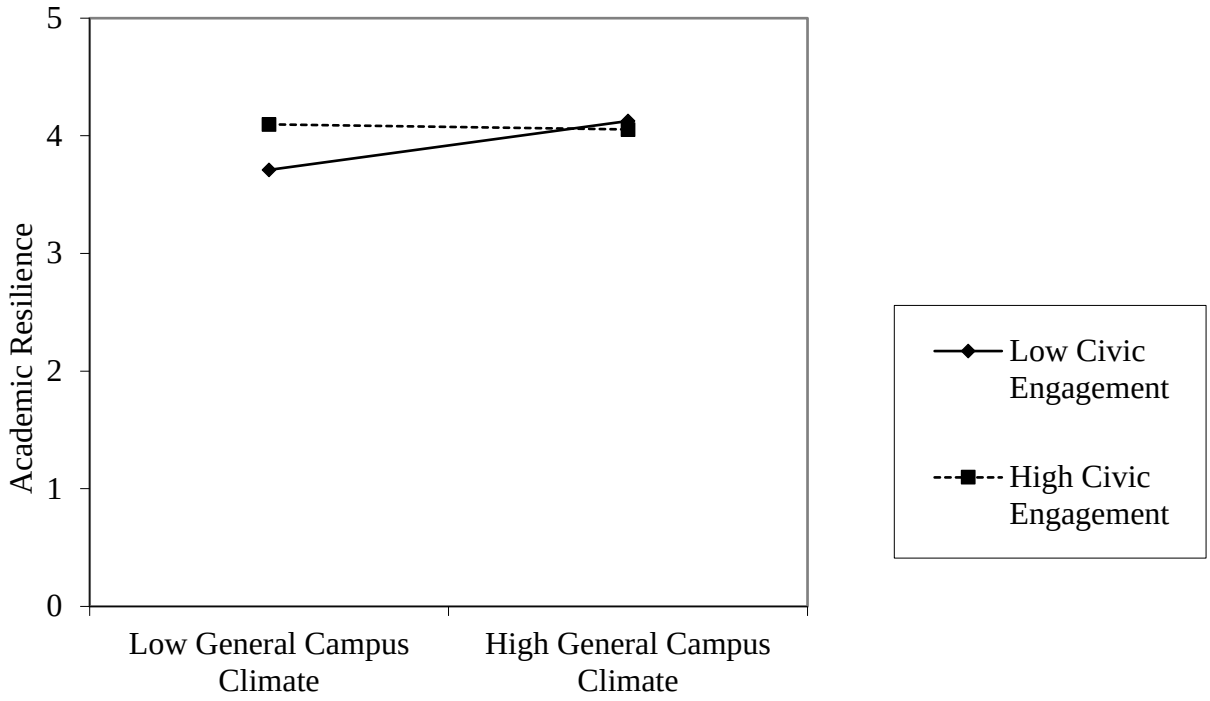

Figure 2 Conditional variation of academic resilience across different levels of general campus climate and civic engagement

DISCUSSION

Academic resilience research adopts a strengths-based model to explore protective factors and processes that help facilitate positive outcomes (e.g., degree completion) or recovery (e.g., re-enrollment in courses) despite personal or environmental risk. Identification of these protective factors can inform support strategies or interventions to promote positive outcomes (Bowman, 2013; Kenny et al, 2007; Masten, 2001). The current research extends existing literature on academic resilience among Black college students by exploring the relationship between multiple forms of campus climate (i.e., general, academic, and racial) – environmental risks – and academic resilience. Further, the current research explores civic engagement as a protective factor that moderates the relationship between the school environment (i.e., campus climate) and a positive academic outcome (i.e., academic resilience). In line with Fergus and Zimmerman's (2005) protective-reactive protective factor model, civic engagement attenuated the effects of negative general campus climate on Black college students' academic resilience.

Summary of Findings

General and academic campus climate positively predicted academic resilience. This finding is consistent with prior literature which suggests that more positive perceptions of campus climate predict more positive academic outcomes (Brown et al., 2005) whereas less positive perceptions of campus climate predict less positive academic outcomes (Cabrera et al., 1999; Fischer, 2010; Harper, 2013; Martin et al., 2017; Strayhorn, 2013). One potential explanation for this finding is students' persistence or intent to persist. Strayhorn (2013) found that Black students' perceptions of campus climate predicted their intentions to leave college, such that students with lower perceptions of campus climate had higher intentions to leave

college as compared to those with higher perceptions of campus climate. If Black college students report more positive perceptions of general and academic campus climate, they may have lower intentions to leave college and therefore demonstrate higher academic resilience.

Contrary to existing literature, racial campus climate negatively predicted academic resilience. This finding was unexpected and warrants additional research to determine if this finding replicates among Black college students in other settings. The racial campus climate scale used in this study focused on racial experiences (e.g., I have experienced racial insensitivity from other students) and university perceptions (e.g., The university makes a genuine effort to recruit racial and ethnic minority students). Racial campus climate scales such as the Campus Racial Climate for African Americans Scale (Thomas, 2017) which assesses institutional factors (e.g., The university has practices in place that support African American students), racial experiences and interactions (e.g., People on campus have low expectations of African American students), and student interracial interactions (e.g., Students from different races and ethnicities do extracurricular activities together) could be useful for a more nuanced examination of racial campus climate among Black college students. More research is needed to identify the mechanism(s) that might mediate the relationship between racial campus climate and academic resilience.

Civic engagement moderated the effect of general campus climate on academic resilience. Scant research examines civic engagement as a moderator between campus climate and academic resilience, but the findings are consistent with studies that suggest civic engagement predicts resilience and academic achievement among Black students who experience environmental risk (e.g., high violence or high poverty communities) (Chan et al., 2014; Richards et al, 2016). One potential explanation for this finding is students' motivation. Studies

have found that motivation is a mechanism by which civic engagement serves as a protective factor for students (Borijan, 2018; Suarez-Orozco et al., 2015). Specifically, civic engagement motivated students to continue their studies, achieve set goals, mobilize resources, give back to a community, honor sacrifices of others (e.g., family), or feel a sense of pride (Borijan, 2018; Suarez-Orozco et al., 2015). Perhaps students who are civically engaged are more motivated to demonstrate academic resilience. Civic engagement did not moderate the relationship between academic or racial campus climate and academic resilience. The civic engagement measure focused on political, community, helping and passive activities. Specific forms of campus climate (i.e., academic and racial) may be most related to civic engagement activities concerning academic and racial issues (e.g., advocating for ethnic studies courses), resulting in a nonsignificant moderation between academic and racial campus climate and academic resilience.

Limitations and Future Directions

The findings should be interpreted considering some limitations. First, the study did not representatively sample students who began undergraduate studies and departed. These students may differ from students who remained enrolled. Next, the sample was drawn from one university. General, academic, and racial campus climate likely vary by institution. Future students might extend this research by sampling students from multiple universities, including those who delayed or discontinued studies. Also, the academic resilience scale was not previously validated with Black college students. Recent academic resilience scales have been validated with undocumented immigrant Latinx students in the U.S. or with non-U.S. samples. Future studies might also develop and validate an academic resilience measure for Black college students. An academic resilience measure specific to Black college students may best capture age or cultural differences that exist between and across different populations. The current study

used an index of civic engagement and did not explore the moderating relationship of specific domains of civic engagement. Finally, future studies might extend this research by specifying domains of civic engagement (e.g., political or helping) that act as a protective factor among Black college students.

Implications and Conclusions

General, academic, and racial campus climate are three of various forms of campus climate (e.g., other examples are gender campus climate and campus climate for sexual violence) that may impact Black college students' academic resilience. The findings of the current study provide partial support of the positive relationship between campus climate and academic resilience among Black college students, such that more positive perceptions of general and academic campus climate predict higher levels of academic resilience. Implications for future research and practice to improve general and academic campus climate and subsequently advance academic resilience among Black college students can purposefully target multiple groups. To improve general campus climate students might consider collaborating with or participating in university sponsored events, residence hall events, or registered student organization campaigns and social events (e.g., luncheons, ice cream socials, movie nights) that provide opportunities for intercultural engagement. To improve academic campus climate, students might consider highlighting unfair treatment, communicating needs to instructors and academic advisors, or participating in course discussions and encouraging the participation of others (including those with diverging viewpoints). To improve academic campus climate, faculty might consider more intentionally emphasizing a culture of respect, inclusivity, and support for intellectual curiosity via course materials (e.g., syllabus and lectures) and activities (e.g., office hours, class discussions, and group assignments). To improve both general and

academic campus climate, universities could consider promoting principles of diversity, inclusion and equity broadly throughout the university and surrounding communities (e.g., university branding and taglines). More specifically, universities could consider partnering with research faculty and student affairs professionals to conduct studies that assess campus climate and examine the relationship between various forms of campus climate and academic resilience. It would be particularly important to conduct these studies among minoritized students with support from internal grants and attention to dissemination across the university. To improve general and academic campus climate, student affairs professionals might consider facilitating intergroup dialogues about topics related to campus climate (e.g., intercultural interactions, course dynamics) (Griffin, 2017). Student affairs professionals could also consider providing support (e.g., advising, advertising, co-sponsorships) to student organizations, events, and academic groups that aim to promote inclusivity and positive campus climate.

Surprisingly, racial campus climate negatively predicted academic resilience among Black college students in this sample. More research is needed to understand the relationship between racial campus climate and academic resilience. Griffin (2017) outlined three frameworks that can be useful for exploring campus climate (or campus racial climate specifically) and diversity: Hurtado and colleagues' (2012) three-dimensional campus racial climate framework: the multi-contextual model for diverse learning environments (DLE), Smith's (2009) model for diversity, and Rankin and Reason's (2008) transforming tapestry model. According to Griffin (2017) Hurtado and colleagues' (2012) multi-contextual model for diverse learning environments (DLE) focuses on campus climate, students' identities, and learning outcomes. This framework might lend itself to the study of racial campus climate (a campus climate measure) and academic resilience (an academic outcome) by exploring students'

identities as a potential mechanism that clarifies the relationship between the two variables. Next, Smith's (2009) model for diversity focuses on campus climate and the promotion of equitable outcomes. This framework might be useful for the study of racial campus climate and academic resilience by exploring how racial campus climate can be assessed to promote academic resilience. Lastly, Rankin and Reason's (2008) transforming tapestry model focuses on campus climate and organizational transformational change. Similarly, this model could be useful in exploring the relationship between racial campus climate and academic resilience by assessing racial campus climate and moving toward organizational change within the university to support academic resilience among Black college students.

Findings of the current study also support the moderating (protective) effect of civic engagement on the relationship between general campus climate and academic resilience among Black college students. University faculty, staff, students, and affiliates can advance academic resilience among Black college students by way of promoting the usefulness of or personal involvement in civic engagement and service learning with foci on university-community relationships (Krings, Austic, Gutierrez, Dirksen, 2015; Myers, Myers, & Peters, 2018).

Prior research has examined the relationship between campus climate and academic outcomes among Black college students, typically focusing on one form of campus climate such as racial campus climate or general/overall campus climate. The current study examined the relationship between three forms of campus climate – general, academic, and racial – and academic resilience among Black college students. Given the differential relationships between each form of campus climate and academic resilience, it is imperative to continue examining how the school environment impacts the academic outcomes of Black college students to promote academic resilience and success. The current study also examined civic engagement as

a protective factor that moderated the relationship between campus climate and academic resilience. The findings revealed differential relationships between campus climate, civic engagement, and academic resilience such that civic engagement moderated the relationship between general campus climate and academic resilience only. Future research and practice will benefit from considering the role of civic engagement in Black college students' academic resilience as it can buffer environmental risk.

CHAPTER 3: Campus Climate, Civic Engagement, and Racial Battle Fatigue

LITERATURE REVIEW

Campus Climate and Racial Battle Fatigue among Black Students

In recent years, educators and practitioners have drawn attention to the college student 'mental health crisis' or growing rates of college student suicide, mental illnesses (e.g., anxiety and mood disorders), and other severe and complex mental health issues (Drum, Brownson, Burton Denmark, & Smith, 2009; Pinder-Amaker & Bell, 2012). Negative campus climate can act as a stressor among college students (Johnson, Wasserman, Yildirim, & Yonai, 2014) and may contribute to the mental health crisis among college students. For college students of color specifically, race (or ethnicity) related stressors can negatively impact students' health and well-being as well as students' academic adjustment, and retention (Johnson et al., 2014; Neville, Hepner, Ji, & Thye, 2004; Shahid, Nelson, & Cardemil, 2018; Smith et al., 2007). Over time, race-related stressors can evoke psychological, physiological, and emotional/behavioral stress responses known as racial battle fatigue. Specifically, racial battle fatigue is the "cumulative psychosocial-physiological impact of racial micro- and macroaggressions on racially marginalized targets" (Smith et al., 2016, p. 1192).

Limited literature has examined campus climate and racial battle fatigue among African American college students. According to Smith (2008a), students' perceptions of the college or university environment are shaped by historical exclusion (e.g., resistance to integration, and the mission, policies, and traditions that have benefitted white students prior to and since integration), representation of people of color (POC) within the institution (e.g., students, staff, faculty, and administration), and campus-wide racist behaviors. Campus-wide racist behaviors

can manifest as racial micro- and macroaggressions or "interpersonal and environmental daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults to the target person or group" (Sue et al., 2007, p. 273). Racial micro- and macroaggressions are emphasized in the racial battle fatigue framework and can contribute to an unsupportive, hostile, and distressing campus climate for students of color (Johnson-Ahorlu, 2012; Smith et al., 2016).

Recent qualitative research in this area has focused on the campus experiences of Black male students and their impact on the psychological and physiological stress responses of racial battle fatigue. In one study, Smith, Allen, and Danley (2007) examined experiences of campus racial climate among 36 African American men attending Harvard University, Michigan State University, University of California Berkley, University of Illinois at Urbana-Champaign, University of Michigan, and University of Michigan Law School. Findings revealed the campus racial climates were perceived as hostile and unwelcoming where African American men were treated as outsiders. Participants reported racial microaggressions including anti-Black male stereotyping and hyper surveillance and control via campus and community policing in campus academic (e.g. classrooms), social (e.g. recreational areas), and public (e.g., convenience stores) spaces. Participants also reported psychological stress responses of racial battle fatigue including "frustration, shock, avoidance or withdrawal, disbelief, anger, aggressiveness, uncertainty or confusion, resentment, anxiety, helplessness, hopelessness, and fear" (p. 562). In a related study, Smith, Mustaffa, Jones, Curry, and Allen (2016) investigated perceptions of campus racial climate, experiences of and reactions to racial discrimination, psychological stress responses of racial battle fatigue, and perceived academic impacts among 36 Black male college students. Students described the campus racial climate as laden with racial microaggressions from faculty,

staff, students, and police like criminal, ghetto-specific, anti-intellectual, and student-athlete stereotypes. Students noted these racial microaggressions impeded students' academic opportunity to engage in meaningful course discussions, develop relationships with course instructors, or even change course schedules. Lastly, these experiences brought about psychological stress responses (e.g., frustration, anger, defensiveness, disappointment, and vulnerability) and physiological stress responses (e.g., chronic headaches) of racial battle fatigue. Hotchkins and Danley (2015) similarly noted that African American male student leaders at a predominantly white university experienced racial battle fatigue and academic impacts as a result of unwelcoming and toxic campus environments.

Although much of the past research on racial battle fatigue has focused on Black male students, a few studies have focused on other populations of Black students (e.g., women). Hotchkins (2017) shifted the focus to Black women student leaders attending a PWI. Participants experienced gender, racial, and gender-racialized microaggressions and described predominantly white student organizations as hostile. Moreover, participants described white peers as resistant and invalidating, and white male peers specifically as condescending and disrespectful. Though students invoked proactive coping mechanisms, Hotchkins (2017) found that women experienced gendernoir racial battle fatigue (i.e., the intersection of being Black and women) with psychological stress responses of anger and behavioral stress responses of avoidance. As Black women, participants attempted to subdue anger as a stress response to avoid the 'angry Black woman' stereotype. Participants also capitalized on avoidance as a stress response via buffered leadership (i.e., passive leadership behaviors perceived as less threatening to create distance from hostile peers) to navigate racism, sexism, and racialized sexism in perceived hostile organizations. Experiences of racial battle fatigue are not limited to undergraduate

students. In a study of 29 graduate students of color (1/3 African American and primarily women) in higher education student affairs master's programs, Hubain, Allen, Harris and Linder (2016) found that students experienced racial microaggressions (e.g., representatives of their race and invalidations) in courses, learning spaces, and the larger campus environment, felt tokenized, essentialized, and isolated, and subsequently experienced racial battle fatigue. Participants described experiencing racial battle fatigue as a result of 'educating others' about racism and diversity but did not specify racial battle fatigue as psychological, physiological, or behavioral.

Though few studies have examined campus climate and racial battle fatigue among African American college students, some research has found similar patterns of perceptions of campus climate and experiences of racial battle fatigue among African American faculty at historically and predominantly white institutions (Arnold, Crawford, & Khalifa, 2016; Griffin, Ward, and Phillips, 2014) supporting the notion that campus climate can act as a risk factor and may produce racial battle fatigue among African Americans. Like students, African American faculty report experiencing unwelcoming environments (general climate), challenges to their intellectual authority (academic climate), and being the target of racial slights (racial climate) (Smith, 2004; Smith, 2008a; Smith, et al., 2011). Among African American faculty, psychological and physiological stress responses associated with racial battle fatigue can include but are not limited to tension headaches, upset stomach, elevated blood pressure, constant anxiety extreme fatigue, insomnia, withdrawing emotionally and socially (Smith, 2004; Smith, et al., 2011).

Civic Engagement as a Protective Factor

Research suggest that Black college students may experience racial battle fatigue, a negative outcome that has implications for academic opportunity and performance, campus

leadership in student organizations, and well-being more broadly. Resilience theory may offer insight into the risk and protective factors related to racial battle fatigue among Black college students. Resilience theory includes both risk and protective factors. Risk factors increase probability of a negative outcome whereas protective factors decrease the likelihood of a negative outcome and increase likelihood of a positive outcome (Bowman, 2013; Cassen, et al., 2008; Greene & Conrad, 2002). Protective factors can have direct or moderating effects (Luthar et al., 2000; Zimmerman, 2013; Zimmerman et al., 2013). Negative campus climate is a *risk factor* that might lead to racial battle fatigue (a negative outcome), but one potential *protective factor* that might moderate this relationship is civic engagement.

Civic engagement has been used as an intervention strategy to improve physical health among Black women (Brown, Hudson, Chui, Metayer, Sequin, & Folta, 2017). However, minimal research examines civic engagement as a protective factor, especially as it relates to racial battle fatigue or stress, health, and well-being more generally among Black college students. Empirical literature has suggested a link between civic engagement and social, psychological, and emotional well-being among college students. For instance, in one study Fink (2014) found that a greater sense of civic engagement predicted higher social, psychological, and emotional well-being scores (i.e., flourishing) among college students (83% White). Flanagan and Bundick (2011) suggest that civic engagement is related to psychosocial well-being among college students via several mechanisms. First, the authors suggest civic engagement is linked to psychosocial well-being via self-reward such as a sense of benevolence, social network benefits, and feelings of attachment and identification by contributing to the public good. Next, civic engagement is linked to psychosocial well-being via positive reinforcement from social systems (e.g., schools) and subsequent personal satisfaction for engaging ‘normative’ civic duties (e.g.,

volunteering and voting). It is also suggested that civic engagement is linked to psychosocial well-being via a decrease in stress hormones from engaging in altruistic behavior. Lastly, Flanagan and Bundick (2011) posit civic engagement is linked to psychosocial well-being via an expanded worldview (e.g., power, privilege, and gratitude), increased psychological benefits of collectivistic versus individualistic behaviors, and a sense of belonging from engaging in collective action.

Prior literature highlights how civic engagement is directly liked to well-being, but civic engagement might also moderate the relationship between a risk factor (e.g., negative campus climate) and well-being. According to Hope and Spencer (2017), civic engagement promotes positive well-being by allowing racially minoritized youth to change conditions that increase vulnerability and stress. Using the Phenomenological Variant of Ecological Systems Theory (PVEST) framework, Hope and Spencer (2017) situated civic engagement as protective factor that can be leveraged as a coping strategy against racial discrimination. In this framework, civic engagement is used to counteract race-related vulnerability and stress in both reactive and proactive ways. Civic engagement is *reactive* when used to resist existent inequitable interpersonal and environmental conditions. Civic engagement is *proactive* when used to decrease net vulnerability and stress for oneself and community. For example, a Black college student may host a town hall discussion about current racial microaggressions in residence halls (reactive) and advocate for policies or initiatives that promote respect for diversity in residence halls and the broader campus community (proactive). In this light, civic engagement may act as a protective factor that buffers the impact of negative campus climate (i.e., a risk factor) on racial battle fatigue (i.e., an outcome) among Black college students by way of decreasing net vulnerability.

METHOD

In this section, I describe the methodology used to examine Research Questions: (2a) How is general, academic, and racial campus climate associated with racial battle fatigue among Black college students? and (2b) Does civic engagement moderate the relationship between general, academic, and racial campus climate and racial battle fatigue among Black college students? I hypothesized that: (2a) general, academic, and racial campus climate would significantly predict racial battle fatigue, such that more positive perceptions of campus climate will predict lower levels of racial battle fatigue; and (2b) civic engagement would moderate the relationship between each type of campus climate and racial battle fatigue such that civic engagement will attenuate the effect of general, academic, and racial campus climate on racial battle fatigue.

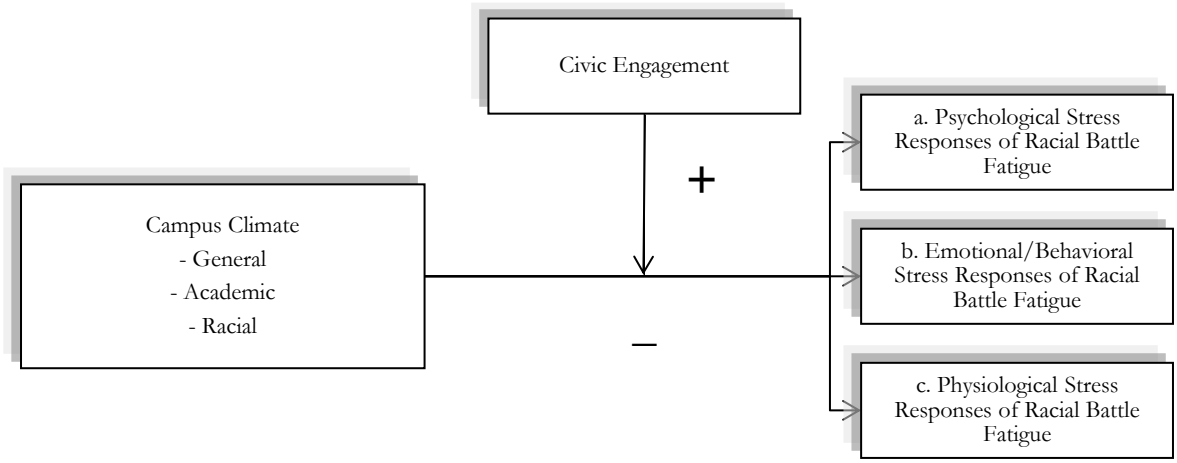

Figure 3 *Campus climate and racial battle fatigue moderated by civic engagement (Hypotheses 2a and 2b)*

Sample and Data Collection

This study employed the same sample, sampling and data collection procedures and measures [i.e., the General, Academic, and Racial Campus Climate Scale (Reid & Radhakrishnan, 2003), the Youth Inventory of Involvement (Pancer, et al., 2007)] outlined in Chapter 2 with the addition of the Racial Battle Fatigue Scale (Franklin, Smith, & Hung, 2014) detailed below. Using the university registrar's office to recruit participants may have limited the scope of the sample such that the study did not representatively capture the population of students who began undergraduate studies at [university] and departed – these students might differ from students who did not depart. Further, this recruitment method may have limited the variability of the sample such that students who may feel the most distressed (i.e., those that left the university) did not respond to the recruitment email. Population demographics for gender and year are reported in Table 4. In total, 527 participants completed at least some portion of the survey for an initial response rate of 14.7%; 155 participants were removed after conducting listwise deletion for missingness and an additional 4 participants were removed who identified as gender non-binary or self-described[7]. Participants who identified as gender non-binary or self-described were removed given the small sample size. Thus, the final analytic sample reflected 10.2% of the target population[8]. Specifically, the sample for the current study included 368 students who were primarily women (N = 76.9%), social, behavioral, and economic sciences (SBE) majors (N = 58.2%), enrolled full-time (90.8%), and lived on campus (N = 61.1%) with an average grade point average (GPA) of 3.15 (*SD* = .56) (see Table 3). Of the students who

[7] One participant who was removed for missingness identified as gender non-binary or self-described

[8] The original request to the registrar was to recruit a target sample of 1000 students (5x the target sample of 200) who were second year or above. However, the registrar did not correctly interpret the request and instead sampled the entire population of Black undergraduate students including first year students. Therefore, the sample resulted in 3597 students [3302 out of 3597 are enrolled for FS18 (91.8 %) and 295 out of 3597 were enrolled for SS18, but not graduated or enrolled FS18 (8.2 %)].

began the survey, there were no statistically significant differences between those included in the analyses and those excluded due to missingness with respect to gender (χ^2 = .98, p = .32) and college (χ^2 = .38, p = .54). Participants did differ based upon year such that freshman were less likely to be included in the sample and juniors were more likely to be included in the sample (χ^2 = 9.55, df = 4, p = .049, N = 485).

Table 6 *Population and participant demographic comparison for gender and year (study 2)*

	Population (N = 3597)		Included Participants (n= 368)		Excluded Participants (n = 159)	
Gender						
Women	2093	(59.7%)	283	(76.9%)	81	(50.1%)
Men	1357	(40.0%)	85	(23.1%)	31	(19.5%)
Non-binary or self-described					5	(3.14%)
Missing					42	(26.42%)
Year						
First Year	1103	(32.8%)	90	(24.5%)	38	(23.9%)
Second Year	781	(23.2%)	92	(25%)	32	(20.13%)
Third Year	776	(21.4%)	75	(20.4%)	12	(7.55%)
Fourth Year	790	(22.5%)	81	(22%)	21	(13.21%)
Fifth+ Year			30	(8.2%)	14	(8.81%)
Missing					42	(26.42%)

Table 7 *Participant Demographics (study 2)*

	Participants (*N*= 368)	
Gender		
Women	283	(76.9%)
Men	85	(23.1%)
Year		
First Year	90	(24.5%)
Second Year	92	(25%)
Third Year	75	(20.4%)
Fourth Year	81	(22%)
Fifth+ Year	30	(8.2%)
College		
Social, Behavioral, and Economic Sciences (SBE)	214	(58.2%)
Science, Technology, Engineering, and Mathematics (STEM)	153	(41.6%)
Missing	1	(0.3%)
Enrollment		
Full-Time	334	(90.8%)
Part-Time	27	(7.3%)
Not Currently Enrolled	6	(1.6%)
Missing	1	(0.3%)
First Generation College Student		
Second+ Generation	213	(57.9%)
First-Generation	154	(41.8%)
Missing	1	(0.3%)
Housing		
On Campus	225	(61.1%)
Off Campus	142	(38.6%)
Missing	1	(0.3%)
Employment		
Employed part-time	236	(64.1%)
Unemployed looking for work	60	(16.3%)
Unemployed not looking for work	50	(13.6%)
Employed full-time	21	(5.7%)
Missing	1	(0.3%)

Measures

Racial Battle Fatigue Scale. An adapted version of the Racial Battle Fatigue Scale (Franklin, Smith, & Hung, 2014) was used to assess students' racial battle fatigue. The Racial Battle Fatigue Scale is a measure of racial microaggressions and the frequency of psychological,

physiological, and behavioral stress responses. Only the psychological, physiological and behavioral stress response items were used in this study; racial microaggression items were not used. For each item, participants indicate how often it occurred: “How often did your mood dramatically change?” (psychological) “<How often did you> procrastinate?” (behavioral) and “<How often did you experience> muscle aches?” (physiological). The items are rated on a 5-point Likert scale ranging from ‘Never (1)’ to ‘Very Often (5)’ with higher scores indicating more racial battle fatigue. The scale was originally validated with Latino/a undergraduate and graduate students. Structural equation modeling path coefficients among stress responses (latent constructs) were moderate to strong and ranged from .269 to .381 (Franklin, Smith, & Hung, 2014). Because the racial battle fatigue scale had not be validated in a population of Black students, additional items from the racial battle fatigue framework (Smith, et al., 2011) were added to the original set of items. Ten psychological items were added such as how often students felt apathy, anxiety, or fear. Eight emotional/behavioral items were added such as how often students experienced prolonged high-effort coping, poor school or job performance, or withdrew or isolated from others. Sixteen physiological items were added such as how often students experienced headaches, fatigue, or gastric distress (see Appendix C for survey instrument).

RESULTS

Measurement

After conducting listwise deletion for missing data, a total of 368 cases were used to analyze the Racial Battle Fatigue scale. Descriptive statistics and factor loadings can be found in Appendix F. A total of eleven items were removed from the scale due to unclear cross-loadings (i.e., less than .10 difference) and low factor loadings (i.e., factor loadings under .32). The resultant four-factor solution accounted for 50.69% of the variance. The factors were labeled as Factor 1: Physiological (e.g., gastric distress), Factor 2: Psychological (e.g., irritable), Factor 3: Physio-behavioral (e.g., prolonged high-effort coping with stressors and headaches), and Factor 4: Psycho-behavioral (e.g., changes in close family relationships and helplessness). These four factors were used as outcomes in the regression analyses below.

Regression Analyses

The General Campus Climate, Academic Campus Climate, Racial Campus Climate, and Youth Inventory of Involvement scale indicated good internal consistency as outlined in Chapter 2 (GCC $\alpha = .79$; ACC $\alpha = .86$; RCC $\alpha = .87$; YII $\alpha = .93$) and each scale was used as a composite measure. The Racial Battle Fatigue Scale was used as four subscales consistent with the four-factor solution: physiological (PHY), psychological (PSY), physio-behavioral (BPHY), and psycho-behavioral (BPSY) stress responses[9]. Each factor indicated good internal consistency (PHY $\alpha = .89$; PSY $\alpha = .89$; BPHY $\alpha = .854$; BPSY $\alpha = .93$). Overall, students reported moderate levels (neutral – favorable perceptions) of general, academic, and racial campus climate, low

[9] Each stress response is referred to as racial battle fatigue. For instance, physiological stress responses of racial battle fatigue (PHY) is referred to as physiological racial battle fatigue.

levels of civic engagement, low levels of physiological racial battle fatigue, moderate levels of psychological and physio-behavioral racial battle fatigue, and lower levels of psycho-behavioral racial battle fatigue (see Table 8).

Table 8 *Descriptive statistics (study 2)*

Variable	*M*	*SD*	*Min*	*Max*
General (GCC)	4.71	1.27	1.00	7.00
Academic (ACC)	4.77	.94	1.38	7.00
Racial (RCC)	4.47	1.23	1.00	7.00
Youth Inventory (CE)	1.38	.76	0.00	4.00
Physiological RBF (PHY)	1.88	.74	1.00	4.62
Psychological RBF (PSY)	3.13	.80	1.00	5.00
Physio-behavioral RBF (BPHY)	3.16	.80	1.00	5.00
Psycho-behavioral RBF (BPSY)	2.49	.94	1.00	5.00

Data was analyzed using hierarchical multiple regression analyses in SPSS. Multiple regression was appropriate because it can incorporate multiple independent categorial and continuous variables (Keith, 2014), and produces information on the incremental increase in a dependent variable for every one-point increase in the independent variable(s) (Aiken, West, & Reno, 1991; Cohen, Cohen, West, & Aiken, 2013). Furthermore, resilience literature suggests that multiple regression analyses are appropriate for the proposed model such that protective effects are tested using an interaction term of the risk (i.e., campus climate) and protective factor (i.e., civic engagement) (Fergus & Zimmerman, 2005; Zimmerman, 2013; Zimmerman et al., 2013).

Descriptive statistics were calculated for each main variable. The campus climate and civic engagement scales were grand mean centered prior to analysis. In each model, gender, year in school, and college (e.g., STEM or SBE) were entered in block one, general, academic, and racial campus climate were entered in block two, and civic engagement and the interaction terms (i.e., general campus climate by civic engagement; academic campus climate by civic engagement; and racial campus climate by civic engagement) in block three. Too few students who identified as gender non-binary or self-described, therefore the analyses focused on men and women only.

Physiological Racial Battle Fatigue

In the first hierarchical multiple regression model, I aimed to examine if general (GCC), academic (ACC), and racial campus climate (RCC) predicted physiological racial battle fatigue (PHY), and if the relationship between general, academic, and racial campus climate and physiological racial battle fatigue was moderated by civic engagement (CE; see Table 9).

Table 9 *Physiological racial battle fatigue predicted by general, academic, and racial campus climate, moderated by civic engagement (Model 1)*

Block	Regression Equation
1	$\hat{Y}_{phy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + \varepsilon$
2	$\hat{Y}_{phy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + \varepsilon$
3	$\hat{Y}_{phy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + b_{ce}X_{ce} + b_{ce\times gcc}X_{ce}X_{gcc} + b_{ce\times acc}X_{ce}X_{acc} + b_{ce\times rcc}X_{ce}X_{rcc} + \varepsilon$

In this hierarchical multiple regression model, Block 2 explained significantly more variance in physiological racial battle fatigue than Block 1[ΔF (3, 360) = 10.89, $p < .001$], and

Block 3 explained significantly more variance than Block 2 [ΔF (4, 356) = 2.48 p = .044] (see Table 10). In Block 1, gender, year, and college explained a significant proportion of the variance in physiological racial battle fatigue [R^2 = .04, F (3, 363) = 4.69, p =.003]. In Block 2, with the addition of the campus climate variables, the second block explained a significant proportion of the variance in physiological racial battle fatigue [R^2 = .12, F (6, 360) = 7.98, p < .001]. Lastly, in Block 3 after adding civic engagement and the interaction terms, the final block explained a significant proportion of the variance in physiological racial battle fatigue [R^2 = .14, F (10, 356) = 5.86, p < .001].

Gender positively predicted physiological racial battle fatigue (B= .27, p=.002) such that women were more likely to report higher levels of physiological racial battle fatigue. Academic campus climate (B= -.12, p=.037) and racial campus climate (B= -.13, p =.003) negatively predicted physiological racial battle fatigue. Controlling for all other predictors, individuals who reported more positive perceptions of academic campus climate reported lower physiological racial battle fatigue, such that for each 1 unit increase in academic campus climate, physiological racial battle fatigue decreased by .12. Also, individuals who reported more positive perceptions of racial campus climate reported less physiological racial battle fatigue, such that for each 1 unit increase in racial campus climate, physiological racial battle fatigue decreased by .13.

Civic engagement only moderated the relationship in the hypothesized direction between general campus climate and physiological racial battle fatigue (B= -.11, p =.019). Specifically, students who reported high levels of civic engagement had lower levels of physiological racial battle fatigue when their perceptions of general campus climate were more positive (see Figure 4). However, students who reported low levels of civic engagement had higher levels of

physiological racial battle fatigue when their perceptions of general campus climate were more positive.

Table 10 *Unstandardized coefficients and standard errors for hierarchical regression model predicting physiological racial battle fatigue*

	Physiological Racial Battle Fatigue $N = 367$					
	Block 1		*Block 2*		*Block 3*	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*
Gender	.28*	.09	.26*	.09	.27*	.09
Year	.06	.03	.01	.03	.01	.03
College	.05	.08	.09	.08	.09	.08
General			.01	.04	.02	.04
Academic			-.11*	.06	-.12*	.06
Racial			-.11*	.04	-.13*	.04
Civic					.04	.05
General*Civic					-.11*	.05
Academic*Civic					-.02	.7
Racial*Civic					.07	.04
R^2	.04		.12		.14	
ΔR^2	.04		.08		.02	
ΔF	4.67*		10.89*		2.48*	

*p<.05

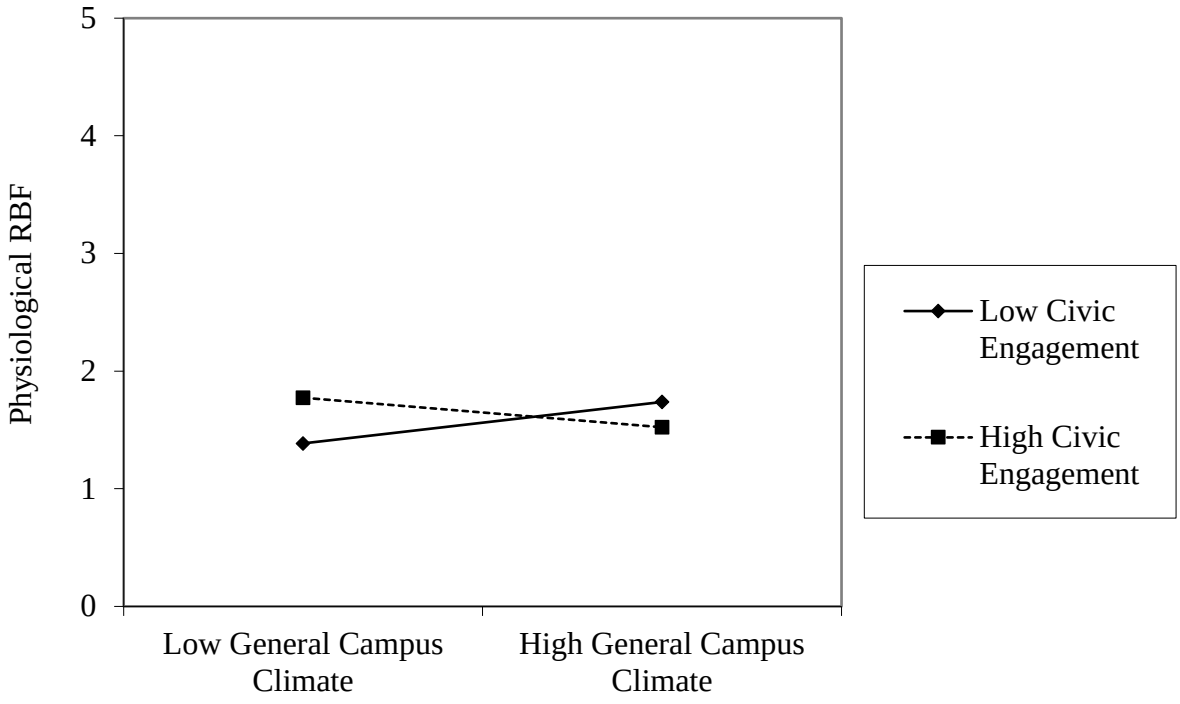

Figure 4 *Conditional variation of physiological racial battle fatigue across different levels of general campus climate and civic engagement*

Psychological Racial Battle Fatigue

In the second hierarchical multiple regression model, I aimed to examine if GCC, ACC, and RCC predicted psychological racial battle fatigue (PSY), and if the relationship between GCC, ACC, RCC and PSY was moderated by civic engagement (see Table 11).

Table 11 *Psychological racial battle fatigue predicted by general, academic, and racial campus climate, moderated by civic engagement (Model 2)*

Block	Regression Equation
1	$\hat{Y}_{psy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + \varepsilon$
2	$\hat{Y}_{psy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + \varepsilon$
3	$\hat{Y}_{psy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + b_{ce}X_{ce} + b_{ce\times gcc}X_{ce}X_{gcc} + b_{ce\times acc}X_{ce}X_{acc} + b_{ce\times rcc}X_{ce}X_{rcc} + \varepsilon$

In the hierarchical multiple regression model, Block 2 explained significantly more variance in psychological racial battle fatigue than Block 1 [ΔF (3, 360) = 53.30, $p < .001$], and Block 3 explained significantly more variance than Block 2 [ΔF (4, 356) = 2.58, $p = .037$] (see Table 12). In Block 1, gender, year, and college explained a significant proportion of the variance in psychological racial battle fatigue [$R^2 = .07$, F (3, 363) = 9.57, $p < .001$]. In Block 2, with the addition of the campus climate variables, the second block explained a significant proportion of the variance in psychological racial battle fatigue [$R^2 = .36$, F (6, 360) = 33.50, $p < .001$]. Lastly, in Block 3 after adding civic engagement and the interaction terms, the final block explained a significant proportion of the variance in psychological racial battle fatigue [$R^2 = .38$, F (10, 356) = 21.49, $p < .001$].

Gender positively predicted psychological racial battle fatigue (B= .26, p=.001) such that women were more likely to report higher levels of psychological racial battle fatigue. General campus climate (B= -.14, p<.001), academic campus climate (B= -.13, p=.009), and racial campus climate (B= -.16, p<.001) negatively predicted psychological racial battle fatigue. Controlling for all other predictors, individuals who reported more positive perceptions of

general campus climate reported lower psychological racial battle fatigue, such that for each 1 unit increase in general campus climate, psychological racial battle fatigue decreased by .14. Individuals who reported more positive perceptions of academic campus climate reported lower psychological racial battle fatigue, such that for each 1 unit increase in academic campus climate, psychological racial battle fatigue decreased by .13. Also, individuals who reported more positive perceptions of racial campus climate reported less psychological racial battle fatigue, such that for each 1 unit increase in racial campus climate, psychological racial battle fatigue decreased by .16.

Civic engagement moderated the relationship in the opposite direction between academic campus climate and psychological racial battle fatigue (B= .15, p =.025). Specifically, students who reported high levels of civic engagement had similar levels of psychological racial battle fatigue regardless of their perceptions of academic campus climate (see Figure 5). However, students who reported low levels of civic engagement had lower levels of psychological racial battle fatigue when their perceptions of academic campus climate were more positive. Civic engagement moderated the relationship in the hypothesized direction between racial campus climate (B= -.10, p =.011), and psychological racial battle fatigue. Both students who reported high and low civic engagement had lower levels of psychological racial battle fatigue when their perceptions of racial campus climate were more positive (see Figure 6). However, the negative effect of racial campus climate on psychological racial battle fatigue was stronger for students who reported high civic engagement.

Table 12 *Unstandardized coefficients and standard errors for hierarchical regression model predicting psychological racial battle fatigue*

	Psychological Racial Battle Fatigue					
	N = 367					
	Block 1		*Block 2*		*Block 3*	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*
Gender	.32*	.10	.27*	.08	.26*	.08
Year	.14*	.03	.04	.03	.05	.03
College	-.03	.08	.05	.07	.04	.07
General			-.13*	.04	-.14*	.04
Academic			-.13*	.05	-.13*	.05
Racial			-.18*	.04	-.16*	.04
Civic					.06	.05
General*Civic					-.02	.04
Academic*Civic					.15*	.06
Racial*Civic					-.10*	.04
R^2	.07		.36		.38	
ΔR^2	.29*		.29*		.02*	
ΔF	9.57*		53.30*		2.58*	

*p<.05

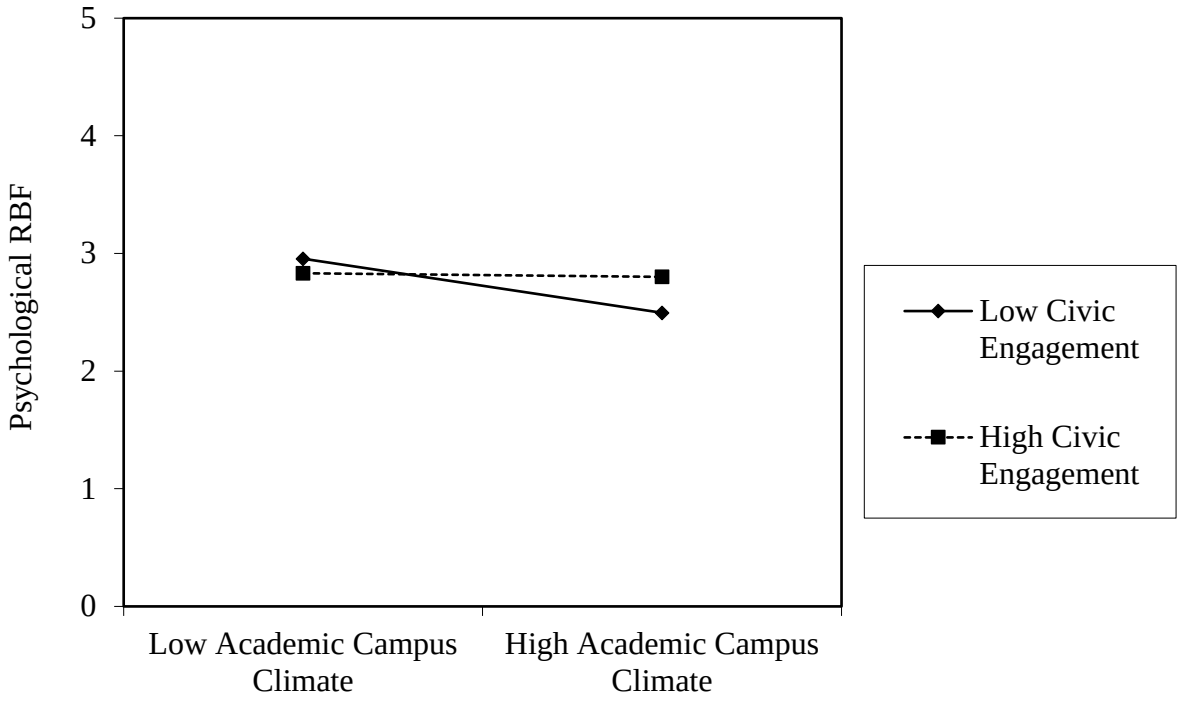

Figure 5 *Conditional variation of psychological racial battle fatigue across different levels of academic campus climate and civic engagement*

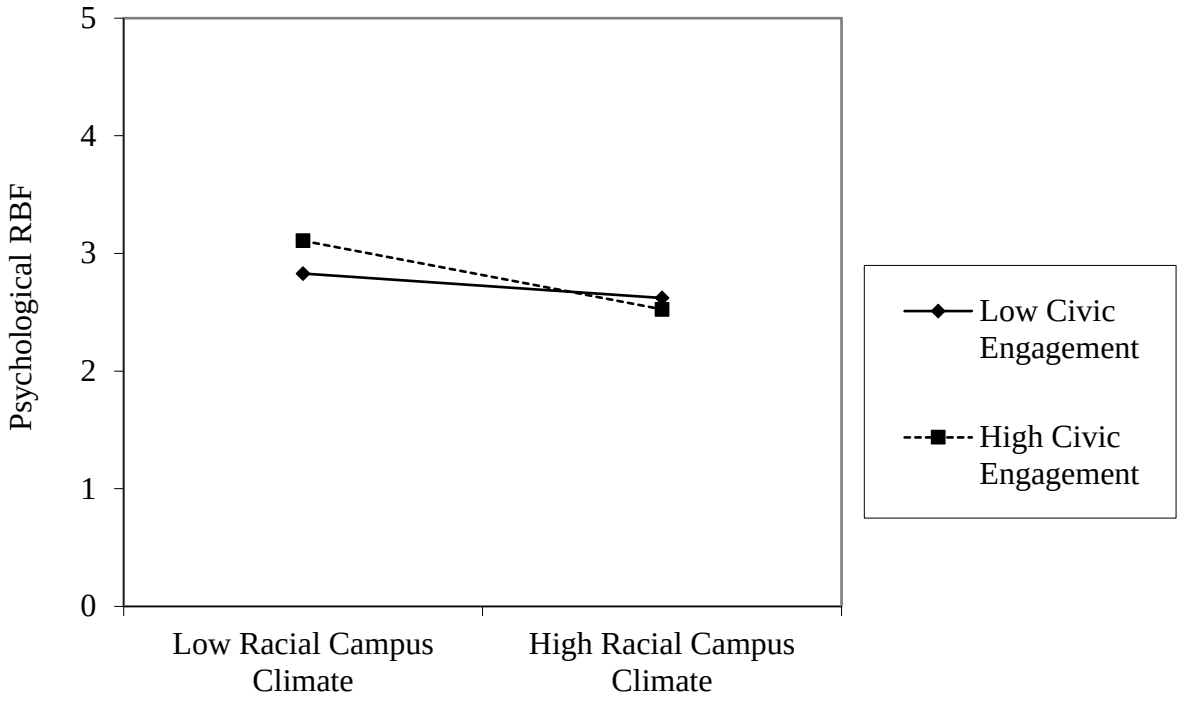

Figure 6 *Conditional variation of psychological racial battle fatigue across different levels of racial campus climate and civic engagement*

Physio-behavioral Racial Battle Fatigue

In the next hierarchical multiple regression model, I aimed to examine if GCC, ACC, and RCC predicted physio-behavioral racial battle fatigue (BPHY), and if the relationship between GCC, ACC, RCC and BPHY was moderated by civic engagement (see Table 13).

Table 13 *Physio-behavioral racial battle fatigue predicted by general, academic, and racial campus climate, moderated by civic engagement (Model 3)*

Block	Regression Equation
1	$\hat{Y}_{bphy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + \varepsilon$
2	$\hat{Y}_{bphy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + \varepsilon$
3	$\hat{Y}_{bphy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + b_{ce}X_{ce} + b_{ce\times gcc}X_{ce}X_{gcc} + b_{ce\times acc}X_{ce}X_{acc} + b_{ce\times rcc}X_{ce}X_{rcc} + \varepsilon$

In the hierarchical multiple regression model, Block 2 explained significantly more variance in physio-behavioral racial battle fatigue than Block 1 [ΔF (3, 360) = 8.60, $p < .001$]. Block 3 did not explain significantly more variance than Block 2 [ΔF (4, 356) = 1.80, $p = .128$] (see Table 14). In Block 1, gender, year, and college explained a significant proportion of the variance in physio-behavioral racial battle fatigue [$R^2 = .07$, F (3, 363) = 9.10, $p < .001$]. In Block 2, with the addition of the campus climate variables, the second block explained a significant proportion of the variance in physio-behavioral racial battle fatigue [$R^2 = .13$, F (6, 360) = 9.14, $p < .001$].

Because Block 3 did not explain significantly more variance than Block 2, Block 2 is used for interpretation. Gender positively predicted physio-behavioral racial battle fatigue (B= .44, p <.001) such that women were more likely to report higher levels of physio-behavioral racial battle fatigue. Academic campus climate negatively predicted physio-behavioral racial battle fatigue (B= -.17, p=.004). Controlling for all other predictors, individuals who reported more positive perceptions of academic campus climate reported lower physio-behavioral racial

battle fatigue, such that for each 1 unit increase in academic campus climate, physio-behavioral racial battle fatigue decreased by .17.

Table 14 *Unstandardized coefficients and standard errors for hierarchical regression model predicting physio-behavioral racial battle fatigue*

	Physio-behavioral Racial Battle Fatigue $N = 367$					
	Block 1		*Block 2*		*Block 3*	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*
Gender	.47*	.10	.44*	.09	.45*	.09
Year	.05	.03	.01	.03	.01	.03
College	.07	.08	.11	.08	.11	.08
General			-.03	.04	-.03	.05
Academic			-.17*	.06	-.16*	.06
Racial			-.02	.04	-.03	.05
Civic					.01	.06
General*Civic					-.13*	.05
Academic*Civic					.11	.07
Racial*Civic					.003	.05
R^2	.07		.13		.15	
ΔR^2	.07		.06		.02	
ΔF	9.10*		8.60*		1.80	

*p<.05

Psycho-behavioral Racial Battle Fatigue

In the final hierarchical multiple regression model, I aimed to examine if GCC, ACC, and RCC predicted psycho-behavioral racial battle fatigue (BPSY), and if the relationship between GCC, ACC, RCC and BPSY was moderated by civic engagement (see Table 15).

Table 15 *Psycho-behavioral racial battle fatigue predicted by general, academic, and racial campus climate, moderated by civic engagement (Model 4)*

Block	Regression Equation
1	$\hat{Y}_{bpsy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + \varepsilon$
2	$\hat{Y}_{bpsy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + \varepsilon$
3	$\hat{Y}_{bpsy} = a + b_{female}X_{female} + b_{year}X_{year} + b_{college}X_{college} + b_{gcc}X_{gcc} + b_{acc}X_{acc} + b_{rcc}X_{rcc} + b_{ce}X_{ce} + b_{ce\times gcc}X_{ce}X_{gcc} + b_{ce\times acc}X_{ce}X_{acc} + b_{ce\times rcc}X_{ce}X_{rcc} + \varepsilon$

In the hierarchical multiple regression model, Block 2 explained significantly more variance in psycho-behavioral racial battle fatigue than Block 1 [ΔF (3, 360) = 44.21, $p < .001$]. Block 3 did not explain significantly more variance than Block 2 [ΔF (4, 356) = 1.26, $p = .285$] (see Table 14). In Block 1, gender, year, and college explained a significant proportion of the variance in psycho-behavioral racial battle fatigue [$R^2 = .04$, F (3, 363) = 5.58, $p = .001$]. In Block 2, with the addition of the campus climate variables, the second block explained a significant proportion of the variance in psycho-behavioral racial battle fatigue [$R^2 = .30$, F (6, 360) = 25.89, $p < .001$].

Because Block 3 did not explain significantly more variance than Block 2, Block 2 is used for interpretation. Gender positively predicted psycho-behavioral racial battle fatigue (B= .26, $p = .01$) such that women were more likely to report higher levels of psycho-behavioral racial battle fatigue. General campus climate negatively predicted psycho-behavioral racial battle fatigue (B= -.12, p=.011). Controlling for all other predictors, individuals who reported more positive perceptions of academic campus climate reported lower physio-behavioral racial battle fatigue, such that for each 1 unit increase in academic campus climate, psycho-behavioral racial

battle fatigue decreased by .12. Academic campus climate negatively predicted psycho-behavioral racial battle fatigue (B= -.33, p < .001). Controlling for all other predictors, individuals who reported more positive perceptions of academic campus climate reported lower psycho-behavioral racial battle fatigue, such that for each 1 unit increase in academic campus climate, psycho-behavioral racial battle fatigue decreased by .33.

Table 16 *Unstandardized coefficients and standard errors for hierarchical regression model predicting psycho-behavioral racial battle fatigue*

	Psycho-behavioral Racial Battle Fatigue					
	$N = 367$					
	Block 1		*Block 2*		*Block 3*	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*
Gender	.33*	.11	.26*	.10	.26*	.10
Year	.11*	.04	.02	.03	.03	.04
College	-.10	.10	.01	.08	-.01	.09
General			-.12*	.05	-.12*	.05
Academic			-.33*	.06	-.34*	.06
Racial			-.07	.05	-.06	.05
Civic					.09	.06
General*Civic					-.07	.05
Academic*Civic					.10	.08
Racial*Civic					-.01	.05
R^2	.04		.30		.31	
ΔR^2	.04*		.26*		.01	
ΔF	5.58*		44.21*		1.26	

*p<.05

DISCUSSION

Racial battle fatigue names and highlights the very real stress responses experienced by people of color that are evoked by race-related stressors (e.g. negative campus climate or racial micro- and macroaggressions; Johnson et al., 2014; Smith et al., 2016). For college students of color specifically, race (or ethnicity) related stressors can negatively impact students' health and well-being as well as students' academic adjustment, and retention (Johnson et al., 2014; Neville et al., 2004; Shahid et al., 2018; Smith et al., 2007). The current research extended existing literature on racial battle fatigue among Black college students by exploring the relationship between environmental risks – here, multiple forms of campus climate (i.e., general, academic, and racial) – and racial battle fatigue via quantitative measurement. Moreover, the current study's examination of racial battle fatigue differed from the original framework (Smith, et al., 2011) in that it examines four racial battle fatigue stress responses: physiological, psychological, physio-behavioral, and psycho-behavioral. To add, the current research explored civic engagement as a potential protective factor that moderates the relationship between the school environment (i.e., campus climate) and race related stress responses (i.e., racial battle fatigue). Results were complex and depended in part on the types of campus climate and racial battle fatigue explored. In line with Fergus and Zimmerman's (2005) protective-reactive protective factor model, high levels of civic engagement buffered the effects of negative perceptions of general campus climate on Black college students' physiological racial battle fatigue. Similarly, high levels of civic engagement buffered the effects of negative perceptions of racial campus climate on Black college students' psychological racial battle fatigue. However, in contrast to Fergus and Zimmerman's (2005) protective-reactive protective factor model, high levels of civic engagement did not buffer the effects of negative perceptions of academic campus climate on

Black college students' psychological racial battle fatigue for students. Given the limited research on racial battle fatigue among Black college students more generally, many of the mechanisms presented to explain the main effect and moderation findings are speculative and therefore warrant additional research and theory building.

Summary of Findings

Though a hypothesized relationship between gender and racial battle fatigue was not explored, gender significantly predicted each type of racial battle fatigue: physiological, psychological, physio-behavioral, and psycho-behavioral such that women reported higher levels of racial battle fatigue (see Table 17). This finding is important considering much of the past research on racial battle fatigue has focused on Black male students (Hotchkins & Danley, 2015; Smith et al., 2007; Smith et al., 2016) and the dearth of research on racial battle fatigue among Black female students (Hotchkins, 2017).

General campus climate negatively predicted psychological and psycho-behavioral racial battle fatigue. That is, more positive perceptions of general campus climate predicted lower levels of psychological and psycho-behavioral racial battle fatigue. Considering the scant research examining these relationships, potential mechanisms for explaining these associations are speculative. However, psychological sense of community may be one potential explanation for these findings. According to McMillan & Chavis (1986), sense of community involves the "feeling of belonging or of sharing a sense of personal relatedness…a sense of mattering, of making a difference to a group and of the group mattering to its members… feeling that members' needs will be met by the resources received through their membership in the group… the commitment and belief that members have shared and will share history, common places, time together, and similar experiences" (p. 5). More positive perceptions of general campus

climate may be associated with an increased sense of community among college students. For instance, Cheng (2004) found that sense of community was positively associated with aspects of general campus climate such as feeling cared about, valued, and accepted as part of the community, but negatively associated with feeling lonely on campus. In contrast, for Black college students, an unwelcoming, toxic, and hostile campus environment might communicate that students do not belong or are outsiders in the university community (Franklin, 2016), diminishing their sense of community. Research has found that Black college student leaders experience unwelcoming, toxic, and hostile campus environments and racial battle fatigue, specifically psychological racial battle fatigue (Hotchkins 2017; Hotchkins & Danley, 2015). Thus, if Black college students report more negative perceptions of general campus climate, they may report lower psychological sense of community and therefore demonstrate higher psychological and psycho-behavioral racial battle fatigue. Conversely, if Black college students report more positive perceptions of general campus climate, they may report higher psychological sense of community and therefore demonstrate lower psychological and psycho-behavioral racial battle fatigue. General campus climate did not predict physiological or physio-behavioral racial battle fatigue.

Academic campus climate negatively predicted each type of racial battle fatigue. That is, more positive perceptions of academic campus climate predicted lower levels of physiological, psychological, physio-behavioral, psycho-behavioral racial battle fatigue. Again, considering the scant research examining these relationships, mechanisms for explaining the associations are speculative. However, one potential explanation for this finding is the student identity salience. On campus, the participants assume the primary identity of a student. While pursuing postsecondary degrees, students consistently interface the academic campus climate. Immersion

in the academic campus climate may make students more susceptible to experiencing multiple forms of racial battle fatigue. Therefore, if Black college students report more positive perceptions of academic campus climate and high student identity salience, they may report lower physiological, psychological, physio-behavioral, and psycho-behavioral racial battle fatigue. Also, if Black college students report more negative perceptions of academic campus climate and high student identity salience, they may report higher physiological, psychological, physio-behavioral, and psycho-behavioral racial battle fatigue.

Racial campus climate negatively predicted physiological and psychological racial battle fatigue. More positive perceptions of racial campus climate predicted lower levels of physiological and psychological racial battle fatigue. One potential explanation of the findings is racial microaggressions. The racial battle fatigue framework centralizes racial microaggressions and is defined as the "cumulative psychosocial-physiological impact of racial micro- and macroaggressions on racially marginalized targets" (Smith et al., 2016, p. 1192). Racial microaggressions can contribute to the racial campus climate for Black college students. That is, racial microaggressions can be embedded in the racial campus climate, and contribute to facilitating an unsupportive, hostile, and distressing campus climate for students of color (Johnson-Ahorlu, 2012). Studies have found that Black male college students who had more negative perceptions of racial campus climate reported experiencing various racial microaggressions (e.g., hyper surveillance, anti-intellectual stereotypes) and physiological and psychological racial battle fatigue (Smith et al., 2007; Smith et al., 2016). If Black college students report more negative perceptions of racial campus climate, they may also report experiencing more racial microaggressions and therefore report higher physiological and

psychological racial battle fatigue. Racial campus climate did not predict physio-behavioral or psycho-behavioral racial battel fatigue.

The findings revealed differential moderation and conditional variation between each form of campus climate and physiological and psychological racial battle fatigue. There was no moderation between each form of campus climate and physio-behavioral and psycho-behavioral racial battle fatigue. However, civic engagement moderated the relationship between general campus climate and physiological racial battle fatigue. Students who reported more positive perceptions of general campus climate and high levels of civic engagement had lower levels of physiological racial battle fatigue as compared to students who reported low levels of civic engagement. Civic engagement may have benefits for physical health. For example, some have investigated the relationship between civic engagement and physical health, often focusing on older or late-life adult populations. Specifically, civic engagement (here, volunteering), is associated with improved self-rated health and lower functional dependency (presence and severity of functional impairment) among adults aged 60 and over (Tang, 2009). Additionally, civic engagement has been used as an intervention strategy to improve physical health among Black women (Brown et al., 2017). While some studies speculate psychosocial factors (e.g., social support) may contribute to this association (e.g., Brown et al., 2017), the mechanisms that link civic engagement to physical health remain unclear. Perhaps for Black college students' civic engagement buffers the impact of negative general campus climate on physiological racial battle fatigue among Black college students by way of improving social support. Civic engagement did not moderate the relationship between general campus climate and psychological, physio-behavioral, or psycho-behavioral racial battle fatigue.

Civic engagement moderated the relationship between academic campus climate and psychological racial battle fatigue, but this moderation was opposite of the hypothesized direction. The findings revealed conditional variation such that the negative association between academic campus climate and psychological racial battle fatigue only occurred for students who reported lower levels of civic engagement. That is, students who reported high levels of civic engagement had similar levels of psychological racial battle fatigue regardless of their perceptions of academic campus climate whereas students who reported low levels of civic engagement had lower levels of psychological racial battle fatigue when their perceptions of academic campus climate were more positive. This finding was unexpected and warrants additional research to determine if this finding replicates among Black college students in other settings. Here, it may be useful to parse civic engagement activities (political, community, helping and passive activities) to better understand the moderation between academic campus climate and psychological racial battle fatigue. Although civic engagement did not moderate the relationship between academic campus climate and physiological, physio-behavioral, or psycho-behavioral racial battle fatigue, further investigation may be especially important considering the main effect findings between academic campus climate and racial battle fatigue and sparse literature on academic campus climate more broadly.

Civic engagement also moderated the relationship between racial campus climate and psychological racial battle fatigue. One potential explanation of this findings is psychosocial well-being. Studies have shown that higher civic engagement is associated with higher social and psychological well-being (Fink, 2014; Flanagan & Bundick, 2011). Moreover, literature suggests civic engagement is linked to psychosocial well-being via mechanisms like as a decrease in stress hormones from engaging in altruistic behavior, an expanded worldview (e.g., power,

privilege, and gratitude), and a sense of belonging (Flanagan & Bundick, 2011). Perhaps students who are civically engaged have higher psychosocial well-being and therefore report lesser psychological racial battle fatigue. Civic engagement did not moderate the relationship between racial campus climate and physiological, physio-behavioral, or psycho-behavioral racial battle fatigue.

Table 17 *Racial battle fatigue summary of findings*

	Racial Battle Fatigue $N = 367$							
	Physiological		Psychological		Physio-Behavioral		Psycho-Behavioral	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Gender	.27*	.09	.26*	.08	.44*	.09	.26*	.10
Year	.01	.03	.05	.03	.01	.03	.02	.03
College	.09	.08	.04	.07	.11	.08	.01	.08
General	.02	.04	-.14*	.04	-.03	.04	-.12*	.05
Academic	-.12*	.06	-.13*	.05	-.17*	.06	-.33*	.06
Racial	-.13*	.04	-.16*	.04	-.02	.04	-.07	.05
Civic	.04	.05	.06	.05				
General*Civic	-.11*	.05	-.02	.04				
Academic*Civic	-.02	.7	.15*	.06				
Racial*Civic	.07	.04	-.10*	.04				
R^2	.14		.38		.13		.30	
ΔR^2	.02		.02		.06		.26	
ΔF	2.48*		2.58*		8.60*		44.21*	

*p<.05

Limitations and Future Directions

Like Chapter 2, these findings should be interpreted considering some limitations. The study did not representatively sample students who began undergraduate studies and departed who may differ from students who remained enrolled. Next, the sample was drawn from one university but general, academic, and racial campus climate likely vary by institution. Future students might extend this research by sampling students from multiple universities, including

those who delayed or discontinued studies. The racial battle fatigue scale was modified and not previously validated with Black college students. The modified scale used in this study yielded a four-factor structure of racial battle fatigue stress responses (physiological, psychological, physio-behavioral, and psycho-behavioral) that varied from the original scale (physiological, psychological, and behavioral). Future studies might refine the racial battle fatigue measure for Black college students. Finally, the current study used an index of civic engagement and did not explore the moderating relationship of specific domains of civic engagement. Future studies might extend this research by specifying domains of civic engagement (e.g., community or passive) that act as a protective factor among Black college students.

Implications and Conclusions

General, academic, and racial campus climate are three of various forms of campus climate (e.g., other examples are gender campus climate and campus climate for sexual violence) that may impact Black college students' racial battle fatigue. Overall, gender predicted racial battle fatigue where women reported higher levels of racial battle fatigue. Interventions and initiatives aimed at reducing racial battle fatigue among Black college students should consider gender specific adaptations as Black women report experiencing more racial battle fatigue. Example interventions and initiatives that center stress reduction while acknowledging and respecting collective and individual experiences among Black college women might include placemaking initiatives, fitness classes, guided meditation courses, emotional resiliency workshops, or counseling support groups with women facilitators of color.

The findings of the current study provide support of the negative relationship between campus climate and racial battle fatigue among Black college students. Generally, more positive perceptions of campus climate predicted lower levels of racial battle fatigue. However, this

varied by form of campus climate. More positive perceptions of general campus climate predicted lower levels of psychological and psycho-behavioral racial battle fatigue. More positive perceptions of academic campus climate predicted lower levels of physiological, psychological, physio-behavioral, psycho-behavioral racial battle fatigue. Lastly, more positive perceptions of racial campus climate predicted lower levels of physiological and psychological racial battle fatigue. Considering academic campus climate predicted each form of racial battle fatigue, universities and university constituents could focus on academic campus climate as the first point intervention (or intervention of the greatest magnitude) to reduce racial battle fatigue among Black college students.

Taken together, implications for future research and practice could aim to improve general, academic, campus climate and subsequently reduce physiological, psychological, physio-behavioral, psycho-behavioral racial battle fatigue among Black college students. Implications to improve general and academic campus climate could mirror those outlined in Chapter 2. To improve racial campus climate the university might consider further supporting campus resources (e.g., hiring and retention of faculty and staff of color, valuing student groups, protecting 'safe spaces', and providing sponsorships, grants, and scholarships) to support Black college students and encourage intercultural interactions (e.g., multicultural centers). Faculty might consider more intentionally emphasizing respect for racial diversity via course materials and activities. Both faculty and student affairs professionals could consider participating in cultural competency and antibias trainings, responding promptly and appropriately to instances of racial insensitivity, and supporting and promoting events and initiatives that uplift racially and ethnically minoritized university constituents. Students might consider continued engagement in interracial interactions and reporting instances of racial insensitivity, intimidation, or bias

incidents to faculty, staff, and/or administration. Concurrently, students might consider adaptive coping strategies for racial battle fatigue such as maintaining a social support network, utilizing counseling services, or engaging in social justice efforts.

Findings of the current study partially support the moderating (protective) effect of civic engagement. Civic engagement moderated the relationship between general campus climate and physiological racial battle fatigue, and racial campus climate and psychological racial battle fatigue. In line with resilience theory and the protective-reactive model, civic engagement acted as buffer that reduced the effects of risk (more negative perceptions of campus climate). Counter to the hypothesized relationship, civic engagement positively moderated the relationship between academic campus climate and psychological racial battle fatigue such that higher levels of academic campus climate and civic engagement predicted higher psychological racial battle fatigue. After exploring conditional variations, results indicated that students who reported more positive perceptions of academic campus climate and low civic engagement reported lower levels of psychological racial battle fatigue. These findings suggest that civic engagement is not protective in all cases. University faculty, staff, students, and affiliates can reduce racial battle fatigue among Black college students by way of promoting the usefulness of or personal involvement in civic engagement and service learning with foci on university-community relationships (Krings, Austic, Gutierrez, Dirksen, 2015; Myers et al., 2018). Civic engagement activities that focus on resisting and reducing net vulnerability and stress engagement for Black college students and their communities could also be promoted (Hope & Spencer, 2017). However, considering that civic engagement did not have a protective effect between academic climate and psychological racial battle fatigue, it is necessary to use caution when promoting

civic engagement interventions. Stakeholders might emphasize the importance of balancing civic engagement activities with other responsibilities like coursework and personal wellness.

Prior research has examined campus climate as a setting that perpetuates racial battle fatigue among Black college students. The current study examined the relationship between general, academic, and racial campus climate and four types of racial battle fatigue: physiological, psychological, physio-behavioral, and psycho-behavioral. Findings revealed differential relationships between each form of campus climate and the four types of racial battle fatigue. These findings lend support for continued research in the area of campus climate and racial battle fatigue, especially using quantitative measures. The current study also examined civic engagement as a protective factor that moderated the relationship between campus climate and racial battle fatigue. The findings also revealed differential relationships between campus climate, civic engagement, and racial battle fatigue. Specifically, civic engagement moderated the relationship between 1) general campus climate and physiological racial battle fatigue, 2) academic campus climate and psychological racial battle fatigue, and 3) racial campus climate and psychological racial battle fatigue. Future research and practice will benefit from considering the role of civic engagement in Black college students' racial battle fatigue as it can buffer environmental risk and reduce race-related stress responses.

CHAPTER 4: CONCLUSION

Academic resilience provides a strengths-based framework for examining personal and contextual factors that impact the academic success of Black college students (Cabrera & Padilla, 2004; O'Connor, 2002). Though Black college students may demonstrate academic resilience, negative outcomes such as race-related stress responses associated with racial battle fatigue can co-exist with academic resilience. The present study applied resilience theory and hierarchical multiple regression to examine the relationships between general, academic, and racial campus climate (environmental risk) and two outcomes – academic resilience (a positive outcome) and racial battle fatigue (a negative outcome) – among Black college students attending a historically and predominantly white institution (PWI). Additionally, the current study explored civic engagement as a potential protective factor that moderated the relationship between campus climate, academic resilience, and racial battle fatigue. The results of these studies advance interdisciplinary research and practice such as community psychology, higher education, and student affairs by using a resilience theory framework to extend existing research both topically and methodologically among Black college students and offering future directions for research and practice. Together these studies develop a better understanding of the relationship between the campus environment and student outcomes as well as factors that may facilitate positive student outcomes among Black college students.

Contributions of the Dissertation

The present study contributes to research in the area of campus climate. Campus climate is a phenomenon that encompasses and impacts the attitudes, behaviors, and standards of the university community including those of Black college students. Although limited research

explores campus climate and academic resilience among Black college students, some studies have investigated the relationship between campus climate and academic outcomes among Black college students such as academic performance, graduation rates, grade point average, and persistence. However, these studies tend to focus on campus climate broadly or racial campus climate specifically (Brown et al., 2005; Cabrera et al., 1999; Fisher, 2010; Harper, 2013; Johnson-Ahorlu, 2013; Love, 2009; Martin et al., 2017; Solorzano et al., 2000; Strayhorn, 2013). Similarly, studies that investigate the relationship between campus climate and racial battle fatigue focus heavily on racial campus climate (Smith et al., 2007; Smith et al., 2016), or campus climate broadly (Hotchkins & Danley, 2015). Building upon existing literature, the present study investigates three forms of campus climate (i.e., general, academic, and racial campus climate), and their associations with academic resilience and racial battle fatigue. Extending existing studies to include an examination of academic campus climate was particularly important as students cannot disengage from the academic campus climate while in pursuit of postsecondary degrees. Indeed, academic campus climate was associated with academic resilience and each form of racial battle fatigue in the current study. Exploring academic campus climate also provides a more nuanced view of students' perceptions of campus climate including their experiences with instructors, peers, and academic advisors.

This study also contributes to academic resilience research – the first outcome explored in the study. Academic resilience has often been measured using indicators of students' academic achievement (e.g., Cappella & Weinstein, 2001; Cunningham & Swanson, 2010; and Gayles 2005), academic confidence (Catterrall, 1998), academic aspirations (Cunningham & Swanson, 2010; Griffin & Allen, 2006), or a combination of measures (Braddock et al., 1991; Hawkins, & Mulkey, 2005). More recent research has developed academic resilience scales, but these studies

have primarily sampled undocumented immigrant Latinx students in the U.S. (e.g., Suárez-Orozco et al., 2015), or non-U.S. students (e.g., Cassidy, 2016; Martin & Marsh, 2006). Academic resilience scales have not yet been validated with Black student populations. The current study extends existing research by investigating academic resilience among Black college students and using an academic resilience measure developed from college readiness, persistence, and completion literature (Suárez-Orozco et al., 2015). The scale indicated acceptable internal consistency with a Black college student population with Cronbach's alpha of .754 though scale reliability could be improved.

Next, this study contributes to research around racial battle fatigue – the second outcome under investigation. Much of the research exploring the relationship between campus climate and racial battle fatigue uses qualitative research methods. These studies provide a rich understanding of students' experience of racial battle fatigue and inform the present study which used quantitative exploratory factor analyses and hierarchical regression analyses. The quantitative approach used in this study allowed for the examination of racial battle fatigue with a large sample of Black college students that was less time and resource intensive than qualitative research methods such as individual and focus group interviews. Exploratory factor analyses afforded the opportunity to adapt the racial battle fatigue measure which resulted in a four-factor model that deviated from the three-factor racial battle fatigue stress responses outlined original framework (Smith et al., 2011). Next, hierarchical regression analyses afforded the opportunity to investigate the relationship between multiple forms of campus climate and each type of racial battle fatigue as well as consider the effect of civic engagement.

This study also contributes to the civic engagement literature; civic engagement was explored as a protective factor for students experiencing negative campus climate in the present

study. Black college students have actively participated in civic engagement especially during the civil rights era (Gasman et al., 2015). Additionally, colleges and universities promote civic engagement as a learning tool to engage students, expand their worldviews, and promote civic and social responsibility (Bowman, 2011). Prior literature has found that negative campus climate motivated students to become civically engaged (Leath & Chavous, 2017; Logan et al., 2017), and civic engagement is related to Black college students' resilience and stress (Daniels et al., 2015; Hope, 2015; Richards et al., 2016). Still, few studies, if any, investigate civic engagement as a protective factor that impacts Black college students' academic resilience and racial battle fatigue. The current study extends existing research by conceptualizing civic engagement as a protective factor that moderates the relationship between the campus climate variables and both academic resilience and racial battle fatigue. Fergus and Zimmerman's (2005) protective-reactive model was used to interpret the moderation where protective factors reduce the negative effects of risk (e.g., negative campus climate). The current study found that civic engagement was not universally protective and depended on the form of campus climate (general, academic, or racial campus climate) and the outcome (academic resilience, physiological, psychological, physio-behavioral, or psycho-behavioral racial battle fatigue). Of note, one finding was counterintuitive such that civic engagement positively moderated the relationship between academic campus climate.

The current study adopts a strengths-based perspective in the investigation of campus climate, academic resilience, and racial battle fatigue, as well as civic engagement as a potential protective factor that facilitates positive outcomes among Black college students. Findings often show that more negative perceptions of campus climate are related to more negative academic outcomes (e.g., grade performance and graduation rates) and more racial battle fatigue (Fisher,

2010; Hotchkins, 2017; Hotchkins & Danley, 2015; Smith et al., 2007; Smith et al., 2016) though studies support that more positive perceptions of campus climate predict more positive academic outcomes such as retention (Love, 2009). In this study, more positive perceptions of campus climate predicted more positive outcomes including higher academic resilience and lower racial battle fatigue, but one finding was counterintuitive. Specifically, racial campus climate negatively predicted academic resilience such that more positive perceptions of racial campus climate predicted lower levels of academic resilience.

Future Research

While the current study fills existing gaps in the literature, there are several findings that warrant additional research and theory building. Adopting longitudinal designs to examine these outcomes across students' matriculation may be helpful as academic resilience is a developmental concept and racial battle fatigue represents cumulative stressors. In addition, exploring exogenous variables may strengthen research in this area. For example, considering the sample included Black college students only, it may be useful for future research to explore racial identity salience or the "extent to which one's race is a relevant part of one's self-concept at a particular moment or in a particular situation" (Sellers, Smith, Shelton, Rowley, & Chavous, 1998, p. 24). Students' racial identity salience could impact their perceptions of campus climate (especially racial campus climate) and subsequent academic resilience or racial battle fatigue. Students with high racial identity salience could be more likely to associate perceptions of campus climate with their experience as a racially minoritized student. For example, a student with high racial identity salience could associate feeling left out of things at the university (general campus climate), being interrupted or ignored when trying to speak up in class (academic campus climate), or perceiving a tense interracial climate on campus (racial campus

climate) with their identity as a Black student and therefore report lower academic resilience and higher racial battle fatigue. Other exogenous variables worth considering are motivation and psychosocial well-being. Both motivation and psychosocial well-being have been associated with civic engagement (Borijan, 2018; Fink, 2014; Flanagan & Bundick, 2011; Suarez-Orozco et al., 2015) and may be potential mechanisms by which civic engagement serves as a protective factor for students.

Furthermore, in consideration of the null and counterintuitive findings future research could consider different measures to test these relationships. Specifically, using more nuanced racial campus climate measures such as the Campus Racial Climate for African Americans Scale (Thomas, 2017) may aid in exploring the counterintuitive relationship between racial campus climate and academic resilience (i.e., racial campus climate negatively predicted academic resilience). Developing and validating an academic resilience measure may improve the reliability of the academic resilience measure among Black college students. Refining the racial battle fatigue measure for Black college students may offer additional insights to the adapted racial battle fatigue measure as it deviates from the original framework. Next, using a domain specific (e.g., political) rather than a composite civic engagement measure may clarify the effect of civic engagement between more specific forms of campus climate like academic or racial campus climate and student outcomes.

Future research could also consider using an intersectionality perspective or framework (Bowleg, 2012; Jordan-Zachery, 2007; Shields, 2008), or examining the intersection of race and gender specifically, to explore campus climate, academic resilience, racial battle fatigue, and civic engagement among Black college students. In this study, gender was entered into the analyses as a control because academic resilience has been shown to vary by gender among

Black students (McGee & Martin, 2011; Ricketts, Engelhard, & Chang, 2017), and the emphasis on Black male students in the racial battle fatigue literature (Hotchkins & Danley, 2015; Smith et al., 2007; Smith et al., 2016). Though gender did not significantly predict academic resilience, gender significantly predicted each type of racial battle fatigue: physiological, psychological, physio-behavioral, and psycho-behavioral such that women reported higher levels of racial battle fatigue. Adopting an intersectionality perspective or framework could certainly provide a more nuanced view of students' experiences of racial battle fatigue. An intersectionality perspective or framework may also yield insight for exploring students' adaptations or coping strategies to reduce racial battle fatigue and developing targeted campus interventions to support students' development. Using an intersectionality perspective or framework may also be useful to understand students' participation in types of civic engagement activities. Moreover, an intersectionality framework can aid in exploring multiple gender identities such as nonbinary which were not included in this study.

Future practice

In the wake of Title IX enforcement, many post-secondary institutions have begun assessing campus climate, though primarily focusing on issues of sexual assault and misconduct and dating and domestic violence (Department of Justice Office on Violence Against Women, 2016). Student affairs professionals and academic administrators are front-line practitioners and administrators who provide student services that can span multiple areas like academic learning and development, culture and identity, and health and wellness. The findings of the current study highlight the importance of examining multiple forms of campus climate. Student affairs professionals and academic administrators may be in unique position to impact Black college students' academic resilience and racial battle fatigue by way of contributing to improving

general, academic, and racial campus climate. For example, to improve general campus climate student affairs professionals and academic administrators might aim to highlight that students from various identities are valued, the connectedness of university constituents, and the importance of maintaining an authentically friendly, welcoming university atmosphere. Integrating and promoting the use of support services (e.g., meeting or space, advising, tutoring, computer labs, eateries, student events) in areas where students often congregate like residence halls and student unions could contribute to this effort. Services focused on academic learning and development such as academic advising, tutoring, and help rooms might be leveraged to improve academic campus climate. It is important that such services maintain a strengths-based approach to avoid pathologizing Black college students. Lastly, student affairs professionals and academic administrators might leverage student services related to culture and identity such as racial and other identity specific resource centers as safe, supportive, and informative spaces to improve racial campus climate.

Student affairs professionals and academic administrators should earnestly consider promoting civic engagement among Black college students as a potential protective factor. Because civic engagement can involve students' participation in a protest or demonstration (i.e., a political activity), student affairs professionals and academic administrators may be inclined to manage student's civic engagement. However, it is important to note that civic engagement can include a range of other political activities such as running for a position in student government as well as community (e.g., participating in a church-connected group), helping (e.g., volunteering at a school event or function), and passive (e.g. giving money to a cause) activities. These activities can differ from student activism or service learning. Research has suggested that civic engagement can improve psychosocial well-being by way of decreasing stress hormones

from engaging in altruistic behavior, developing an expanded worldview (e.g., power, privilege, and gratitude), and developing a sense of belonging (Flanagan & Bundick, 2011). Therefore, promoting civic engagement may be especially important to consider in efforts to support Black college students and other minoritized or marginalized student communities.

Closing

This scholarship aimed to advance knowledge about how campus climate impacts Black college students' academic outcomes and well-being, and the significance of civic engagement for facilitating positive outcomes (e.g., higher academic resilience and lower racial battle fatigue). However, findings revealed differential relationships between each form of campus climate and both outcomes (academic resilience and racial battle fatigue). Additionally, the findings revealed differential moderation and conditional variation of civic engagement between each form of campus climate and both outcomes. Both practice informed research and research informed practice could contribute to improving perceptions of campus climate, promoting academic resilience, and reducing racial battle fatigue among Black college students. These findings have implications for informing how university constituents (e.g., administrators, researchers, practitioners, staff, and students) can continue supporting Black college students as they navigate the college environment to advance their academic goals and support their well-being such as: continuation of improving campus climate (Griffin 2017), use of intergroup dialogue (Krings et al., 2015), promotion of civic engagement or service learning (Krings et al., 2015; Myers et al., 2018), solidarity action (Williams, 1999), and promotion of cultural competence training in tandem with anti-bias training. Black college students demonstrate impressive acumen for navigating environmental risks in the college environment and yet effectuating positive outcomes, but this is not without fault. As Black college students continue

to strive toward ‘living their best lives,’ institutional support for Black college students can significantly contribute to students’ academic success (i.e., improved academic resilience) and well-being (i.e., reduced racial battle fatigue).

APPENDICES

APPENDIX A

IRB Approval

Office of Regulatory Affairs
Human Research
Protection Program

4000 Collins Road
Suite 136
Lansing, MI 48910

517-355-2180
Fax: 517-432-4503
Email: irb@msu.edu
www.hrpp.msu.edu

EXEMPT DETERMINATION

May 24, 2018

To: Jennifer Renee Watling Neal
Re: MSU Study ID: STUDY00000937
Principal Investigator: Jennifer Renee Watling Neal
Category: Exempt 2
Exempt Determination Date: 5/24/2018
Title: Predictors of Academic Resilience and Racial Battle Fatigue among Black

College Students

This project has been determined to be exempt under 45 CFR 46.101(b) 2.

Principal Investigator Responsibilities: The Principal Investigator assumes the responsibilities for the protection of human subjects in this project as outlined in Human Research Protection Program (HRPP) Manual Section 8-1, Exemptions.

Continuing Review: Exempt projects do not need to be renewed.

Modifications: In general, investigators are not required to submit changes to the Michigan State University (MSU) Institutional Review Board (IRB) once a research study is designated as exempt as long as those changes do not affect the exempt category or criteria for exempt determination (changing from exempt status to expedited or full review, changing exempt category) or that may substantially

change the focus of the research study such as a change in hypothesis or study design. See HRPP Manual Section 8-1, Exemptions, for examples. If the project is modified to add additional sites for the research, please note that you may not begin the research at those sites until you receive the appropriate approvals/permissions from the sites.

Change in Funding: If new external funding is obtained for an active human research project that had been determined exempt, a new initial IRB submission will be required, with limited exceptions.

Reportable Events: If issues should arise during the conduct of the research, such as unanticipated problems that may involve risks to subjects or others, or any problem that may increase the risk to the human subjects and change the category of review, notify the IRB office promptly. Any complaints from participants that may change the level of review from exempt to expedited or full review must be reported to the IRB. Please report new information through the project's workspace and contact the IRB office with any urgent events. Please visit the Human Research Protection Program (HRPP) website to obtain more information, including reporting timelines.
Personnel Changes: After determination of the exempt status, the PI is responsible for maintaining records of personnel changes and appropriate training. The PI is not required to notify the IRB of personnel changes on exempt research. However, he or she may wish to submit personnel changes to the IRB for recordkeeping purposes (e.g. communication with the Graduate School) and may submit such requests by submitting a Modification request. If there is a change in PI, the new PI must confirm acceptance of the PI Assurance form and the previous PI must submit the Supplemental Form to Change the Principal Investigator with the Modification request (http://hrpp.msu.edu/forms).
Closure: Investigators are not required to notify the IRB when the research study is complete. However, the PI can choose to notify the IRB when the project is complete and is especially recommended when the PI leaves the university.
For More Information: See HRPP Manual, including Section 8-1, Exemptions (available at https://hrpp.msu.edu/msu-hrpp-manual-table-contents-expanded).

Contact Information: If we can be of further assistance or if you have questions, please contact us at 517-355-2180 or via email at IRB@ora.msu.edu. Please visit hrpp.msu.edu to access the HRPP Manual, templates, etc.
Exemption Category. This project has qualified for Exempt Category (ies) 2. Please see the appropriate research category below from 45 CFR 46.101(b) for the full regulatory text. 123

Exempt 1. Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Exempt 2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Exempt 3. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if:

(i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

Exempt 4. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Exempt 5. Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) Public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

Exempt 6. Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

1Exempt categories (1), (2), (3), (4), and (5) cannot be applied to activities that are FDA-regulated.

2 Exemptions do not apply to research involving prisoners.

3 Exempt 2 for research involving survey or interview procedures or observation of public behavior does not apply to research with children, except for research involving observations of public behavior when the investigator(s) do not participate in the activities being observed.

APPENDIX B

Recruitment Email

SUBJECT: Participate in a Paid Survey on Campus Experiences

Dear Spartans,

I am conducting a research study for my dissertation to understand Black college student's experiences on campus. Specifically, I am hoping to understand Black/African American students' perceptions of campus climate, academic resilience, stress, and civic engagement. You have been selected as a possible participant because you are at least 18 years of age, self-identified Black/African American, and currently enrolled at [university].

Should you decide to participate you will be asked to complete an online survey (link below) about your experiences

- Your participation is voluntary.
- Your responses will be completely confidential
- The time commitment is 15 - 30 minutes
- The first 200 participants will receive a $10 Amazon gift card as a thank you for participating.

If you choose to participate, please complete the survey by [DATE] using the following link:

[LINK]

If you have any questions about the study, please contact me, Kristen J. Mills, at millskr1@msu.edu or Dr. Jennifer Watling Neal in the Psychology Department at jneal@msu.edu.

APPENDIX C

Survey Instrument

Start of Block: Consent Block

RESEARCH PARTICIPANT INFORMATION AND INFORMED CONSENT

Dear Student,

You are being asked to participate in a research study. Researchers are required to provide a consent form to inform you about the research study, to convey that participation is voluntary, to explain risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have. Please carefully review the following items of the informed consent prior to giving your consent to participate in the study.

Purpose of Study: This study is being conducted by Kristen J. Mills and Dr. Jennifer Watling Neal in the Department of Psychology at [university]. You are being asked to participate in a research study of Black/African American students' perceptions of campus climate, academic resilience, and stress. You have been selected as a possible participant in this study because you are at least 18 years of age, self-identified Black/African American, and currently enrolled at [university]. From this study, the researchers hope to understand how your participation in community activities, perceptions of campus climate, levels of stress, and academic resilience are linked. Your participation in this study will take 15 – 30 minutes.

What you will do: Should you decide to participate, you will be asked to share your race-related experiences on campus, the impacts of these experiences, and your participation in community-based activities (e.g., civic engagement) in an online survey. You will also fill out a demographic questionnaire.

Potential Benefits: You will not directly benefit from your participation in this study. However, your participation may assist in providing direction for education researchers, practitioners, and staff in higher education institutions regarding programs and interventions that support the retention, academic performance, and degree attainment in Black/African American undergraduate and graduate students.

Potential Risks: There is a chance that some of the questions asked may make uncomfortable; you may choose not to answer these questions. Please respond as honestly as possible. Remember, that you are free to skip questions that make you uncomfortable. Your participation

is completely voluntary and you may withdraw from the study at any time.

Privacy and Confidentiality: All information will be kept confidential to the maximum extent allowable by law. Once the survey is complete, responses will be downloaded to a secure network drive on a password protected computer.

The results of the study will be used for a doctoral dissertation and may be used for publication or presented at professional meetings, but the identities of all research participants will remain confidential. The name of the university may be provided but all other information will be confidential. Results of the study will be presented in aggregate form and individual results will not be shared.

Your Right to Participate, Say No, or Withdraw: Your participation is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. You have the right to say no. You may change your mind at any time and withdraw from the study. You may choose not to answer specific questions or to stop participating at any time. If you decide not to participate there will not be any negative consequences. Whether you choose to participate or not will have no effect on your grade(s) or evaluation(s).

Costs/Compensation: The first 200 participants will receive a $10 Amazon gift card for completing the study.

Who to contact with questions: You have the right to ask questions about this study and to have those questions answered by the study investigator before, during or after the research. If you have any questions about the study, please contact me, Kristen J. Mills, at millskr1@msu.edu or Dr. Jennifer Watling Neal in the Psychology Department at jneal@msu.edu.

Debriefing: At the conclusion of the interview you will be provided with a list of resources should you choose to discuss your experiences further.

Documentation of Informed Consent: Your agreement below indicates that you have decided to participate voluntarily in this study and that you have read and understood the information provided above.

Do you consent to participate in this research project?

- ○ Yes, I consent to participate in this research project
- ○ No, I do not consent to participate in this research project

Name

_____

Email address

_____

End of Block: Consent Block

Start of Block: Screening Questions Block

I identify as Black, African American, or of African descent.

- ○ Yes
- ○ No

I am currently a/an

- ○ Undergraduate student
- ○ Graduate student

End of Block: Screening Questions Block

Start of Block: Key Demographics

What is your gender?

- Male
- Female
- Non-binary
- Prefer to self-describe _____
- Prefer not to say

What semester did you begin your studies at [university]?

▼ Before Fall 2011 (1) ... Fall 2018 (23)

What is your current year in school?

- First Year (Freshman)
- Second Year (Sophomore)
- Third Year (Junior)
- Fourth Year (Senior)
- Fifth+ Year (Senior)

What is your College?

- ○ Agriculture and Natural Resources
- ○ Arts and Letters
- ○ Communication Arts and Sciences
- ○ Education
- ○ [Business] college
- ○ Engineering
- ○ Human Medicine
- ○ International Studies and Programs
- ○ [Political Science] College
- ○ Law
- ○ [Medical] College
- ○ Music
- ○ Natural Science
- ○ Nursing
- ○ Osteopathic Medicine
- ○ [College] in Arts and Humanities
- ○ Social Science

○ Veterinary Medicine

End of Block: Key Demographics

Start of Block: Civic Engagement Block

The following is a list of school, community, and political activities that people can get involved in. For each of these activities, please use the following scale to indicate whether, IN THE LAST YEAR, you
never did this
did this once or twice
did this a few times
did this a fair bit
did this a lot

	Never	Once or Twice	A few times	A fair bit	A lot
Visited or helped out people who were sick	○	○	○	○	○
Took care of other families' children (on an unpaid basis)	○	○	○	○	○
Participated in a church-connected group	○	○	○	○	○
Participated in or helped a charity organization	○	○	○	○	○
Participated in an ethnic club or organization	○	○	○	○	○
Participated in a political party, club or organization	○	○	○	○	○
Participated in a social or cultural group or organization (e.g., a choir)	○	○	○	○	○

Participated in a school academic club or team	○	○	○	○	○
Participated in a sports team or club	○	○	○	○	○
Led or helped out with a children's group or club	○	○	○	○	○
Helped with a fund-raising project	○	○	○	○	○
Helped organize neighborhood or community events	○	○	○	○	○
Helped prepare and make verbal and written presentations to organizations, agencies, conferences, or politicians	○	○	○	○	○
Did things to help improve your neighborhood (e.g., helped clean neighborhood)	○	○	○	○	○
Gave help (e.g., money, food, clothing, rides) to friends or classmates	○	○	○	○	○

who needed it					
Served as a member of an organizing committee or board for a school club or organization	○	○	○	○	○
Wrote a letter to a school or community newspaper or publication	○	○	○	○	○
Signed a petition	○	○	○	○	○
Attended a demonstration	○	○	○	○	○
Collected signatures for a petition drive	○	○	○	○	○
Contacted a public official by phone or mail to tell him/her how you felt about a particular issue	○	○	○	○	○
Joined in a protest march, meeting or demonstration	○	○	○	○	○
Got information about community activities from a local	○	○	○	○	○

community information center					
Volunteered at a school event or function	○	○	○	○	○
Helped people who were new to your country	○	○	○	○	○
Gave money to a cause	○	○	○	○	○
Worked on a political campaign	○	○	○	○	○
Ran for a position in student government	○	○	○	○	○
Participated in a discussion about a social or political issue	○	○	○	○	○
Volunteered with a community service organization	○	○	○	○	○

End of Block: Civic Engagement Block

Start of Block: Undergraduate General and Academic Climate

In this section, we ask about your experiences at [university] regarding the campus climate. Please answer openly and truthfully.

Please indicate your level of agreement to each of the following statements about your experiences regarding [university] campus climate.

There are seven options; please choose one answer per statement.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
In general, I fit in with other students here.	○	○	○	○	○	○	○
If I had to do it all over again, I would still attend the university.	○	○	○	○	○	○	○
I have found the atmosphere at this university to be very friendly.	○	○	○	○	○	○	○
I feel left out of things here at the university.	○	○	○	○	○	○	○

Please indicate your level of agreement to each of the following statements about your experiences regarding [University] campus climate.
There are seven options; please choose one answer per statement.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I feel my instructors show little interest in my opinions.	○	○	○	○	○	○	○
In general, my instructors help me feel confident of my abilities.	○	○	○	○	○	○	○
The advisors here are sensitive to student needs.	○	○	○	○	○	○	○
My work is evaluated fairly.	○	○	○	○	○	○	○
I feel comfortable approaching my instructors for advice and assistance.	○	○	○	○	○	○	○
I feel free to participate in class by asking questions or making comments.	○	○	○	○	○	○	○

My instructors view me as a serious student.	○	○	○	○	○	○	○
Other students view me as a serious student.	○	○	○	○	○	○	○
I am progressing as well as the other students in my major.	○	○	○	○	○	○	○
I feel somewhat out of place in the classroom.	○	○	○	○	○	○	○
I am called on in class as often as other students.	○	○	○	○	○	○	○
I feel less confident as a student now than I did in high school.	○	○	○	○	○	○	○
Other students make fun of me sometimes.	○	○	○	○	○	○	○
I have had instructors encourage me to major in their	○	○	○	○	○	○	○

field.							
When I try to speak up in class, I am sometimes interrupted or ignored,	○	○	○	○	○	○	○
I have been treated unfairly on this campus.	○	○	○	○	○	○	○

End of Block: Undergraduate General and Academic Climate

Start of Block: Racial Climate Block

Please indicate your level of agreement to each of the following statements about your experiences regarding [university] campus climate. There are seven options; please choose one answer per statement.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I have experienced racial insensitivity from other students.	○	○	○	○	○	○	○
I have experienced racial insensitivity from faculty.	○	○	○	○	○	○	○
The interracial climate on this campus is tense.	○	○	○	○	○	○	○
In my opinion, this campus is more racist than most.	○	○	○	○	○	○	○
Students of other races or ethnic groups seem uncomfortable around me.	○	○	○	○	○	○	○
The university makes a genuine effort to recruit racial and ethnic minority students.	○	○	○	○	○	○	○
The university fosters respect for cultural	○	○	○	○	○	○	○

differences.							
The university has made a special effort to help racial and ethnic minority students feel like they "belong" on campus.	○	○	○	○	○	○	○
The school mascot is an appropriate symbol for the university.	○	○	○	○	○	○	○

End of Block: Racial Climate Block

Start of Block: Campus Racial Climate - Dr. Dominique Thomas

Please indicate your level of agreement to each of the following statements about your experiences regarding [university] campus climate.

There are five options; please choose one answer per statement.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
1. The university has practices in place that support African American students.	○	○	○	○	○
2. The university has organizations that support African Americans (clubs, fraternities and sororities, etc.).	○	○	○	○	○
3. The university hosts events that promote and celebrate diversity.	○	○	○	○	○
4. The university hosts events that promote and celebrate African American culture.	○	○	○	○	○
5. There are courses available to me that focus on African American culture and history.	○	○	○	○	○

6. The university employs enough African American professors.	○	○	○	○	○
7. African Americans are represented in high-ranking positions (faculty, staff, administration).	○	○	○	○	○
8. African Americans are recognized for their accomplishments on campus.	○	○	○	○	○

Please indicate your level of agreement to each of the following statements about your experiences regarding [university] campus climate.

There are five options; please choose one answer per statement.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
1. People on campus have negative stereotypes toward African American students. (R)	○	○	○	○	○
2. People on campus have low expectations of African American students. (R)	○	○	○	○	○
3. African American students must go above and beyond to get the same benefits as students of other races/ethnicities. (R)	○	○	○	○	○
4. People on campus use racial slurs and commit racist acts against African American students (refusing service, saying the N-word, etc.). (R)	○	○	○	○	○

5. I only feel comfortable with other African American students. (R)	○	○	○	○	○
6. Students only feel comfortable in their own racial/ethnic groups. (R)	○	○	○	○	○

Please indicate your level of agreement to each of the following statements about your experiences regarding [university] campus climate.

There are five options; please choose one answer per statement.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
1. Students from different races and ethnicities attend social events together.	○	○	○	○	○
2. Students from different races and ethnicities study together.	○	○	○	○	○
3. Students from different races and ethnicities do extracurricular activities together.	○	○	○	○	○

End of Block: Campus Racial Climate - Dr. Dominique Thomas

Start of Block: Academic Resilience Block

How much do you agree or disagree with...

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I think I am a smart person.	○	○	○	○	○
I make friends easily.	○	○	○	○	○
I am a self-reliant person.	○	○	○	○	○
I give up easily.	○	○	○	○	○
I usually know what to do if something goes wrong.	○	○	○	○	○
I can't do much to change a bad situation at school into a good situation.	○	○	○	○	○
I am very determined to reach my goals.	○	○	○	○	○
I know how to get the help I need.	○	○	○	○	○
I am a positive thinker.	○	○	○	○	○

I can handle difficult situations at school.	○	○	○	○	○
If I see someone I'd like to meet, I go to that person instead of waiting for him or her to come to me.	○	○	○	○	○

End of Block: Academic Resilience Block

Start of Block: Racial Battle Fatigue Block

We are interested in understanding some of the stress responses of Black college students. The following questions will ask you to reflect on your experiences with stress as a Black college student, and indicate how often each item occured.

Reflect on your experiences as a Black college student. For each item, please use the following scale to indicate how often the following things occurred.

	Never	Almost Never	Sometimes	Fairly Often	Often
How often were you frustrated?	○	○	○	○	○
How often did an incident make you more aware of racism?	○	○	○	○	○
How often did you become irritable?	○	○	○	○	○
How often did your mood dramatically change?	○	○	○	○	○
How often did you feel in shock?	○	○	○	○	○
How often did you feel disappointed?	○	○	○	○	○
How often were you agitated?	○	○	○	○	○

Reflect on your experiences as a Black college student. For each of item, please use the following scale to indicate how often you felt the following.

	Never	Almost Never	Sometimes	Fairly Often	Often
Defensive?	○	○	○	○	○
Apathy?	○	○	○	○	○
Anger?	○	○	○	○	○
Anxiety?	○	○	○	○	○
Worry?	○	○	○	○	○
Disbelief?	○	○	○	○	○
Helplessness?	○	○	○	○	○
Hopelessness?	○	○	○	○	○
Fear?	○	○	○	○	○

Reflect on your experiences as a Black college student. For each of item, please use the following scale to indicate how often the following things occurred.

	Never	Almost Never	Sometimes	Fairly Often	Often
Ate more or less?	○	○	○	○	○
Slept too much or too little?	○	○	○	○	○
Procrastinate?	○	○	○	○	○
Neglect your responsibilities?	○	○	○	○	○

Reflect on your experiences as a Black college student. For each of item, please use the following scale to indicate how often the following items occurred.

	Never	Almost Never	Sometimes	Fairly Often	Often
Prolonged, high-effort coping with stressors?	○	○	○	○	○
Increased commitment to spirituality?	○	○	○	○	○
Felt impatient?	○	○	○	○	○
Quick to argue?	○	○	○	○	○
Increased use of drugs or alcohol?	○	○	○	○	○
Withdrew or isolated from others?	○	○	○	○	○
Poor school or job performance?	○	○	○	○	○
Changes in close family relationships?	○	○	○	○	○

Reflect on your experiences as a Black college student. For each of item, please use the following scale to indicate how often the following things occurred.

	Never	Almost Never	Sometimes	Fairly Often	Often
Muscle aches?	○	○	○	○	○
Back pains?	○	○	○	○	○
Sleep disturbances?	○	○	○	○	○
Pains in joints?	○	○	○	○	○

Reflect on your experiences as a Black college student. For each of item, please use the following scale to indicate how often the following things occurred.

	Never	Almost Never	Sometimes	Fairly Often	Often
Headaches?	○	○	○	○	○
Grinding teeth?	○	○	○	○	○
Clenched jaws?	○	○	○	○	○
Chest pain?	○	○	○	○	○
Shortness of breath?	○	○	○	○	○
Pounding heart?	○	○	○	○	○
High blood pressure?	○	○	○	○	○
Indigestion?	○	○	○	○	○
Gastric distress?	○	○	○	○	○
Constipation or Diarrhea?	○	○	○	○	○
Increased perspiration?	○	○	○	○	○

Intestinal problems?	○	○	○	○	○
Hives?	○	○	○	○	○
Rashes?	○	○	○	○	○
Fatigue?	○	○	○	○	○
Frequent illness?	○	○	○	○	○

End of Block: Racial Battle Fatigue Block

Start of Block: Demographics

What is your current enrollment status?

○ Part-Time

○ Full-Time

What is your current overall GPA?

_____

Are you a first-generation college student?

- ○ Yes
- ○ No

What is your current housing status?

- ○ On campus
- ○ Off campus

What is your current employment status?

- ○ Disabled
- ○ Retired
- ○ Unemployed not looking for work
- ○ Unemployed looking for work
- ○ Employed part time
- ○ Employed full time

What is the highest level of education completed by your mother or primary guardian?

- ○ Less than high school
- ○ High school graduate
- ○ Vocational or Technical degree/certificate
- ○ Some college
- ○ 2 year degree
- ○ 4 year degree
- ○ Professional degree
- ○ Graduate degree (Master's or Doctorate)

What is the highest level of education completed by your father or secondary guardian?

- ○ Less than high school
- ○ High school graduate
- ○ Vocational or Technical degree/certificate
- ○ Some college
- ○ 2 year degree
- ○ 4 year degree
- ○ Professional degree
- ○ Graduate degree (Master's or Doctorate)

End of Block: Demographics

Start of Block: Debriefing

Dear Scholar,

Thank you for your participation in this research study! Your willingness to take part in this survey means a lot to me. However, part of the survey you completed today asked about your experiences of race related stress. I understand that some of the questions may have caused you to become upset or feelings of discomfort. Below is a list of resources available at [university] that can provide you support. I hope that this study did not bring up unpleasant feelings, but urge you to seek help if it did.

Campus resources

In this study, I was interested in understanding how certain experiences in college, especially those related to race, might affect academic performance and stress. I was particularly interested in the experiences of campus climate, civic engagement, academic resilience, and racial battle

fatigue among Black undergraduate and graduate students attending a predominantly white institution like [university].

Black students attending a predominantly white institution can be exposed to different types of adversity, and are impacted academically, psychologically, physiologically, and behaviorally. At this time, there is little research focusing on this topic. I think it is important to identify factors (e.g., civic engagement) that may buffer risk or adversity and promote academic performance and wellness. The results of this study may assist in providing direction for interventions that support the retention, academic performance, and wellness of Black students

If you have any questions, please feel free to contact me, Kristen J. Mills, at millskr1@msu.edu or Dr. Jennifer Watling-Neal in the Psychology Department at jneal@msu.edu.

Would you like to receive an Amazon gift card for your participation in this survey?

- ○ Yes
- ○ No

End of Block: Debriefing

APPENDIX D

Campus Resources

Campus and Community Resources

Dear Scholar,

Thank you for your participation in this research study! Your willingness to take part in this survey means a lot to me. However, part of the survey you completed today asked about your experiences of race related stress. I understand that some of the questions may have caused you to become upset or feelings of discomfort. Below is a list of resources that can provide you support. I hope that this study did not bring up unpleasant feelings but urge you to seek help if it did.

Helpful Resources

[University] Counseling Center
[Services].
Address: [address]
Website: [website]
Phone: [phone]
Regular walk-in hours are:

- [hours]

[University] Relationship Violence and Stalking Program
[Services]
Phone: [phone]
Email: [email]

[University] Transitions Office
[Services].
Address: [address]
Website: [website]
Phone: [phone]

[University] Multicultural Center
[Services].
Website: [website]
Address: [address]
Phone: [phone]
Hours of Operation: [hours]

[University] Office for Inclusion
[Services].
Website: [website]

Email: [email]
Phone: [phone]

[University] Sexual Assault Program
[Services].
Website: [website]

[University] Health [service]
Phone: [phone]

[University] Health Center
Phone: [phone]

[University] Psychological Clinic
Phone: [phone]

[University] Family and Child Care Clinic
Phone: [phone]

HOTLINES

National Suicide Prevention
1-800-273-8255

Suicide Hotline
1-800-784-2433

Community Mental Health
517-346-8460

National Mental Health Association
1-800-969-6642

The Trevor Project for LGBT Crisis and Suicide Prevention
Text “TREVOR” to 1-202-304-1200 Monday-Friday 3pm-10pm EST
1-866-488-7386

APPENDIX E

Study 1 Measurement

Exploratory factor analyses (EFA) were conducted for each scale: General Campus Climate, Academic Campus Climate, Racial Campus Climate, Youth Inventory of Involvement, and Academic Resilience. After conducting listwise deletion for missing data, a total of 388 cases were used to analyze each scale. Descriptive statistics and factor loadings can be found in Appendix E. Specifically, items were examined via exploratory factor analysis using principal axis extraction with promax rotation as recommended by Russell (2002) in SPSS. This method was used because the primary purpose is to understand the shared variance for the factors underlying the campus climate, civic engagement and academic resilience measures. Principal axis extraction was used instead of principal components analysis because it sets the communalities to a value of 1.0, extracts factors based on correlations among measures, and produces higher loadings due to the communalities of measures.

General Campus Climate

For the General Campus climate scale, it was predicted that the EFA would yield one distinct factor corresponding to the original scale. General Campus Climate (GCC) item scores ranged from 'Strong Agreement (1)' to 'Strong Disagreement (7); items 1-3 were reverse coded such that coded such that higher scores indicate more positive perceptions of campus climate. Item 4 "I feel left out of things here at the university" had the lowest mean (M = 3.85) while item 2 "If I had to do it all over again, I would still attend the university" had the highest (M = 5.24). This scale indicated good internal consistency with Cronbach's alpha of .786. Descriptive statistics for the GCC items are provided in Table E-1. The eigenvalues ≥ 1 criterion and scree plot revealed a single factor solution which explained 61.84% of the total variance (see Table E-2 and Figure E-1).

Table E- 1 *General campus climate items, means, standard deviations, and inter-item correlations*

			gcc_1r	gcc_2r	gcc_3r	gcc_4
gcc_1r	In general, I fit in with other students here.					
gcc_2r	If I had to do it all over again, I would still attend the university.		.554			
gcc_3r	I have found the atmosphere at this university to be very friendly.		.602	.605		
gcc_4	I feel left out of things here at the university.		.428	.351	.71	
		M	4.87	5.24	4.95	3.85
		SD	1.50	1.82	1.53	1.64

Table E- 2 General campus climate factor loadings

		Factor 1	Communalities
gcc_1r	In general, I fit in with other students here.	.766	.452
gcc_2r	If I had to do it all over again, I would still attend the university.	.735	.428
gcc_3r	I have found the atmosphere at this university to be very friendly.	.787	.474
gcc_4	I feel left out of things here at the university.	.501	.211
Eigenvalue		2.474	
Variance (%)		61.842	

Note. All factor loadings > .30 are presented. Initial communalities are reported.

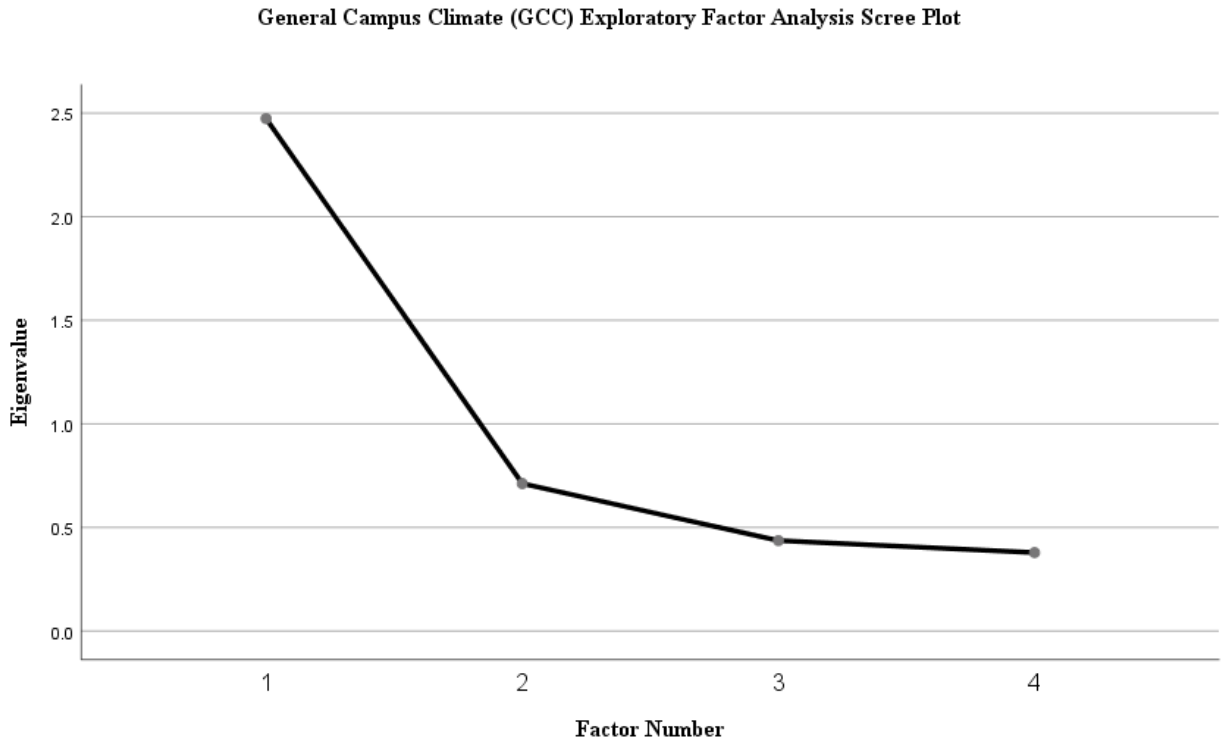

Figure E- 1 *General campus climate exploratory factor analysis scree plot*

Academic Campus Climate

For the Academic Campus Climate scale, it was predicted that the EFA would yield three distinct factors corresponding to the original scale. Academic Campus Climate (ACC) item scores ranged from 'Strong Agreement (1)' to 'Strong Disagreement (7); items 2-9, 11, 14 were reverse coded such that coded such that higher scores indicate more positive perceptions of campus climate. Across 16 items, item 14 "I have had instructors encourage me to major in their field" had the lowest mean (M = 3.64) while item 13 "Other students make fun of me sometimes" had the highest (M = 5.80). This scale indicated good internal consistency with Cronbach's alpha of .861. Descriptive statistics for the ACC items are provided in Table E-3.

Table E- 3 *Academic Campus Climate Items, Means, Standard Deviations, and Inter-item Correlations*

		acc_1	acc_2r	acc_3r	acc_4r	acc_5r	acc_6r	acc_7r	acc_8r	acc_9r	acc_10	acc_11r	acc_12	acc_13	acc_14r	acc_15	acc_16
acc_1	I feel my instructors show little interest in my opinions.																
acc_2r	In general, my instructors help me feel confident of my abilities.	.375															
acc_3r	The advisors here are sensitive to student needs.	.247	.405														

Table E-3 cont'd

		acc_1	acc_2r	acc_3r	acc_4r	acc_5r	acc_6r	acc_7r	acc_8r	acc_9r	acc_10	acc_11r	acc_12	acc_13	acc_14r	acc_15	acc_16
acc_4r	My work is evaluated fairly.	.361	.450	.383													
acc_5r	I feel comfortable approaching my instructors for advice and assistance.	.322	.559	.341	.458												
acc_6r	I feel free to participate in class by asking questions or making comments.	.307	.495	.358	.367	.603											

Table E-3 cont'd

		acc_1	acc_2r	acc_3r	acc_4r	acc_5r	acc_6r	acc_7r	acc_8r	acc_9r	acc_10	acc_11r	acc_12	acc_13	acc_14r	acc_15	acc_16
acc_7r	My instructors view me as a serious student.	.379	.499	.288	.389	.467	.538										
acc_8r	Other students view me as a serious student.	.279	.392	.301	.348	.395	.473	.597									
acc_9r	I am progressing as well as the other students in my major.	.178	.383	.274	.351	.337	.384	.376	.337								

Table E-3 cont'd

		acc_1	acc_2r	acc_3r	acc_4r	acc_5r	acc_6r	acc_7r	acc_8r	acc_9r	acc_10	acc_11r	acc_12	acc_13	acc_14r	acc_15	acc_16
acc_10	I feel somewhat out of place in the classroom.	.349	.380	.224	.293	.353	.417	.310	.379	.359							
acc_11r	I am called on in class as often as other students.	.285	.340	.253	.263	.306	.403	.425	.316	.294	.199						
acc_12	I feel less confident as a student now than I did in high school.	.244	.340	.102	.220	.343	.340	.286	.240	.373	.354	.158					

Table E-3 cont'd

		acc_1	acc_2r	acc_3r	acc_4r	acc_5r	acc_6r	acc_7r	acc_8r	acc_9r	acc_10	acc_11r	acc_12	acc_13	acc_14r	acc_15	acc_16
acc_13	Other students make fun of me sometimes.	.336	.136	.211	.310	.101	.174	.215	.267	.153	.288	.104	.141				
acc_14r	I have had instructors encourage me to major in their field.	.061	.271	.110	.096	.243	.210	.223	.188	.214	.070	.294	.145	-.114			
acc_15	When I try to speak up in class, I am sometimes interrupted or ignored,	.403	.271	.196	.235	.270	.273	.260	.299	.138	.393	.151	.173	.451	-.061		

Table E-3cont'd

		acc_1	acc_2r	acc_3r	acc_4r	acc_5r	acc_6r	acc_7r	acc_8r	acc_9r	acc_10	acc_11r	acc_12	acc_13	acc_14r	acc_15	acc_16
acc_16	I have been treated unfairly on this campus.	.458	.259	.259	.273	.223	.220	.235	.276	.244	.450	.156	.172	.443	-.043	.583	
	M	4.5052	4.8273	5.0052	5.3222	5.1263	5.1314	5.3737	5.0670	5.0928	3.8325	4.4536	3.7887	5.8093	3.6495	4.8557	4.6211
	SD	1.71254	1.45867	1.60102	1.30466	1.70938	1.65835	1.34184	1.52351	1.58861	1.72840	1.69065	2.12690	1.52827	2.00021	1.87457	1.91641

The eigenvalues ≥ 1 criterion and scree plot revealed a three-factor solution which explained 52.99% of the total variance (see Table E-4 and Figure E-2). Factors were inconsistent with the original scale where Factor 1 (Instructor) included items 1-6, Factor 2 (Perceptions of Seriousness) included items 7-12, and Factor 3 (Perceptions of Respect) included items 13-16. In this analysis, Factor 1 accounted for 34.33% of the variance and included items 2-8, 11, and 14 (eigenvalue = 5.59). Factor 2 accounted for 11.53% of the variance and included items 1, 13, 15, and 16 (eigenvalue = 1.84). Factor 3 accounted for 6.46% of the variance and included items 9, 10 and 12 (eigenvalue = 1.03). All items loaded above .30 on their primary factor; none of the secondary loadings exceeded .30 except for items 10 (.339) and 14 (-.34). The factors were labeled as Factor 1: Academic Opportunity (e.g., In general, my instructors help me feel confident of my abilities.), Factor 2: Negative Experiences (e.g., Other students make fun of me sometimes), and Factor 3: Academic Progress (e.g., I feel less confident as a student now than I did in high school.).

Table E- 4 *Academic campus climate factor loadings*

	Factor 1 Academic Opportunity	Factor 2 Negative Experiences	Factor 3 Academic Progress	Communalities
acc_1		0.449		0.367
acc_2r	0.615			0.485
acc_3r	0.539			0.271
acc_4r	0.524			0.376
acc_5r	0.593			0.506
acc_6r	0.617			0.518
acc_7r	0.761			0.520
acc_8r	0.570			0.438
acc_9r			0.369	0.331
acc_10		0.339	0.486	0.388
acc_11r	0.636			0.284
acc_12			0.689	0.257
acc_13		0.665		0.333
acc_14r	0.446	-0.340		0.183
acc_15		0.722		0.438
acc_16		0.773		0.474
Eigenvalue	5.59	1.84	1.03	
Variance (%)	34.33	11.53	6.46	

Note. All factor loadings > .30 are presented. Initial communalities are reported.

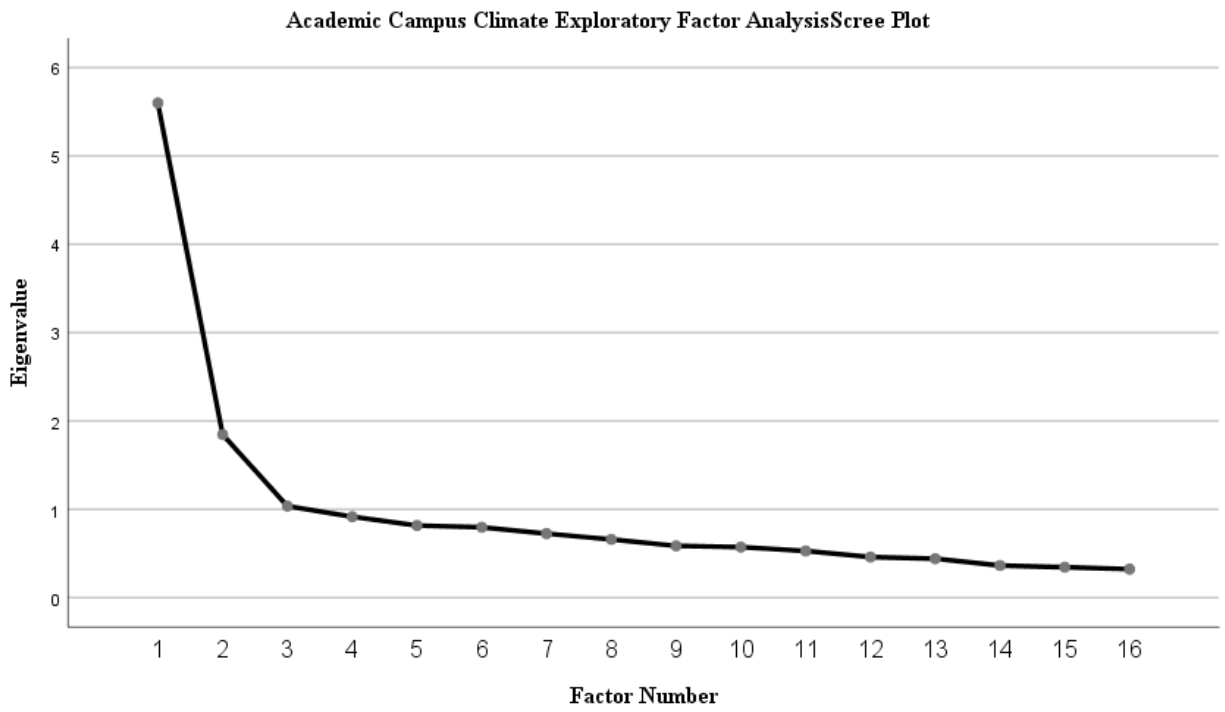

Figure E- 2 *Academic campus climate exploratory factor analysis scree plot*

Racial Campus Climate

For the Racial Campus Climate scale, it was predicted that the EFA would yield two distinct factors corresponding to the original scale. Racial Campus Climate (RCC) item scores ranged from 'Strong Agreement (1)' to 'Strong Disagreement (7); items 6-9 were reverse coded such that coded such that higher scores indicate more positive perceptions of campus climate. Across nine items, item 1 "I have experienced racial insensitivity from other students" had the lowest mean (M = 3.41) while item 9 "The school mascot is an appropriate symbol for the university" had the highest (M = 5.35). This scale indicated good internal consistency with Cronbach's alpha of .868. Descriptive statistics for the RCC items are provided in Table E-5.

Table E- 5 *Racial campus climate items, means, standard deviations, and inter-item correlations*

		rcc_1	rcc_2	rcc_3	rcc_4	rcc_5	rcc_6r	rcc_7r	rcc_8r	rcc_9r
rcc_1	I have experienced racial insensitivity from other students.									
rcc_2	I have experienced racial insensitivity from faculty.	.647								
rcc_3	The interracial climate on this campus is tense.	.557	.493							
rcc_4	In my opinion, this campus is more racist than most.	.530	.574	.678						
rcc_5	Students of other races or ethnic groups seem uncomfortable around me.	.469	.441	.519	.551					
rcc_6r	The university makes a genuine effort to recruit racial and ethnic minority students.	.255	.277	.286	.363	.194				
rcc_7r	The university fosters respect for cultural differences.	.353	.428	.377	.453	.314	.647			
rcc_8r	The university has made a special effort to help racial and ethnic minority students feel like they “belong” on campus.	.387	.383	.342	.445	.317	.614	.720		
rcc_9r	The school mascot is an appropriate symbol for the university.	.269	.289	.275	.286	.280	.333	.422	.456	
	M	3.41	4.71	3.81	4.8	4.25	4.67	4.88	3.41	4.71
	SD	2.03	1.89	1.7	1.79	1.9	1.67	1.61	2.03	1.89

The eigenvalues ≥ 1 criterion and scree plot revealed a two-factor solution which explained 64.85% of the total variance (see Table E-6). The factors were consistent with the original scale where Factor 1 (Racial Experiences) included items 1-5 and Factor 2 (University Perceptions) included items 6-9. Factor 1 accounted for 49.14% of the variance and included items 1-5 (eigenvalue = 4.42). Factor 2 accounted for 15.71% of the variance and included items 6-9 (eigenvalue = 1.84). All items loaded above .30 on their primary factor. The factors were labeled according to the original scale as Factor 1: Racial Experiences and Factor 2: University Perceptions.

Table E- 6 *Racial Campus Climate Factor Loadings*

	Factor 1	Factor 2	
	Racial Experiences	University Perceptions	Communalities
rcc_1	0.753		0.516
rcc_2	0.694		0.515
rcc_3	0.784		0.533
rcc_4	0.757		0.589
rcc_5	0.675		0.381
rcc_6r		0.782	0.472
rcc_7r		0.850	0.618
rcc_8r		0.834	0.598
rcc_9r		0.419	0.248
Eigenvalue	4.42	1.84	
Variance (%)	49.14	15.71	

Note. All factor loadings > .30 are presented. Initial communalities are reported.

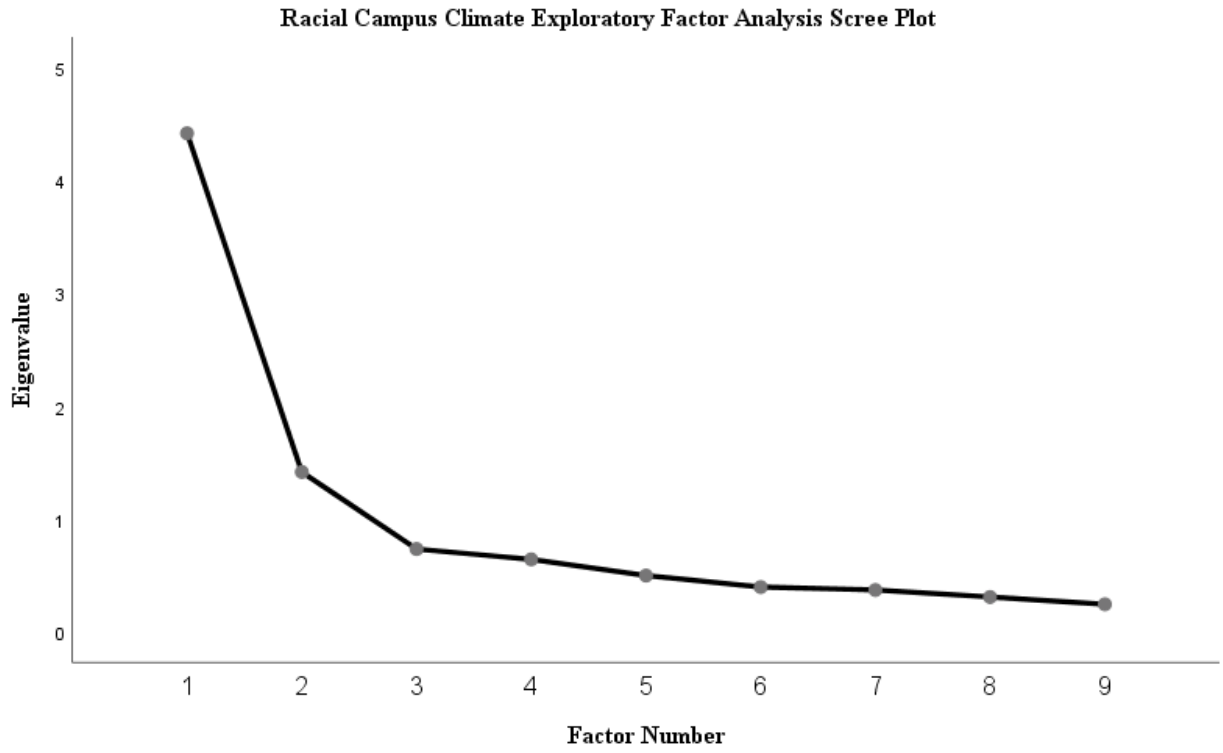

Figure E- 3 *Racial campus climate EFA scree plot*

Youth Inventory of Involvement

For the Youth Inventory of Involvement, it was predicted that the EFA would yield four distinct factors corresponding to each type of involvement (political activities, community activities, helping activities, and passive involvement). Youth Inventory of Involvement (CE) item scores ranged from 'Never Did This Over the Previous Year (0)' to 'Did This A Lot Over the Previous Year (4)'. Across 30 items, item 20 "Collected signatures for a petition drive" had the lowest mean (M = .4) while item 15 "Gave help (e.g., money, food, clothing, rides) to friends or classmates who needed it" had the highest (M = 2.31). This scale indicated good internal consistency with Cronbach's alpha of .93. Descriptive statistics for the CE items are provided in Table E-8.

Table E- 7 *Civic engagement items*

Label	Item Wording
civic_1	Visited or helped out people who were sick
civic_2	Took care of other families' children (on an unpaid basis)
civic_3	Participated in a church-connected group
civic_4	Participated in or helped a charity organization
civic_5	Participated in an ethnic club or organization
civic_6	Participated in a political party, club or organization
civic_7	Participated in a social or cultural group or organization (e.g., a choir)
civic_8	Participated in a school academic club or team
civic_9	Participated in a sports team or club
civic_10	Led or helped out with a children's group or club
civic_11	Helped with a fund-raising project
civic_12	Helped organize neighborhood or community events
civic_13	Helped prepare and make verbal and written presentations to organizations, agencies, conferences, or politicians
civic_14	Did things to help improve your neighborhood (e.g., helped clean neighborhood)
civic_15	Gave help (e.g., money, food, clothing, rides) to friends or classmates who needed it
civic_16	Served as a member of an organizing committee or board for a school club or organization
civic_17	Wrote a letter to a school or community newspaper or publication
civic_18	Signed a petition
civic_19	Attended a demonstration
civic_20	Collected signatures for a petition drive
civic_21	Contacted a public official by phone or mail to tell him/her how you felt about a particular issue
civic_22	Joined in a protest march, meeting or demonstration
civic_23	Got information about community activities from a local community information center
civic_24	Volunteered at a school event or function
civic_25	Helped people who were new to your country
civic_26	Gave money to a cause
civic_27	Worked on a political campaign
civic_28	Ran for a position in student government
civic_29	Participated in a discussion about a social or political issue
civic_30	Volunteered with a community service organization

Table E- 8 *Civic engagement means standard deviations, and inter-item correlations*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1																														
	0.4																													
	1																													
2	5																													
	0.3	0.3																												
	1	1																												
3	9	1																												
	0.3	0.3	0.4																											
	5	3	7																											
4	3	5	3																											
	0.1	0.1	0.2	0.4																										
	7	9	8	1																										
5	1	6	0	0																										
	0.2	0.2	0.2	0.3	0.3																									
	5	2	4	0	3																									
6	1	7	3	6	5																									
	0.1	0.2	0.2	0.3	0.4	0.3																								
	9	6	9	9	7	2																								
7	2	2	4	6	1	2																								

Table E-8 cont'd

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	0.	0.	0.	0.	0.	0.	0.																							
	3	2	2	2	2	2	3																							
	0	3	2	7	7	2	7																							
8	6	3	5	3	4	9	4																							
	0.	0.	0.	0.	0.	0.	0.	0.																						
	2	2	2	3	0	1	1	3																						
	7	9	6	2	2	0	3	7																						
9	4	1	9	4	5	1	4	2																						
	0.	0.	0.	0.	0.	0.	0.	0.	0.																					
	4	4	4	4	2	2	3	3	4																					
1	1	2	0	9	3	3	0	0	2																					
0	7	5	5	1	9	4	3	2	8																					
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.																				
	3	3	2	4	3	2	3	4	3	4																				
1	6	1	3	9	4	3	5	0	0	9																				
1	6	5	8	8	3	5	6	9	2	9																				
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.																			
	3	2	2	4	3	3	3	2	1	4	4																			
1	1	3	4	3	9	1	0	2	8	1	9																			
2	0	2	9	1	1	2	5	7	2	4	0																			
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.																		
	3	2	3	4	4	4	3	2	1	4	4	5																		
1	3	5	2	1	0	0	5	9	9	5	8	3																		
3	6	4	4	1	8	3	7	9	6	0	8	1																		

Table E-8 cont’d

									10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	1
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.																
	3	3	3	4	3	2	3	3	2	5	4	5	4																
1	6	6	5	9	8	6	9	0	9	2	9	8	2																
4	6	1	6	4	4	5	3	6	5	0	0	9	2																
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.															
	3	2	2	3	2	1	3	2	0	3	3	2	2	4															
1	5	7	4	5	6	6	2	1	8	2	1	8	9	1															
5	5	4	1	8	6	6	0	6	9	4	8	7	4	4															
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.														
	2	2	2	4	5	2	4	3	1	4	5	5	4	4	2														
1	1	4	8	3	1	9	4	9	8	0	4	1	9	1	7														
6	7	7	5	7	7	4	7	6	4	3	7	1	3	8	9														
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.													
	3	3	2	2	2	3	2	3	2	3	3	3	4	3	2	3													
1	9	6	6	5	2	8	6	0	5	7	2	4	8	8	5	1													
7	2	6	4	5	9	8	3	6	5	7	1	4	9	1	4	3													
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.												
	2	1	0	1	1	2	0	1	0	1	2	0	1	1	1	1	2												
1	3	1	4	3	4	7	8	6	5	0	1	9	6	8	8	3	8												
8	0	4	1	6	8	5	9	0	6	7	8	0	5	3	9	8	1												
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.											
	2	1	2	2	2	4	2	2	1	2	2	2	3	3	1	2	4	4											
1	9	7	1	8	7	1	9	2	8	6	9	7	5	1	9	4	2	4											
9	5	2	2	4	3	4	9	5	0	6	5	0	8	6	6	0	1	3											

Table E-8 cont'd

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.												
	2	1	1	1	1	4	1	2	1	2	2	2	3	2	0	2	4	3												
2	7	2	7	7	3	1	4	0	3	1	2	4	3	3	7	0	1	1												
0	1	2	6	7	0	6	8	2	4	8	0	9	2	4	7	5	8	1												
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.										
	2	1	1	1	1	4	1	2	0	2	1	2	3	2	0	2	4	3	5	5										
2	9	6	9	9	8	3	5	1	8	1	9	2	5	0	9	3	8	9	1	4										
1	2	2	3	6	1	3	4	6	4	1	7	6	3	4	6	5	0	2	6	1										
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.									
	3	1	1	2	2	4	2	2	1	2	3	3	3	3	2	3	3	4	6	5	5									
2	3	6	8	7	9	6	7	6	2	8	0	2	7	4	0	3	9	5	7	2	3									
2	4	2	3	4	4	8	2	5	0	6	6	6	4	7	4	2	0	9	0	6	9									
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								
	3	2	2	3	3	3	2	2	0	3	3	3	4	3	2	3	4	3	4	3	4	5								
2	7	5	6	4	6	6	8	4	7	1	6	6	0	9	3	4	0	5	3	9	2	1								
3	3	0	4	3	4	8	8	4	9	0	2	1	3	5	4	6	8	5	2	9	5	6								
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
	4	3	3	5	4	3	3	4	4	4	5	4	4	4	3	5	3	2	3	2	2	3	3							
2	0	5	6	5	7	1	7	3	0	9	4	3	3	8	4	6	3	9	3	3	5	7	8							
4	4	3	7	6	6	6	7	4	8	8	3	9	6	6	1	3	7	4	2	0	3	4	8							
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.						
	2	1	2	3	2	2	2	2	1	2	2	2	2	3	2	2	3	2	3	2	2	2	3	3						
2	6	8	3	1	2	4	6	0	8	6	3	9	3	4	9	6	0	2	3	3	4	8	1	0						
5	3	3	4	9	8	3	1	4	0	9	4	1	1	4	4	6	2	5	9	2	6	3	4	0						

Table E-8 cont'd

										1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.					
	3	2	3	4	3	2	2	2	2	3	4	3	3	4	4	3	3	2	3	2	2	3	3	4	4					
2	9	9	0	6	0	3	5	4	5	8	1	5	5	5	1	2	6	8	2	4	6	1	9	2	4					
6	5	8	8	3	4	8	7	0	2	7	1	1	2	5	2	3	6	8	1	4	3	3	8	2	6					
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
	2	1	1	2	2	5	1	1	1	1	1	3	4	2	1	2	4	2	4	5	5	5	4	2	2	2				
2	1	0	7	2	1	4	8	5	1	6	9	2	1	6	2	4	2	7	2	8	7	0	0	5	6	0				
7	6	2	9	8	2	7	1	3	9	9	8	9	2	0	0	8	1	1	7	7	4	2	5	4	3	7				
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
	2	2	2	2	2	3	1	3	3	2	3	2	3	3	1	3	3	1	2	3	3	3	2	3	1	2	4			
2	8	0	9	8	2	7	8	2	5	9	4	5	7	0	5	5	8	3	7	3	5	1	6	7	6	5	3			
8	3	3	3	1	1	1	5	3	7	7	6	5	2	1	4	8	2	6	6	8	1	2	6	3	0	4	5			
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
	2	1	1	2	3	3	3	2	0	1	2	2	3	2	2	3	1	3	3	2	3	4	4	3	2	2	3	2		
2	3	3	9	9	3	8	1	1	6	8	7	7	1	9	7	4	8	2	5	0	3	2	2	5	8	7	4	3		
9	5	4	0	3	2	0	3	3	8	1	4	3	1	6	1	7	6	2	2	7	7	1	6	9	3	3	0	8		
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
	3	2	3	6	4	2	3	2	2	4	5	5	4	4	3	5	2	2	2	2	2	3	3	6	3	4	2	2	3	
3	5	3	5	5	8	8	6	6	5	6	2	1	5	8	3	4	6	4	9	1	0	8	9	5	4	9	6	7	4	
0	6	1	2	0	9	9	1	9	2	2	0	5	4	1	9	8	2	9	5	0	9	0	7	2	9	2	6	4	6	

Table E-8 cont’d

										1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
	1.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	0.	1.	1.	0.	0.	0.	1.	1.	1.	1.	0.	0.	1.	1.
	4	3	5	9	9	8	9	7	3	2	6	2	1	3	3	7	5	6	0	4	5	9	1	9	3	8	4	6	9	9
M	9	4	7	8	1	8	5	6	6	9	4	2	0	4	1	5	0	5	5	0	2	1	0	4	9	0	2	3	5	9
	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.	1.
	3	3	5	3	5	2	5	6	6	4	4	3	3	3	2	5	9	1	1	9	9	1	2	5	2	2	9	1	5	4
S	0	9	2	4	1	5	3	1	2	2	1	9	6	0	9	9	8	3	8	1	9	8	5	3	6	2	3	6	0	9
D	7	8	1	3	8	6	9	6	6	0	0	1	6	7	1	6	7	5	9	7	2	2	5	0	2	5	8	4	4	2

The eigenvalues ≥ 1 criterion revealed a six-factor solution which explained 59.8% of the total variance (see Table E-9). The factors were inconsistent with the original scale which included four factors: political activities (items 6, 13, 17, 20-22, 27, 28), community activities (items 3, 5, 12, 14, 19, 23, and 25), helping activities (1, 2,4, 7, 10, 11, 16, 24, 29, and 30) , and passive involvement (8, 9, 15, 18, and 26). In this study, Factor 1 (political) accounted for 34.17% of the variance and included items 6, 17, 19-23, 27-28 (eigenvalue = 10.25). Factor 2 (community organizational) accounted for 8.91% of the variance and included items 4, 11-13, 16, 24, and 30 (eigenvalue = 2.67). Factor 3 (helping) accounted for 5.3% of the variance and included items 1-3, 10, 14, 15, 25, and 26 (eigenvalue = 1.59). Factor 4 (sociocultural) accounted for 4.48% of the variance and included items 5 and 7. Factor 5 (school) accounted for 3.6% of the variance and included items 8 and 9. Factor 6 (sociopolitical) accounted for 3.33% of the variance and included items 18 and 29 (eigenvalue = 1.00). All items loaded above .30 on their primary factor except item 29 (.275).

Table E- 9 *Civic engagement factor loadings*

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Communalities
civic_1			0.542				0.402
civic_2			0.611				0.338
civic_3			0.321				0.336
civic_4		0.585					0.569
civic_5		0.369		0.538			0.464
civic_6	0.546						0.445
civic_7				0.664			0.405
civic_8				0.398	0.452		0.367
civic_9					0.705		0.414
civic_10		0.303	0.425				0.511
civic_11		0.461					0.529
civic_12		0.679					0.529
civic_13	0.355	0.357					0.512
civic_14		0.392	0.416				0.543
civic_15			0.535				0.333
civic_16		0.517		0.394			0.558
civic_17	0.477		0.423				0.487
civic_18						0.583	0.370
civic_19	0.485					0.377	0.558
civic_20	0.764						0.491
civic_21	0.740						0.525
civic_22	0.547					0.395	0.607
civic_23	0.330						0.454
civic_24		0.490			0.348		0.615
civic_25			0.307				0.305
civic_26		0.300	0.460				0.450
civic_27	0.877						0.573
civic_28	0.429				0.358		0.393
civic_29				0.262		0.275	0.366
civic_30		0.922					0.637
Eigenvalue	10.250	2.674	1.591	1.343	1.080	1.002	
Variance (%)	34.165	8.914	5.304	4.477	3.599	3.338	

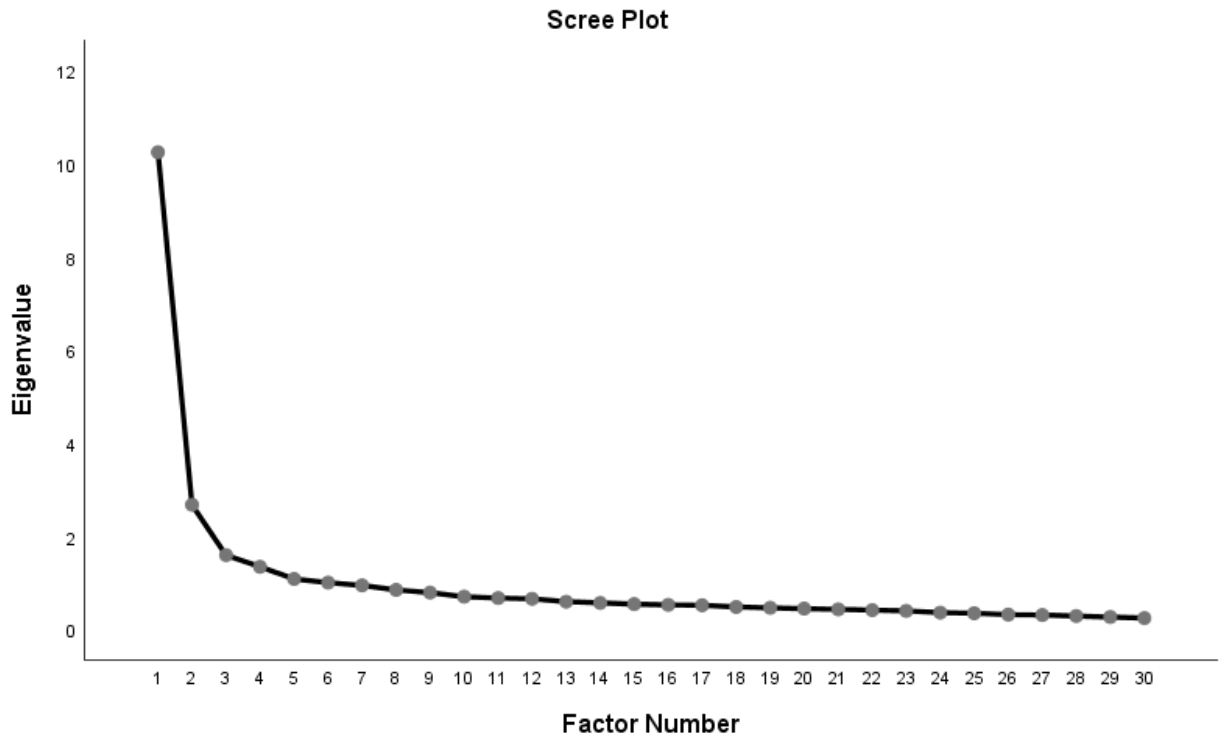

Figure E- 4 *Civic engagement exploratory factor analysis scree plot*

Academic Resilience

For the Academic Resilience scale, it was predicted that the EFA will one factor corresponding to the original scale. Academic Resilience (AR) item scores ranged from 'Strongly Disagree (1)' to 'Strongly Agree (5);' items 4 and 6 were reversed scored such that higher scores indicated higher levels of academic resilience. Across 11 items, item 11 "If I see someone I'd like to meet, I go to that person instead of waiting for him or her to come to me" had the lowest mean (M = 3.05) while item 7 "I am very determined to reach my goals" had the highest (M = 4.65). This scale indicated good internal consistency with Cronbach's alpha of .754. Descriptive statistics for the AR items are provided in Table E-10.

Table E- 10 *Academic resilience*

		acad res_ 1	acad res_ 2	acad res_ 3	acad res_ 4r	acad res_ 5	acad res_ 6r	acad res_ 7	acad res_ 8	acad res_ 9	acad res_ 10	acad res_ 11
acad res_ 1	I think I am a smart person.											
acad res_ 2	I make friends easily.	0.272										
acad res_ 3	I am a self-reliant person.	0.282	0.116									
acad res_ 4r	I give up easily.	0.171	0.064	0.197								
acad res_ 5	I usually know what to do if something goes wrong.	0.169	0.154	0.204	0.249							
acad res_ 6r	I can't do much to change a bad situation at school into a good situation.	0.133	0.141	0.121	0.370	0.105						
acad res_ 7	I am very determined to reach my goals.	0.342	0.184	0.301	0.337	0.091	0.239					
acad res_ 8	I know how to get the help I need.	0.236	0.251	0.188	0.242	0.265	0.178	0.325				
acad res_ 9	I am a positive thinker.	0.338	0.413	0.128	0.233	0.191	0.237	0.261	0.377			

Table E-10 cont'd

		acad res_ 1	acad res_ 2	acad res_ 3	acad res_ 4r	acad res_ 5	acad res_ 6r	acad res_ 7	acad res_ 8	acad res_ 9	acad res_ 10	acad res_ 11
acad res_ 10	I can handle difficult situations at school.	0.236	0.232	0.281	0.371	0.326	0.290	0.373	0.459	0.479		
acad res_ 11	If I see someone I'd like to meet, I go to that person instead of waiting for him or her to come to me.	0.145	0.438	0.019	0.060	0.181	0.022	0.051	0.168	0.260	0.197	
	M	4.53 09	3.70 62	4.49 48	4.03 61	3.97 16	3.56 19	4.65 46	4.10 82	3.97 94	4.14 43	3.05 15
	SD	0.72 001	1.23 525	0.71 345	1.08 489	0.93 274	1.11 545	0.64 243	1.04 604	1.15 898	0.93 167	1.32 260

The eigenvalues ≥ 1 criterion and scree plot revealed a three-factor solution which explained 52.92% of the total variance (see Table E-11 and Figure E-5). Factors were inconsistent with the original scale, which was a single factor composite measure. In this analysis, Factor 1 accounted for 30.9% of the variance and included items 4-6, 8, and 10 (eigenvalue = 3.40). Factor 2 accounted for 12.63% of the variance and included items 2, 9, and 11 (eigenvalue = 1.39). Factor 3 accounted for 9.39% of the variance and included items 1, 3, and 7(eigenvalue = 1.03). All items loaded above .30 on their primary factor; none of the secondary loadings exceeded .30 except for item 9 (.308). The factors were labeled as Factor 1: Resourcefulness (e.g., I usually know what to do if something goes wrong), Factor 2: Social Skills (e.g., I make friends easily), and Factor 3: Resolute/Resolve (e.g., I am a self-reliant person).

Table E- 11 *Academic resilience factor loadings*

	Factor 1 Resourcefulness	Factor 2 Social Skills	Factor 3 Resolute/Resolve	Communalities
acadres_1			0.632	0.233
acadres_2		0.723		0.318
acadres_3			0.427	0.174
acadres_4	0.633			0.271
acadres_5	0.372			0.178
acadres_6	0.447			0.185
acadres_7			0.541	0.295
acadres_8	0.421			0.285
acadres_9	0.308	0.404		0.377
acadres_10	0.727			0.428
acadres_11		0.636		0.224
Eigenvalue	3.400	1.389	1.032	
Variance	30.910%	12.627%	9.385%	

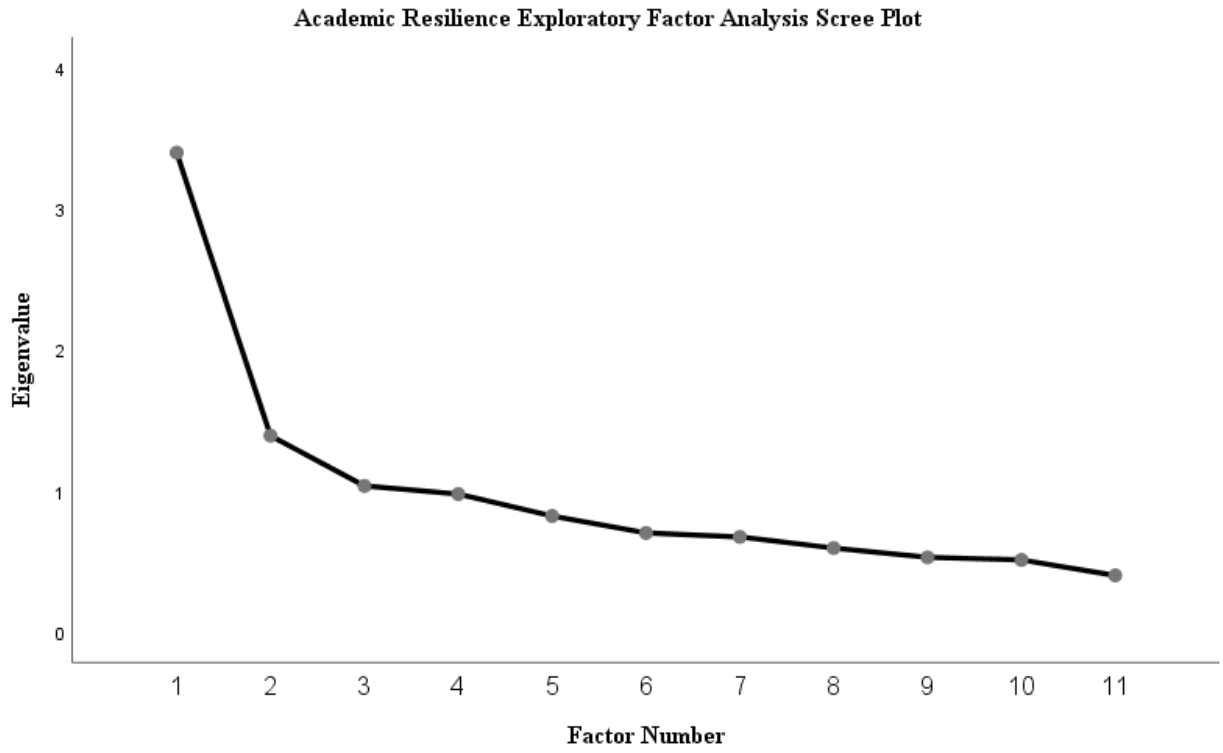

Figure E- 5 *Academic resilience exploratory factor analysis scree plot*

APPENDIX F

Study 2 Measurement

This study employed the same exploratory factor analyses results outlined in Chapter 2 for the General Campus Climate, Academic Campus Climate, Racial Campus Climate, and Youth Inventory of Involvement scale. After conducting listwise deletion for missing data, a total of 368 cases were used to analyze the Racial Battle Fatigue scale.

Specifically, Racial Battle Fatigue Scale items were examined via exploratory factor analysis using principal axis extraction with promax rotation as recommended by Russell (2002) in SPSS. This method was used because the primary purpose is to understand the shared variance for the factors underlying the racial battle fatigue measure. In addition, principal axis extraction was used instead of principal components analysis which sets the communalities to a value of 1.0, extracts factors based on correlations among measures, and produces higher loadings due to the communalities of measures. It was predicted that the EFA would yield three distinct factors corresponding to the three behavioral stress response dimensions of racial battle fatigue (psychological, physiological, and behavioral).

Racial Battle Fatigue Scale

Racial Battle Fatigue (RBF) item scores range from items are rated on a 5-point Likert scale ranging from 'Never (1)' to 'Very Often (5)' with higher scores indicating more racial battle fatigue. Of the items, "<How often did you experience> hives?" had the lowest mean (M = 1.33) while "<How often did you> procrastinate?" had the highest (M = 4.02). This scale indicated good internal consistency with Cronbach's alpha of .946. Descriptive statistics for the RBF items are provided in Table F-10.

The eigenvalues ≥ 1 criterion revealed an 11-factor solution which explained 64.67% of the total variance (see Table F-11). However, examination of the scree plot revealed a four or five factor solution. Costello and Osborne (2005) suggest that examining the scree plot is the best

practice for determining the number of factors to retain in an exploratory factor analysis. Furthermore, the authors suggest running multiple factor analyses using manual factor retention if the scree plot was unclear. Exploratory factor analyses using principal axis extraction with promax rotation were run manually retaining for three, four, five, and six factors; each factor structure was examined. The four-factor solution explained 49.03% of the variance and was preferred based upon the racial battle fatigue framework, scree plot, cleanness of the factor structure (item loadings above .32) (Tabachnick & Fidell, 2001), and difficulty interpreting the fifth and sixth factors. A total of eleven items were removed from the scale. First, six items were removed: 'Anxiety,' 'Felt impatient,' and 'Withdrew or isolated from others' were removed because of similarities in factor loadings across factors (i.e., less than .10 difference) while 'Increased commitment to spirituality,' 'Quick to argue,' and 'Increased use of drugs or alcohol' were removed because of low factor loadings (i.e., factor loadings under .32). Next, three additional items were removed: 'Disbelief' and 'Fatigue' were removed because of similarities in factor loadings across factors (i.e., less than .10 difference) while 'Worry' was removed because of low factor loadings (i.e., factor loadings under .32). Finally, two additional items were removed: 'Apathy' and 'Clenched jaws' were removed because of low factor loadings (i.e., factor loadings under .32). The resultant factor solution accounted for 50.69% of the variance. The factors were labeled as Factor 1: Physiological (e.g., gastric distress), Factor 2: Psychological (e.g., irritable), Factor 3: Physio-behavioral (e.g., prolonged high-effort coping with stressors and headaches), and Factor 4: Psycho-behavioral (e.g., changes in close family relationships and helplessness) (see Table F-4).

Table F- 1 *Racial battle fatigue items*

	Item wording
rbf_psy_1	How often were you frustrated?
rbf_psy_2	How often did an incident make you more aware of racism?
rbf_psy_3	How often did you become irritable?
rbf_psy_4	How often did your mood dramatically change?
rbf_psy_5	How often did you feel in shock?
rbf_psy_6	How often did you feel disappointed?
rbf_psy_7	How often were you agitated?
rbf_psyadd_1	Defensive?
rbf_psyadd_2	Apathy?
rbf_psyadd_3	Anger?
rbf_psyadd_4	Anxiety?
rbf_psyadd_5	Worry?
rbf_psyadd_6	Disbelief?
rbf_psyadd_7	Helplessness?
rbf_psyadd_8	Hopelessness?
rbf_psyadd_9	Fear?
rbf_behav_1	Ate more or less?
rbf_behav_2	Slept too much or too little?
rbf_behav_3	Procrastinate?
rbf_behav_4	Neglect your responsibilities?
rbf_beh2_1	Prolonged, high-effort coping with stressors?
rbf_beh2_2	Increased commitment to spirituality?
rbf_beh2_3	Felt impatient?
rbf_beh2_4	Quick to argue?
rbf_beh2_5	Increased use of drugs or alcohol?
rbf_beh2_6	Withdrew or isolated from others?
rbf_beh2_7	Poor school or job performance?
rbf_beh2_8	Changes in close family relationships?
rbf_phys_1	Muscle aches?
rbf_phys_2	Back pains?
rbf_phys_3	Sleep disturbances?
rbf_phys_4	Pains in joints?
rbf_phy2_1	Headaches?
rbf_phy2_2	Grinding teeth?
rbf_phy2_3	Clenched jaws?
rbf_phy2_4	Chest pain?
rbf_phy2_5	Shortness of breath?
rbf_phy2_6	Pounding heart?
rbf_phy2_7	High blood pressure?
rbf_phy2_8	Indigestion?

Table F-1 cont'd

	Item Wording
rbf_phy2_9	Gastric distress?
rbf_phy2_10	Constipation or Diarrhea?
rbf_phy2_11	Increased perspiration?
rbf_phy2_12	Intestinal problems?
rbf_phy2_13	Hives?
rbf_phy2_14	Rashes?
rbf_phy2_15	Fatigue?
rbf_phy2_16	Frequent illness?

Table F- 2 *Racial battle fatigue, means, standard deviations, and inter-item correlations*

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	pssyadd_1	pssyadd_2	pssyadd_3	pssyadd_4	pssyadd_5	pssyadd_6	pssyadd_7	pssyadd_8	pssyadd_9	behavv_1	behavv_2	behavv_3	behavv_4	behh2_1	behh2_2	behh2_3	behh2_4	behh2_5	behh2_6	behh2_7	behh2_8	physs_1	physs_2	physs_3	physs_4	phyy2_1	phyy2_2	phyy2_3	phyy2_4	phyy2_5	phyy2_6	phyy2_7	phyy2_8	phyy2_9	phyy2_10	phyy2_11	phyy2_12	phyy2_13	phyy2_14	phyy2_15	phyy2_16
psy_1																																																
psy_2	0.366																																															
psy_3	0.645	0.373																																														
psy_4	0.578	0.326	0.711																																													

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
psy_5	0.359	0.356	0.357	0.424																																												
psy_6	0.537	0.354	0.519	0.500	0.536																																											
psy_7	0.579	0.411	0.746	0.688	0.467	0.563																																										
psyadd_1	0.402	0.329	0.424	0.382	0.409	0.462	0.491																																									

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
psyadd_2	0.308	0.269	0.351	0.309	0.273	0.331	0.369	0.379																																								
psyadd_3	0.444	0.341	0.565	0.515	0.431	0.465	0.592	0.523	0.369																																							
psyadd_4	0.496	0.223	0.390	0.411	0.277	0.398	0.396	0.350	0.346	0.400																																						

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
psyadd_5	0.423	0.170	0.404	0.426	0.343	0.470	0.389	0.389	0.364	0.424	0.690																																					
psyadd_6	0.306	0.314	0.316	0.286	0.548	0.453	0.412	0.397	0.310	0.452	0.314	0.342																																				
psyadd_7	0.423	0.251	0.419	0.450	0.366	0.473	0.446	0.370	0.377	0.505	0.440	0.523	0.477																																			

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	behav2_1	behav2_2	behav2_3	behav2_4	behav2_5	behav2_6	behav2_7	behav2_8	phys_1	phys_2	phys_3	phys_4	phys2_1	phys2_2	phys2_3	phys2_4	phys2_5	phys2_6	phys2_7	phys2_8	phys2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
psy_1	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																			
psy_2	.	.	.	.	.	.	.	.	.	.	.	.	.	.																																			
psy_3	3	2	4	4	3	4	4	3	3	5	4	5	4	8																																			
psy_4	7	4	2	6	7	9	8	4	9	2	1	3	5	6																																			
psy_5	0	6	9	0	8	2	0	4	1	2	9	0	9	5																																			
psy_6																																																
psy_7																																																
psyadd_1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																		
psyadd_2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.																																		
psyadd_3	2	2	2	3	3	3	3	2	3	3	3	4	3	5	5																																		
psyadd_4	8	1	9	3	1	4	3	6	1	3	3	4	8	6	9																																		
psyadd_5	1	6	4	3	6	4	0	8	1	9	3	5	5	0	3																																		
psyadd_6																																																
psyadd_7																																																
psyadd_8																																																
psyadd_9																																																
behav_1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																
behav_2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.																																
behav_3	3	0	3	3	1	2	2	2	2	1	3	3	1	2	3	2	3																																
behav_4	4	7	0	4	7	7	7	2	2	7	9	6	1	9	0	5	0																																
behav2_1	7	5	6	1	5	8	4	8	1	1	9	0	0	4	9	0	0																																
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Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
behav_2	0.294	0.098	0.312	0.375	0.213	0.257	0.322	0.233	0.200	0.200	0.412	0.376	0.188	0.303	0.301	0.225	0.601																															
behav_3	0.333	0.110	0.329	0.294	0.183	0.243	0.270	0.225	0.198	0.165	0.250	0.241	0.110	0.234	0.219	0.223	0.335	0.420																														
behav_4	0.344	0.103	0.390	0.374	0.210	0.288	0.320	0.221	0.230	0.265	0.291	0.336	0.336	0.374	0.340	0.268	0.225	0.397	0.568																													

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9
beh2_1	0.369	0.164	0.371	0.422	0.270	0.343	0.288	0.289	0.205	0.289	0.346	0.358	0.234	0.393	0.309	0.249
beh2_2	0.149	0.111	0.141	0.112	0.160	0.179	0.126	0.083	0.045	0.085	0.045	0.038	0.121	0.076	0.066	0.033
beh2_3	0.460	0.178	0.483	0.470	0.231	0.391	0.437	0.372	0.300	0.411	0.359	0.333	0.307	0.348	0.322	0.339
beh2_4	0.264	0.176	0.371	0.427	0.170	0.234	0.418	0.313	0.159	0.357	0.193	0.229	0.188	0.225	0.213	0.158

	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8
beh2_1	0.398	0.352	0.311	0.341								
beh2_2	0.084	0.087	0.030	0.076	0.195							
beh2_3	0.275	0.325	0.310	0.296	0.401	0.218						
beh2_4	0.185	0.188	0.163	0.228	0.228	0.097	0.421					

	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
beh2_1																				
beh2_2																				
beh2_3																				
beh2_4																				

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9
beh2_5	0.188	0.112	0.262	0.258	0.128	0.196	0.268	0.146	0.182	0.217	0.194	0.183	0.140	0.270	0.308	0.212
beh2_6	0.391	0.202	0.403	0.431	0.253	0.359	0.398	0.267	0.278	0.293	0.407	0.341	0.242	0.412	0.411	0.247
beh2_7	0.354	0.201	0.387	0.332	0.258	0.323	0.340	0.304	0.308	0.364	0.292	0.296	0.293	0.427	0.391	0.275
beh2_8	0.208	0.127	0.213	0.262	0.253	0.281	0.221	0.197	0.268	0.296	0.227	0.231	0.335	0.391	0.397	0.288

	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4
beh2_5	0.246	0.176	0.214	0.281	0.261	0.017	0.245	0.235								
beh2_6	0.337	0.312	0.255	0.306	0.349	0.092	0.341	0.237	0.375							
beh2_7	0.283	0.328	0.330	0.481	0.301	0.082	0.351	0.250	0.414	0.527						
beh2_8	0.167	0.155	0.073	0.222	0.251	0.120	0.289	0.180	0.306	0.400	0.490					

	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
beh2_5																
beh2_6																
beh2_7																
beh2_8																

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8
phys_1	0.277	0.162	0.222	0.290	0.161	0.231	0.252	0.204	0.238	0.202	0.329	0.238	0.187	0.241	0.222	0.160	0.328	0.304	0.233	0.289	0.295	0.069	0.224	0.279	0.179	0.365	0.287	0.250
phys_2	0.234	0.112	0.234	0.304	0.181	0.184	0.249	0.235	0.158	0.233	0.323	0.289	0.184	0.224	0.217	0.174	0.285	0.339	0.259	0.261	0.322	0.111	0.258	0.226	0.130	0.252	0.231	0.158
phys_3	0.354	0.176	0.365	0.452	0.210	0.249	0.394	0.230	0.274	0.315	0.438	0.358	0.203	0.328	0.338	0.261	0.386	0.505	0.344	0.303	0.357	-0.009	0.354	0.243	0.270	0.421	0.345	0.256
phys_4	0.189	0.131	0.231	0.302	0.172	0.177	0.245	0.194	0.200	0.236	0.285	0.251	0.184	0.213	0.219	0.172	0.237	0.270	0.182	0.248	0.223	0.055	0.241	0.281	0.226	0.241	0.224	0.230

	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
phys_1	1.000																			
phys_2	0.619																			
phys_3	0.530	0.528																		
phys_4	0.671	0.643	0.539																	

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9
phy2_1	0.370	0.184	0.257	0.362	0.282	0.287	0.297	0.171	0.166	0.197	0.347	0.325	0.233	0.283	0.275	0.251
phy2_2	0.170	0.114	0.155	0.158	0.212	0.252	0.227	0.153	0.196	0.170	0.229	0.206	0.266	0.261	0.258	0.241
phy2_3	0.234	0.179	0.269	0.303	0.165	0.206	0.313	0.174	0.182	0.217	0.265	0.233	0.175	0.301	0.285	0.221
phy2_4	0.157	0.072	0.153	0.218	0.248	0.186	0.217	0.208	0.232	0.227	0.205	0.201	0.224	0.322	0.291	0.251

	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4
phy2_1	0.339	0.328	0.246	0.201	0.286	0.087	0.338	0.194	0.156	0.314	0.264	0.229	0.373	0.425	0.428	0.384
phy2_2	0.172	0.118	0.108	0.143	0.163	0.082	0.218	0.181	0.155	0.226	0.277	0.251	0.246	0.252	0.285	0.234
phy2_3	0.191	0.199	0.139	0.164	0.254	0.143	0.266	0.244	0.176	0.291	0.291	0.213	0.352	0.309	0.354	0.297
phy2_4	0.202	0.189	0.188	0.252	0.238	0.040	0.202	0.211	0.232	0.335	0.279	0.308	0.423	0.354	0.333	0.376

	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
phy2_1																
phy2_2	0.334															
phy2_3	0.361	0.678														
phy2_4	0.328	0.400	0.457													

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4
phy2_5	0.257	0.107	0.233	0.272	0.280	0.233	0.232	0.205	0.213	0.231	0.262	0.238	0.232	0.344	0.331	0.336	0.249	0.271	0.263	0.281
phy2_6	0.255	0.165	0.229	0.259	0.332	0.237	0.249	0.212	0.221	0.244	0.340	0.294	0.274	0.316	0.320	0.288	0.278	0.266	0.230	0.245
phy2_7	0.151	0.125	0.155	0.129	0.181	0.159	0.184	0.210	0.185	0.182	0.216	0.181	0.262	0.326	0.311	0.245	0.151	0.173	0.129	0.240
phy2_8	0.139	0.090	0.146	0.170	0.230	0.161	0.164	0.156	0.125	0.209	0.258	0.227	0.194	0.199	0.220	0.227	0.153	0.185	0.097	0.215

	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
phy2_5	0.223	0.157	0.243	0.135	0.244	0.308	0.272	0.320	0.363	0.389	0.370	0.492	0.405	0.314	0.386	0.567												
phy2_6	0.210	0.052	0.266	0.167	0.218	0.366	0.282	0.313	0.434	0.361	0.391	0.384	0.463	0.379	0.412	0.578	0.622											
phy2_7	0.275	0.106	0.146	0.125	0.237	0.281	0.292	0.273	0.315	0.257	0.261	0.234	0.231	0.305	0.317	0.413	0.420	0.450										
phy2_8	0.159	0.143	0.146	0.128	0.224	0.201	0.242	0.234	0.343	0.327	0.296	0.328	0.281	0.402	0.334	0.481	0.459	0.478	0.397									

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
phy2_9	0.128	0.055	0.119	0.181	0.205	0.131	0.122	0.179	0.186	0.216	0.237	0.203	0.155	0.203	0.253	0.210	0.144	0.165	0.153	0.191	0.152	0.164	0.112	0.108	0.229	0.175	0.247	0.191	0.304	0.327	0.284	0.288	0.250	0.304	0.242	0.414	0.353	0.386	0.383	0.715								
phy2_10	0.148	0.133	0.168	0.225	0.211	0.082	0.154	0.130	0.190	0.245	0.297	0.203	0.166	0.199	0.248	0.225	0.200	0.200	0.108	0.138	0.179	0.013	0.168	0.139	0.173	0.204	0.153	0.142	0.369	0.320	0.362	0.346	0.267	0.246	0.275	0.378	0.420	0.451	0.292	0.575	0.637							
phy2_11	0.213	0.105	0.159	0.166	0.212	0.223	0.170	0.123	0.173	0.182	0.311	0.203	0.145	0.170	0.245	0.221	0.190	0.215	0.147	0.137	0.108	0.052	0.159	0.063	0.145	0.224	0.160	0.165	0.284	0.294	0.271	0.261	0.272	0.336	0.244	0.232	0.391	0.429	0.314	0.413	0.487	0.436						

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
phy2_12	0.111	0.094	0.086	0.150	0.161	0.053	0.082	0.091	0.151	0.173	0.197	0.145	0.176	0.217	0.233	0.169	0.160	0.164	0.165	0.079	0.146	0.108	0.021	0.047	0.160	0.188	0.144	0.176	0.272	0.295	0.294	0.296	0.171	0.272	0.232	0.208	0.467	0.365	0.362	0.357	0.693	0.634	0.435					
phy2_13	0.071	0.077	0.084	0.099	0.078	0.007	0.109	0.100	0.150	0.068	0.092	0.087	0.166	0.168	0.178	0.266	0.052	0.050	0.110	0.150	0.117	0.101	0.105	0.142	0.156	0.219	0.216	0.188	0.239	0.207	0.158	0.162	0.133	0.120	0.162	0.246	0.343	0.328	0.206	0.337	0.391	0.250	0.225	0.313				
phy2_14	0.109	0.097	0.123	0.106	0.097	0.054	0.089	0.106	0.163	0.111	0.123	0.090	0.140	0.147	0.180	0.212	0.117	0.112	0.138	0.143	0.123	0.086	0.115	0.118	0.157	0.184	0.205	0.197	0.252	0.236	0.269	0.211	0.187	0.183	0.238	0.308	0.318	0.252	0.264	0.329	0.304	0.368	0.244	0.307	0.671			

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9
phy2_15	0.348	0.199	0.341	0.378	0.186	0.268	0.247	0.207	0.166	0.276	0.361	0.330	0.104	0.259	0.246	0.147
phy2_16	0.233	0.198	0.206	0.246	0.201	0.160	0.209	0.125	0.200	0.171	0.264	0.176	0.204	0.287	0.286	0.197
M	3.64	3.32	3.31	3.08	2.57	3.29	3.12	3.05	2.84	2.79	3.60	3.46	2.76	2.58	2.49	2.48

	behav_1	behav_2	behav_3	behav_4	beh2_1	beh2_2	beh2_3	beh2_4	beh2_5	beh2_6	beh2_7	beh2_8	phys_1	phys_2	phys_3	phys_4
phy2_15	0.342	0.365	0.293	0.276	0.285	0.067	0.297	0.195	0.223	0.363	0.315	0.229	0.382	0.383	0.464	0.374
phy2_16	0.202	0.226	0.183	0.216	0.215	0.031	0.182	0.240	0.321	0.303	0.337	0.207	0.362	0.332	0.345	0.301
M	3.42	3.85	4.02	3.11	3.05	2.96	3.27	2.22	2.55	3.14	2.08	2.53	2.30	2.84	3.80	2.22

	phy2_1	phy2_2	phy2_3	phy2_4	phy2_5	phy2_6	phy2_7	phy2_8	phy2_9	phy2_10	phy2_11	phy2_12	phy2_13	phy2_14	phy2_15	phy2_16
phy2_15	0.419	0.286	0.344	0.376	0.392	0.448	0.248	0.393	0.365	0.438	0.358	0.347	0.190	0.271		
phy2_16	0.356	0.303	0.307	0.365	0.389	0.345	0.266	0.348	0.302	0.346	0.311	0.337	0.376	0.395	0.459	
M	3.41	2.00	2.32	2.09	2.19	2.32	1.57	1.95	1.85	2.14	2.00	1.69	1.33	1.46	2.85	1.90

Table F-2 cont'd

	psy_1	psy_2	psy_3	psy_4	psy_5	psy_6	psy_7	psyadd_1	psyadd_2	psyadd_3	psyadd_4	psyadd_5	psyadd_6	psyadd_7	psyadd_8	psyadd_9	behav_1	behav_2	behav_3	behav_4	behhay_1	behhay_2	behhay_3	behhay_4	behhay_5	behhay_6	behhay_7	behhay_8	physs_1	physs_2	physs_3	physs_4	physs_5	physs_6	physs_7	physs_8	physs_9	phyhay2_10	phyhay2_11	phyhay2_12	phyhay2_13	phyhay2_14	phyhay2_15	phyhay2_16
	0.9	1.0	1.0	1.1	1.1	1.0	1.0	1.1	1.0	1.0	1.2	1.2	1.1	1.3	1.2	1.1	1.1	1.0	1.9	1.2	1.1	1.3	1.1	1.0	1.2	1.3	1.1	1.2	1.2	1.3	1.3	1.2	1.2	1.2	1.3	1.2	1.2	1.2	1.8	1.2	1.1	1.2	1.0	1.7	1.9	1.4	1.1
S	8	7	9	7	0	5	9	2	3	9	7	3	0	0	8	9	6	9	9	3	5	0	1	8	7	2	7	0	5	2	2	8	8	4	4	1	4	4	9	0	5	1	5	5	7	0	4	5
D	3	3	6	8	8	6	7	8	1	7	3	9	2	3	7	2	7	4	1	5	2	5	3	5	9	4	4	2	9	3	0	9	3	5	9	3	6	4	2	3	4	9	8	5	3	3	7	8

Table F- 3 *Racial battle fatigue initial factor loadings*

	Factor											Communalities
	1	2	3	4	5	6	7	8	9	10	11	
rbf_psy_1	.626											.594
rbf_psy_2	.565											.322
rbf_psy_3	.928											.711
rbf_psy_4	.788											.677
rbf_psy_5	.449									.323	.526	.518
rbf_psy_6	.497										.350	.578
rbf_psy_7	.913											.719
rbf_psyadd_1	.480										.351	.454
rbf_psyadd_2												.328
rbf_psyadd_3	.643											.572
rbf_psyadd_4									.782			.609
rbf_psyadd_5				.304					.653			.624
rbf_psyadd_6											.510	.503
rbf_psyadd_7				.793								.802
rbf_psyadd_8				.893								.813
rbf_psyadd_9				.554								.478
rbf_behav_1					.348				.412			.494
rbf_behav_2					.465				.369			.543
rbf_behav_3					.754							.459
rbf_behav_4					.699							.503
rbf_beh2_1					.262							.434
rbf_beh2_2												.194
rbf_beh2_3	.398											.490
rbf_beh2_4	.477											.367

Table F-3 cont'd

	Factor											Communalities
	1	2	3	4	5	6	7	8	9	10	11	
rbf_beh2_5					.556							.334
rbf_beh2_6					.615							.490
rbf_beh2_7					.808							.551
rbf_beh2_8					.677							.413
rbf_phys_1		.742										.628
rbf_phys_2		.757										.567
rbf_phys_3		.423										.578
rbf_phys_4		.924										.613
rbf_phy2_1									.417			.445
rbf_phy2_2						.825						.584
rbf_phy2_3						.836						.597
rbf_phy2_4									.417			.540
rbf_phy2_5									.720			.580
rbf_phy2_6									.720			.595
rbf_phy2_7												.393
rbf_phy2_8	.742											.660
rbf_phy2_9	.944											.690
rbf_phy2_10	.694											.611
rbf_phy2_11	.408											.421
rbf_phy2_12	.844											.632
rbf_phy2_13							.884					.557
rbf_phy2_14							.784					.535
rbf_phy2_15												.514
rbf_phy2_16							.267					.453

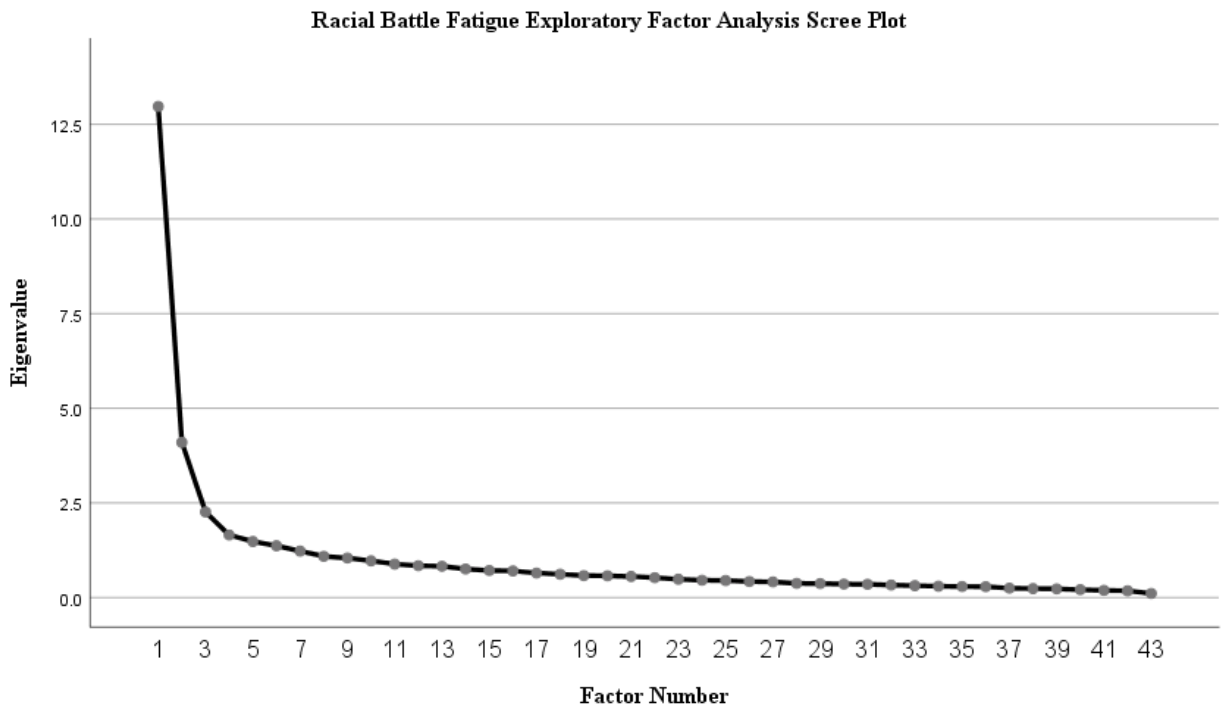

Figure F- 1 *Racial battle fatigue exploratory factor analysis scree plot*

Table F- 4 *Racial battle fatigue final four factor structure*

	Factor				Communalities
	Physiological (PHY)	Psychological (PSY)	Physio-behavioral (BPHY)	Psycho-behavioral (BPSY)	
rbf_psy_1		0.603			.564
rbf_psy_2		0.546			.287
rbf_psy_3		0.756			.703
rbf_psy_4		0.664			.647
rbf_psy_5		0.548			.430
rbf_psy_6		0.633			.554
rbf_psy_7		0.822			.700
rbf_psyadd_1		0.543			.416
rbf_psyadd_3		0.698			.545
rbf_psyadd_7				0.703	.797
rbf_psyadd_8		0.266		0.661	.804
rbf_psyadd_9				0.519	.428
rbf_behav_1			0.601		.465
rbf_behav_2			0.674		.519
rbf_behav_3			0.546		.443
rbf_behav_4			0.462	0.301	.490
rbf_beh2_1			0.407		.398
rbf_beh2_7				0.406	.489
rbf_beh2_8				0.425	.378
rbf_phys_1			0.648		.604

Table F-4 cont'd

	Factor				Communalities
	Physiological (PHY)	Psychological (PSY)	Physio-behavioral (BPHY)	Psycho-behavioral (BPSY)	
rbf_phys_2			0.659		.553
rbf_phys_3			0.663		.553
rbf_phys_4	0.262		0.599		.596
rbf_phy2_1			0.434		.426
rbf_phy2_2	0.379				.333
rbf_phy2_4	0.513				.511
rbf_phy2_5	0.45				.557
rbf_phy2_6	0.49				.580
rbf_phy2_7	0.419			0.308	.385
rbf_phy2_8	0.829				.643
rbf_phy2_9	0.824				.683
rbf_phy2_10	0.751				.592
rbf_phy2_11	0.551				.398
rbf_phy2_12	0.816				.622
rbf_phy2_13	0.441			0.304	.547
rbf_phy2_14	0.446				.530
rbf_phy2_16	0.362				.379
Eigenvalue	11.20	3.87	2.08	1.60	
Variance (%)	30.26	10.47	5.63	4.33	

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