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Addressing Racial Stress Among Black Undergraduate Students

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Counseling, Clinical, and School Psychology

By

Isabelle M. Fleury

Committee in charge:

Professor Erin Dowdy, chair

Professor Alison Cerezo

Professor Jon Goodwin

Professor Andrew Maul

December 2023

The dissertation of Isabelle M. Fleury is approved.

Alison Cerezo

Jon Goodwin

Andrew Maul

Erin Dowdy, Committee Chair

June 2023

Addressing Racial Stress Among Black Undergraduate Students

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by

Isabelle M. Fleury

Curriculum Vitae

ISABELLE M. FLEURY

EDUCATION

University of California, Santa Barbara – Santa Barbara, CA

M.Ed. in Counseling, Clinical, and School Psychology

Sept 2017 - June 2019

Ph.D. in Counseling, Clinical, and School Psychology

Sept 2017 – Dec 2023

Degree emphasis in School Psychology

Interdisciplinary emphasis in Quantitative Methods in the Social Sciences

Dissertation: “**Addressing Racial Stress Among Black Undergraduate Students**”

Rutgers University – New Brunswick, NJ

B.A. in Psychology

Sept 2012 - May 2016

Minor: Business Administration

Dean’s List: Fall 2015, Spring 2016

RESEARCH EXPERIENCE

Doctoral Dissertation: Addressing Racial Stress Among Black Undergraduate Students

University of California, Santa Barbara – Santa Barbara, CA

Graduate Student Researcher

Oct 2021 – June 2023

Supervisor: Dr. Erin Dowdy

- Developed a dissertation study that focused on the potential of screening Black college and university students for racial stress with the aim of assisting campus practitioners and administrators in connecting students to culturally appropriate and accessible mental health supports
- Recruited Black undergraduate student participants to complete an adapted screener intended to measure levels of racial stress and a feedback survey on the importance, appropriateness, utility, and feasibility of campus screening for racial stress
- Analyzed participant data with quantitative and qualitative methods to examine the validity of an adapted screener of racial stress and to report on the perspectives that Black undergraduate students have about the potential of racial stress screening

Project Act Early

University of California, Santa Barbara – Santa Barbara, CA

Graduate Student Researcher

Sept 2017 - June 2022

Supervisor: Dr. Erin Dowdy

- Conducted independent and collaborative research funded by the Institute of Education Sciences to investigate the validity of the BASC-3 Behavioral and Emotional Screening

System as part of universal screening practices in Santa Barbara preschools and elementary schools

- Consulted with families and school personnel regarding social, emotional, and behavioral strengths and weaknesses of preschool, kindergarten, and 1st grade students
- Supervised and collaborated with undergraduate research assistants to manage data entry, materials, and general lab organization

Stanley Lab for Computational Social Neuroscience

Adelphi University – Garden City, NY

Research Scholar

Oct 2016 - Sept 2017

Supervisor: Dr. Damian Stanley

- Studied implicit bias in addition to the general and specific neural computations for learning about others with the use of electroencephalogram (EEG) technology
- Designed experiment procedure using E-Prime software and trained research personnel on EEG protocol
- Drafted internal grant proposals, conducted literature reviews, and created lab website

Behavioral Health Integration Program (BHIP) & Trauma Informed Care Program (TIC)

Montefiore Medical Group – Bronx, NY

Research Assistant

June 2016 - June 2017

Supervisors: Dr. Miguelina German, Dr. Rahil Briggs

- Entered, cleaned, and analyzed patient data from the Adverse Childhood Experiences (ACEs) and the Burnout, Compassion Fatigue and Vicarious Trauma Assessment as part of universal mental health screening implementation in a primary care setting
- Provided psychoeducation to hospital personnel – including primary care providers, nurse practitioners, and patient service representatives – to understand the physical health risks associated with untreated childhood trauma and strategies for helping patients affected by trauma
- Worked with an incredibly large, diverse, and underserved population in urban setting to integrate mental health treatment within primary care with the goal of removing stigma associated with behavioral health care
- Recruited new research and clinical assistants, which included organizing application materials, screening and communicating with potential hires, and scheduling interviews

CLINICAL EXPERIENCE

APA Accredited Internship: Illinois School Psychology Internship Consortium

Township High School District 211 – Schaumburg, IL

Pre-Doctoral Psychology Intern

Aug 2022 - July 2023

Supervisor: Dr. Nate Elzinga

- Provided therapeutic, consultative, and assessment services to students in a fast-paced, large innovative high school with diverse social, emotional, medical, and functional needs

- Engaged within the continuum of general and special education services by conducting case study evaluations, comprehensive psychological reports, individual therapy, and group therapy
- Collaborated with multidisciplinary teams to meet school and district-level prevention and intervention efforts, including crisis intervention, threat assessment, suicide assessment, and mandated reporting

The Healing Space

Hosford Counseling & Psychological Services Clinic – Santa Barbara, CA

Doctoral Student Clinician

Sept 2020 - June 2022

Supervisors: Dr. Alison Cerezo and Dr. Steve Smith

- Provided in-person and telehealth psychological services, including individual and group therapy, to Black clients of all ages to aid in healing from racial trauma, marginalization, social injustice, health disparities, general stressors, and other life issues
- Delivered therapeutic and psychoeducational services to address the negative toll of anti-Black racism on Black students and residents in the local Santa Barbara community and larger central California area
- Engaged in the development, recruitment, outreach, and marketing of a new specialty clinic designed for Black therapists to provide therapeutic services to the Black community

Trauma, Adversity, Resilience, and Prevention (TARP) Program

Hosford Counseling & Psychological Services Clinic – Santa Barbara, CA

Doctoral Student Clinician

Sept 2020 - June 2022

Supervisors: Dr. Maryam Kia-Keating and Dr. Steve Smith

- Screened parents and children for Adverse Childhood Experiences (ACEs) and administered intake assessments to identify potential barriers to care, ensure service access, and promote treatment outcomes
- Provided outpatient therapy for adults, adolescents, or children with reported ACEs, including a short-term parenting prevention program curriculum
- Provided psychoeducation, crisis intervention, resources, and support services to families in need as well as support services to staff and professionals on multidisciplinary teams

Cold Spring School

Cold Spring School District – Santa Barbara, CA

School Psychology Extern

Aug 2019 - June 2020

Supervisors: Dr. Eve Kelemen and Dr. Shane Jimerson

- Delivered school-based assessment, counseling, and mental health services to special education and general education elementary students, including remote services during COVID-19
- Developed social-emotional learning and skills building interventions within a multi-tiered systems of support (MTSS) framework
- Provided psychoeducation and consultation to support teachers, school personnel, and families in the community

The McEnroe Reading and Language Arts Clinic

University of California, Santa Barbara – Santa Barbara, CA

Graduate Student Assessment Specialist

Jan 2018 - Oct 2019

Supervisors: Dr. Diana Arya and Dr. Erin Dowdy

- Administered academic and cognitive processing assessments to determine instructional next steps for school-aged youth tutoring services
- Presented assessment results to clinic team and parent clients in clear and effective terms
- Provided strategies and intervention for strengthening literacy-based skills with school-aged youth

McKinley and Monroe Elementary Schools

Santa Barbara Unified School District – Santa Barbara, CA

School Psychology Practicum Student

Aug 2018 - June 2019

Supervisors: Melissa Quigley, Dr. Chunyan Yang, and Dr. Jill Sharkey

- Provided school-based psychoeducational assessment, counseling, and social-emotional skills intervention to elementary school students
- Contributed to multidisciplinary team reports to provide evidence of student eligibility for special education and mental health services
- Designed, piloted, and evaluated a school-based Reading Buddy academic literacy intervention

Hosford Counseling & Psychological Services Clinic

University of California, Santa Barbara – Santa Barbara, CA

Basic Practicum Clinician-in-training

Jan 2018 - June 2018

Supervisor: Dr. Heidi Zetzer

- Provided psychotherapy to undergraduate students with direct training from advanced doctoral student supervisors and the faculty supervisor
- Applied psychological theory and evidence-based treatment in university mental health setting
- Participated in weekly group supervision to discuss cases, treatments, and outcomes of therapy

TEACHING EXPERIENCE

Psychology of Gender

Dept. of Counseling, Clinical, and School Psychology - University of California, Santa Barbara

Teaching Assistant to Dr. Heidi Zetzer

Mar 2022 - June 2022

Instructor of Record

Aug 2020 - Sept 2020

Teaching Assistant to Dr. Erika Felix

Mar 2020 - June 2020

Positive Psychology Across the Lifespan

University of California, Santa Barbara – Dept. of Counseling, Clinical, and School Psychology

Teaching Assistant to Dr. Heidi Zetzer

Jan 2022 - Mar 2022

Introduction to Helping Skills: Theory, Research, and Practice

University of California, Santa Barbara – Dept. of Counseling, Clinical, and School Psychology

Teaching Assistant to Dr. Jon Goodwin

Mar 2021 - June 2021

Introduction to African American Studies

University of California, Santa Barbara - Department of Black Studies

Teaching Assistant to Dr. Terrance Wooten

Sept 2019 - Sept 2020

PUBLICATIONS

Moore, S.A., Dowdy, E., **Fleury, I.**, DiStefano, C., & Greer, F.W. (2021) Comparing informants for mental health screening at the preschool level. *School Psychology Review*.

<https://doi.org/10.1080/2372966X.2020.1841546>

Fleury, I., & Dowdy, E. (2020). Social media monitoring of students for harm and threat prevention: Ethical considerations for school psychologists. *Contemporary School Psychology*, 1-10.

<https://doi.org/10.1007/s40688-020-00311-y>

Bertone, A., Moffa, K., Wagle, R., **Fleury, I.**, & Dowdy, E. (2019). Considerations for mental health screening with Latinx dual language learners. *Contemporary School Psychology*, 23(1), 20–30.

<https://doi.org/10.1007/s40688-018-0205-y>

CONFERENCE PRESENTATIONS

Fleury, I., Hinton, T., Hinojosa, G., Pollard, A., Amirazizi, S., Spiess, M., Dowdy, E., & Hutchinson, S. (2023). *Evaluating measurement and social validity of racial stress screening*. Paper accepted to the National Association of School Psychologists Annual Convention, Denver, CO.

Spiess, M., Amirazizi, S., **Fleury, I.**, Hinojosa, G., Dowdy, E., & Sharkey, J. (2023). *Transformative SEL: Are your SEL practices appropriate for minoritized students?* Paper accepted to the National Association of School Psychologists Annual Convention, Denver, CO.

Hinton, T., **Fleury, I.**, Hinojosa, G., Dowdy, E., Spiess, M., & Amirazizi, S. (2023). *Career choice satisfaction of Black students in school psychology programs*. Paper accepted to the National Association of School Psychologists Annual Convention, Denver, CO.

Amirazizi, S., Spiess, M., Hinojosa, G., Hutchinson, S., Dowdy, E., Hinton, T., & **Fleury, I.** (2023). *Exploration of protective factors on parental stress and school readiness*. Poster accepted to the National Association of School Psychologists Annual Convention, Denver, CO.

Pollard, A., Hinojosa, G., & **Fleury, I.** (2023). *A Black perspective: Supporting student well-being and racial identity development*. Practitioner conversation accepted to the National Association of School Psychologists Annual Convention, Denver, CO.

Fleury, I., Amirazizi, S., & Spiess, M. (2022). *Examining the Spanish and English BASC-3 BESS Parent-Preschool forms* [Poster session canceled]. Poster accepted to the National Association of School Psychologists Annual Convention, Boston, MA.

- Amirazizi, S., Edelman, E., **Fleury, I.**, & Spiess, M. (2022). *Parental self-efficacy: Impact of a brief school readiness parent intervention* [Poster session canceled]. Poster accepted to the National Association of School Psychologists Annual Convention, Boston, MA.
- Amirazizi, S., **Fleury, I.**, & Spiess, M. (2022). *Role of adverse childhood experiences (ACES) in the school system: Ethical and legal considerations* [Poster session canceled]. Poster accepted to the National Association of School Psychologists Annual Convention, Boston, MA.
- Fleury, I.**, Wagle, R., Hinton, T., Bertone, A., Dowdy, E., DiStefano, C., & Greer, F. (2020). *Convergent validity of the Spanish BESS-Parent Preschool form*. Poster presented at the National Association of School Psychologists Annual Convention, Baltimore, MD.
- Moore, S., **Fleury, I.**, Dowdy, E., DiStefano, C., & Greer, F. (2020). *Comparing informants for mental health screening at the preschool level*. Poster presented at the National Association of School Psychologists Annual Convention, Baltimore, MD.
- Amirazizi, S., **Fleury, I.**, Hinton, T., Wagle, R., Bertone, A., Moffa, K., & Dowdy, E. (2020). *Considerations for mental health screening with Latinx dual language learners*. Paper presented at the National Association of School Psychologists Annual Convention, Baltimore, MD.
- Moore, S., Dowdy, E., **Fleury, I.**, DiStefano, C., Greer, F., & Furlong, M.J. (2019). *Comparing informants for mental health screening at the preschool level: Preliminary results*. Poster presented at the Annual Conference on Advancing School Mental Health, Austin, TX.
- Fleury, I.**, Bertone, A., Alvarenga, C., Lopez, J., & Dowdy, E. (2019). *Social validity of universal mental health screening in preschool through first grade*. Poster presented at the California Association of School Psychologists Annual Convention, Long Beach, CA.

WORKSHOPS AND OTHER PRESENTATIONS

- Fleury, I.** (2022). *Critical thinking about research: Measuring racial stress*. [Guest Lecture]. University of Washington, Seattle, WA.
- Fleury, I.** (2022). *Addressing racial stress of Black undergraduate students*. Keynote speech at the UCSB Student Mental Health Conference, Santa Barbara, CA.
- Fleury, I.** (2022). *Psychology of gender: Intelligence and cognitive abilities* [Guest Lecture]. University of California, Santa Barbara, Santa Barbara, CA.
- Fleury, I.** (2022). *Positive psychology across the lifespan: Mindfulness* [Guest Lecture]. University of California, Santa Barbara, Santa Barbara, CA.
- Garcia, C., Feinberg, D., **Fleury, I.** (2018). *Strategies for success in upper elementary school: Tools and resources for building your child's skills in organization, homework completion, and long-term project management* [Workshop]. Goleta Valley Library, Goleta, CA.
- Fleury, I.** (2018). *Research in applied psychology: Measures* [Guest Lecture]. University of California, Santa Barbara, Santa Barbara, CA.

ASSESSMENTS ADMINISTERED

Beck Youth Inventories
Beery-Buktenica Developmental Test of Visual-Motor Integration, 6th Edition
Behavior Assessment System for Children, 3rd Edition
Children's Depression Inventory
Comprehensive Test of Phonological Processing, 2nd Edition
Conners, 3rd Edition
Feifer Assessment of Reading
Gray Oral Reading Tests, 5th Edition
Kaufman Assessment Battery for Children, 2nd Edition
Multidimensional Anxiety Scale for Children
Peabody Picture Vocabulary Test, 4th Edition
Test of Word Reading Efficiency, 2nd Edition
Wechsler Adult Intelligence Scale, 4th Edition
Wechsler Individual Achievement Test, 4th Edition
Wechsler Intelligence Scale for Children, 5th Edition
Wide Range Assessment of Memory and Learning, 2nd Edition
Woodcock Johnson Tests of Achievement, 4th Edition
Woodcock Johnson Tests of Cognitive Ability, 4th Edition

PROFESSIONAL AFFILIATIONS

Student Member of the American Psychological Association
Student Member of the National Association of School Psychologists
Graduate Student Mentor for UCSB Graduate Scholars Program
UCSB Black Graduate Student Association
Student Co-reviewer for School Mental Health

AWARDS AND FUNDING

Academic Senate Travel Grant , University of California, Santa Barbara	Jan 2023
Kennedy/Graves Award , University of California, Santa Barbara	May 2021
Hosford Memorial Fellowship , University of California, Santa Barbara	May 2021
CCSP First Year Fellowship , University of California, Santa Barbara	May 2017
James Dickson Carr Scholarship , Rutgers University	Sept 2012

ABSTRACT

Addressing Racial Stress Among Black Undergraduate Students

By

Isabelle M. Fleury

The recognition of racism as a social determinant of health, with particularly strong impacts on mental health, highlights the need to take concrete action to address the effects of racial stress among Black Americans (Paine et al., 2021; Paradies et al., 2015). Black undergraduate students are particularly vulnerable to the effects of racism because, in addition to the general stressors associated with the transition to college, they are faced with the unique stressors of anti-Black racism and discrimination on- and off-campus (Mushonga, 2020). These racial stressors can lead to impacts on physical, mental, functional, social, and spiritual aspects of well-being (Harrell, 2000).

Racial stress screening is proposed here as the first step in a data-driven strategy for identifying Black undergraduate students experiencing racial stress, with the goal of informing delivery of direct mental health services, implementation of campus-wide interventions or programming, and referral of students to off-campus supports. A researcher-adapted rating scale, the Racial Stress Survey for Black Undergraduates (RSS-BU), was used

as the measure of racial stress in the current study. The RSS-BU consists of 30 items across four domains: *Cultural Racism*, *Individual Racism*, *Institutional Racism*, and *Campus Racism*. Additionally, the researcher-developed Social Validity Questionnaire (SVQ), consisting of five Likert-type questions and two open-response questions, was used to gather participant perspectives on screening.

The goal of the current study was to pilot campus-based racial stress screening in an online format. The researcher used a pragmatic interpretive framework and mixed-methodology to answer the three following research questions: (a) what scores did Black undergraduate student participants receive after completing the RSS-BU and did these scores differ across gender, historically Black college and university (HBCU) affiliation, and generational status?; (b) is the RSS-BU effective in measuring the racial stress of Black undergraduate students and does it measure racial stress equivalently across gender, HBCU affiliation, and generational status?; and (c) what perspectives do Black undergraduate students have on campus-based racial stress screening?

The $N = 122$ Black undergraduate participants in this study reported experiencing at least some level of racial stress. Participants reported relatively higher levels of racial stress in the Cultural Racism domain ($M = 29.49$, $SD = 7.97$) and relatively lower levels in the Institutional Racism domain ($M = 8.43$, $SD = 6.26$). Results from independent samples t -tests revealed significant differences in RSS-BU scores across gender and HBCU affiliation, but not for generational status.

The Rasch Rating Scale Model (RSM) and Rasch Many-Facets Model (MFM) were used to investigate the measurement utility of the RSS-BU (Rasch, 1960; Andrich, 1978; Linacre, 1989, 1994). Five RSS-BU items produced too much variation in participant

responses (i.e., underfit) and seven items produced too little variation (i.e., overfit) than expected by the Rasch RSM. Results from the Rasch MFM revealed evidence of differential item functioning (DIF) across all RSS-BU items except one, meaning that these items did not equivalently measure the construct of racial stress across the specified demographic groups (i.e., gender, generational status, and HBCU affiliation).

Results based on scores from the SVQ revealed that, overall, the $N = 122$ Black undergraduate participants think it is important to ask Black students about racial stress ($M = 4.47$, $SD = 0.75$). Participants reported that they would be willing to complete a measure like the RSS-BU as part of campus-based screening ($M = 4.08$, $SD = 1.01$), but were somewhat less interested in being connected to mental health supports for their own racial stress ($M = 3.72$, $SD = 1.35$).

The six-step thematic analysis process outlined by Braun and Clarke (2006) was used to analyze qualitative response data from the two open-ended questions on the SVQ. Thematic analysis resulted in five thematic domains—(a) Racial Stress in Higher Education, (b) Campus Support Services, (c) Perspectives on Screening, (d) Procedural Considerations for Screening, and (e) Feedback on Study—with subsequent themes and sub-themes.

The main findings of the current study provide support for the implications of using screening to inform culturally responsive campus practices and using mixed-methodology to develop screening tools. Limitations and future directions of this study are also discussed. Ultimately, the goal of campus-based screening is to guide service delivery for addressing racial stress among Black undergraduate students.

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Chapter 1

INTRODUCTION

#BlackLivesMatter

Within one year of May 25th, 2020—when Minneapolis police officer, Derek Chauvin, murdered George Floyd—leaders of various states, counties, cities, and public health institutions in the United States made over 180 declarations that racism is a public health emergency (Paine et al., 2021). This push to declare racism as a public health issue is likely due, in part, to a resurgence of Black Lives Matter (BLM), a decentralized anti-racism movement. BLM gained public attention in 2013, when Patrisse Cullors first tweeted the hashtag #BlackLivesMatter as a reaction to the acquittal of George Zimmerman after he killed 17-year-old Trayvon Martin. Inspired by the Civil Rights and Black Power Movements of years past, BLM has since been a driving force of much of the anti-racism dialogue that continues today (Paine et al., 2021).

The disproportionate impact of the COVID-19 virus on the Black population in the United States has also driven declarations for racism as a public health crisis (Paine et al., 2021). Even though Black people make up about 13% of the United States population, disparities were evident in that one in three people hospitalized for COVID-19 were Black. Additionally, the disparity in COVID-19 mortality rates is likely due to underlying health and socioeconomic conditions that placed Black people at increased risk for contracting the virus (Vandiver, 2020). The spotlight on these issues over previous years highlights the growing body of evidence demonstrating how racism functions as a social determinant of health, with even stronger impacts on mental rather than physical health outcomes (Paradies et al., 2015)

Social determinants of health are defined by the Centers for Disease Control and Prevention (CDC, 2022) as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life” (para. 1). Racism is one of these conditions that structures society to lend advantages and disadvantages based on one’s assigned race (Paine et al., 2021). The social hierarchy and resulting inequities created by racism can be perpetuated on structural, cultural, and interpersonal levels through beliefs, stereotypes, prejudices, and discrimination (García & Sharif, 2015; Paradies et al., 2015). The chronic and acute stressors that Black people are disproportionately exposed to in their environments often involve or are the result of racism (Clark et al., 1999).

Racial stress is defined as “the race-related transactions between individuals or groups and their environment that emerge from the dynamics of racism, and that are perceived to tax or exceed existing individual and collective resources or threaten well-being” (Harrell, 2000, p. 44). Documented health outcomes associated with anti-Black racism include depression, anxiety, obesity, post-traumatic stress disorder (PTSD), psychosis, heart disease, stroke, high blood pressure, chronic lung disease, diabetes, asthma, and substance misuse, as well as shorter life expectancy and higher infant mortality rates (García & Sharif, 2015; Gómez, 2015; Paradies et al., 2015; Vandiver, 2020; Wright et al., 2020). Despite the resilience that Black people generally develop in response to repeated experiences with racism, the long-term health effects can remain significant over time (Paradies et al., 2015).

Declarations of racism as a public health crisis are not new and are unlikely to bring about meaningful change without collaborative efforts among policymakers, health

practitioners, school administrators, community organizers, and researchers (García & Sharif, 2015; Paine et al., 2021). Steps taken to address systemic issues (e.g., police brutality, education disparities, housing segregation, employment and salary disparities, and environmental toxicity) should include concrete, actionable plans (Paine et al., 2021; Wright et al., 2020). Diversity, equity, and inclusion (DEI) initiatives, such as the ones in colleges and universities, may give the impression that things are improving. But these actions are superficial if not coupled with the implementation of necessary supports and structural changes to avoid repeating harmful, historical patterns that affect the health and well-being of Black people (Paine et al., 2021).

#BlackStudentsMatter

Black undergraduate students, whose enrollment in higher education has continued to increase over time in the United States, are more likely to experience racial stress than those who are not college educated (M. Anderson, 2019). According to a Pew Research Center study, 81% of Black Americans with at least some college background reported experiencing occasional racial discrimination and 17% reported regular occurrences of discrimination. On the other hand, of those with a high school or lower education, 69% reported occasional and 9% reported regular experiences with discrimination (M. Anderson, 2019). The types of racist situations that college educated Black Americans report having experienced more often than those who were not college educated included: others acting as if they were suspicious, others acting as if they were not smart, being subjected to racist slurs or jokes, fearing for their personal safety, and being racially profiled by the police (M. Anderson, 2019). Interpersonal racism is commonly experienced in addition to the general stressors that undergraduate students experience as they go through their schooling.

The transition from late adolescence to young adulthood that typically occurs when one attends college is a crucial point in the developmental process (Barnett et al., 2019). However, this transitional period presents with many unique stressors for Black students as they navigate their educational institutions (Bernard et al., 2020). Black students may also deal with the racism, discrimination, isolation, hostile campus climates, and limited access to institutional resources that commonly accompanies the Black experience in college and university (Bernard et al., 2020; Mushonga, 2020). Racial stressors, especially those of greater frequency, may place Black undergraduate students at higher risk of developing psychological distress, suicidal ideation, depression, PTSD, and substance-use disorder, as well as higher likelihood of school dropout (Mushonga, 2020; Paradies et al., 2015).

An intersectional framework recognizes that the experiences Black undergraduate students have with racial stress likely varies due to their own unique social identities. For example, Black women may deal with the compounding effects of both racial and gender discrimination, which can lend itself to different forms of racial stress than what Black men may experience (M. Anderson, 2019; Busby et al., 2021). Likewise, the racial stress of Black first-generation students (i.e., the first in their family to attend college or university) may be exacerbated by difficulties with navigating systems of higher education (Fry, 2021). Additionally, Black students attending predominantly White institutions (PWIs) may face even more challenges than those attending historically Black colleges and universities (HBCUs; Cadaret & Speight, 2018).

Though it is evident that Black college students would likely benefit from increased support to navigate these various stressors, there are still other obstacles that prevent or discourage them from seeking help. Black college students have reported limited cultural

sensitivity among mental health providers as reasons to instead seek support from nonprofessionals, such as family members, friends, or clergy (Busby et al., 2021). Additionally, social stigma (i.e., prejudice towards those that seek mental health care) is a strong deterrent for Black college students in seeking help for psychological distress (Cadaret & Speight, 2018). Given the history of racist treatment by researchers and medical practitioners against Black Americans, it is not surprising that Black college students experience fear, cultural mistrust, and stigma in relation to mental health care (Nuriddin et al., 2020).

A study conducted by Busby and colleagues (2021) suggests that increased academic and financial demands associated with college attendance are also likely to influence the ability of Black college students to prioritize their well-being. The tendency for Black students to identify with their ancestral history of struggle and endurance may also lead them to believe that the issues they are experiencing are not severe enough to necessitate help (e.g., “I question how serious my needs are” or “stress is normal in college”; Busby et al., 2021). The issue of low help-seeking and mental health service utilization among Black college students is of concern due to their elevated risk for suicide, which is the second leading cause of death among college aged (18 to 24 years) students (Busby et al., 2021). In a study of suicide risk among $N = 1,559$ Black college students from four universities in the United States, 17% of students screened were positive for suicide risk and 66% of those students with elevated risk for suicide were not receiving professional mental health support or intervention (Busby et al., 2021).

The Potential Role of College and University Campuses in Addressing Racial Stress

Colleges and universities are in a unique position to address the impact of racism due to their ability to integrate academic, career, and health support services as well as their access to many Black students directly on campus (Mushonga, 2020). Just like their peers, Black undergraduate students transitioning into college are in a critical developmental period in which they must make major life adjustments and may experience psychological, social, and physiological changes (Mushonga, 2020). However, unlike their peers, Black undergraduate students are faced with the stress from racism and discrimination in addition to general stressors associated with the college experience (Mushonga, 2020). The fear that Black young adults have of the possibility that they may be killed by police in their homes, cars, or while performing activities of daily living (e.g., holding a cell phone or walking home) is an additional stressor that Black students must carry through their educational experience (Wright et al., 2020). These unique challenges may put Black students at higher risk for psychological distress, suicidal ideation, mood disorders, school dropout, and other outcomes that impact well-being (Mushonga, 2020). Strengths-based interventions and support are needed to help Black young adults build resilience and flourish despite the racialized circumstances they have unfairly found themselves in (Wright et al., 2020). It is imperative that culturally appropriate treatment, supports, and intervention focus on promoting positive mental health for Black undergraduate students (Mushonga, 2020).

Given the impacts of racism on health and well-being, college and university mental health providers are strongly encouraged to take concrete action to address the effects of racial stress in the Black student population. However, it is critical that college and university mental health providers avoid the historical tendency to focus on deficiencies in mental health. At the same time, providers should not underestimate the damaging effects that

racism has on well-being and the ways in which Black college students are able to overcome adversity (Mushonga, 2020). Thus, it is suggested that approaches evidenced by the literature focused on positive aspects of psychological health and behavior be explored to address racial stress among Black undergraduate students.

Institutions of higher education may develop campus programming (e.g., workshops or seminars) to provide training related to the use of adaptive coping strategies for increasing positive self-concept among Black students (Bernard et al., 2020). Additionally, practitioners may provide psychoeducation to Black students on the benefits and quality of mental health treatment and strategies to reduce the use of maladaptive coping strategies that impede on well-being (Barnes & Lightsey, 2005; Busby et al., 2021). Black and African-centered communal health interventions, such as emotional emancipation circles (EECs), would be particularly valuable because these utilize treatment modalities that are specific to the cultural strengths of Black people while also providing general benefits of group-based therapy (e.g., interpersonal learning, socialization, and catharsis; Gómez, 2015). The implementation of formal programming would help equip Black college students to cope with the academic and racial stressors that are likely to arise as they work towards completing their degrees.

College and university mental health services are essential for addressing the increasing severity and prevalence of mental disorders among their student populations, especially since most disorders first emerge before or near the traditional college age of 18 to 24 years old (Watkins et al., 2012). Unfortunately, college and university campuses have struggled to meet demand for student mental health services, due to increases in the number of students with severe mental health issues, increases in the number of students who

primarily rely on their campus for health services, and budgetary restraints or cutbacks (Watkins et al., 2012). The currently unsustainable role of campus counseling centers has resulted in overwhelmed mental health staff and practitioners who feel ill-prepared to address the complex concerns of their students (Watkins et al., 2012).

Campus-Based Racial Stress Screening as a Potential Initiative

The lack of funding, resources, and staff support available at campus counseling centers, coupled with the difficulty that Black undergraduate students have in recognizing the severity of problems they are facing and the hesitancy to access mental health support, are significant obstacles to addressing racial stress (Busby et al., 2021; Watkins et al., 2012). Although there is a strong need for strengths-based treatments rooted in positive psychology, the implementation of such interventions is likely to be more effective if informed by the assessment and identification of racial stress within an integrated mental health care model (Busby et al., 2021). Screening for racial stress may be one way to reduce the strain of high mental health service need on college and university campuses while also ensuring that Black undergraduate students receive the appropriate supports for coping with racial stress and prioritizing their well-being.

Racial stress screening could aid practitioners in gaining a better understanding of the racialized stressors faced by the Black student populations they serve. Racial stress screening would first involve obtaining consent from each Black student enrolled at a college or university, then providing consenting students with a brief rating scale for assessing racial stress. Completion of the rating scale would then provide knowledge to campus mental health practitioners and administrators about students' levels of racial stress with the intention of providing direct mental health services, implementing campus-wide interventions and

programming, or connecting students to off-campus supports. The use of brief rating scales is advantageous for identifying markers of racial stress and promoting successful screening implementation because they are developed with fewer items than more comprehensive assessments, thus requiring less time and effort from respondents (Glover & Albers, 2007). It should be noted that screening is not recommended for diagnosing or pathologizing Black undergraduate students. Rather, screening would be used to increase efficiency in determining which students may benefit from increased mental health support or tailored interventions specific to their experiences with racial stress.

Although a review of the research literature did not reveal that racial stress screening has previously been implemented, the common practice of screening for other mental health concerns within primary care, K-12 schools, and higher education settings demonstrates promise for beneficial outcomes, including more efficient models of service delivery and improved well-being among students (Albers et al., 2007; Denering & Spear, 2012; English & Campbell, 2019; Wissow et al., 2013). Similar to other types of mental health screening procedures, the implementation of racial stress screening could serve as the first step in a systematic, data-driven approach by first identifying Black undergraduate students experiencing racial stress, then connecting the students who are interested in utilizing mental health services to accessible supports on- or off-campus.

The administration of a racial stress rating scale with Black undergraduate students could be done on an individual basis at campus-based health appointments (e.g., students fill out rating scales during intakes or check-in) or on a wider scale via an online format (e.g., rating scales are sent out to e-mail addresses of all Black students). If implementing campus-wide screening, students may also be given the option to provide anonymous screening

information that can be used to illustrate a more generalized profile of racial stressors experienced by the entire Black student population on campus. Providers and administrators may implement anonymous screening to inform delivery of campus-wide supports, such as workshops and psychoeducational programming, to address the racial stressors most commonly experienced by their Black undergraduate students. An increased understanding of racial stress can help practitioners begin to consider how to address racial stress among Black undergraduate students, whether through direct service delivery or referrals to off-campus supports.

Validity of Racial Stress Screening

Follow-up is an integral step of the proposed racial stress screening process, but it is crucial that campus providers and administrators carefully interpret the results of screening to ensure appropriate and timely delivery of mental health services. To ensure accurate identification of Black undergraduate students in need of support for coping with racial stress, it is necessary to use rating scales with sufficient evidence of validity. Validation refers to an indefinite process of gathering evidence—through either quantitative, qualitative, or a combination of methods—to inform conclusions on how effective a rating scale is for its intended use (Kim, 2009). For example, statistical analyses can be used to assess the extent to which items on a measure are correlated with each other, the degree to which ratings are consistent over time, or the underlying constructs that the scale is measuring. Likewise, cognitive interviews, expert panel review, and focus groups can be used to gain a more detailed understanding of the construct being measured and how accurately a rating scale captures that construct.

Samuel Messick's (1989) unified theory proposed that the effectiveness of a rating scale should be based on its intended use rather than its inherent features. This integrated, argument-based approach to validation highlights the ethical implications and social consequences of screening results and interpretation (Maul, 2018). Therefore, it is not only important to investigate how effective a rating scale is in measuring the intended construct (e.g., racial stress), but it is also important to understand how useful and appropriate the rating scale is for the intended purpose of screening. This is directly related to Montrose Wolf's (1978) concept of social validity, which involves assessing the attitudes of screening participants, including both respondents and administrators, in regard to the acceptability, feasibility, and appropriateness of the screening procedures (Greer et al., 2012). It is important to examine the role of social validity when considering the implementation of racial stress screening to ensure participant buy-in to increase the likelihood of obtaining reliable screening information (Greer et al., 2012). Because campus-based racial stress screening has not been previously implemented, strong validity evidence is needed to promote institutional support.

A mixed-methodological approach to examining validity is valuable due to the complementary nature of quantitative and qualitative methods to gain a comprehensive understanding of how racial stress can be measured with the Black undergraduate student population. The flexibility afforded by a mixed-methods approach helps to enhance the quality of the scale development process by collecting multiple forms of subjective and statistical data to establish evidence of validity (Zhou, 2019). Quantitative methods are helpful for refining rating scales over time, improving the reliability of a rating scale, and ensuring precise measurement of an identified construct. On the other hand, qualitative

methods are helpful for engaging stakeholders throughout the scale development process in order to identify underlying factors that may not be captured by statistical analyses, detect potential sources of measurement error or bias, and clarify how a construct is operationalized within a particular population or context. The combination of quantitative and qualitative methods is recommended to strengthen the validity evidence for a rating scale designed to measure racial stress.

Current Study

College and university counseling centers are encouraged to address the negative impacts of racism given that they are tasked with providing therapeutic and support services to Black undergraduate students who are likely to face unique obstacles when navigating the world of higher education (Mushonga, 2020). The implementation of screening for racial stress is one concrete, actionable step that can be taken to facilitate the delivery of necessary supports for Black students to heal from the negative effects of racism and to build on their cultural strengths and resilience (Watkins et al., 2012). In order to successfully implement campus-based screening, it is essential to examine the validity evidence of a proposed measure of racial stress to ensure accurate reporting and interpretation of information gathered from screening. It is also imperative to gain perspectives from Black undergraduate students on the utility and appropriateness of screening to reduce potential barriers to screening implementation.

The current study serves as a pilot for campus-based racial stress screening of Black undergraduate students in an online format. A researcher-adapted rating scale, the Racial Stress Survey for Black Undergraduates (RSS-BU), was used as a measure of racial stress with a sample of undergraduate participants. Three objectives guided how mixed-

methodology was used to evaluate the screening procedures used in this study and to answer the specified research questions. The first objective was to examine what levels of racial stress were reported by Black undergraduate students who participated in this study and if these scores differed across gender, HBCU affiliation, and generational status. The second objective was to investigate how well the RSS-BU measures the construct of racial stress with a sample of Black undergraduate students, including whether it equivalently measures racial stress across the same demographic groups. The third objective was to gather perspectives from Black undergraduate students on screening and the adapted measure proposed for use. Given these objectives, the author aimed to answer the following research questions:

- RQ1. (a) What scores did Black undergraduate student participants receive after completing the RSS-BU? (b) Did scores differ across gender, HBCU affiliation, and generational status?
- RQ2. (a) Is the RSS-BU effective in measuring the racial stress of Black undergraduate students? (b) Does the RSS-BU measure racial stress equivalently across gender, HBCU affiliation, and generational status?
- RQ3. What perspectives do Black undergraduate students have on campus-based racial stress screening?

The findings from this pilot study of campus-based racial stress screening will be beneficial for practitioners who are providing services to Black undergraduate students. The next sections will cover a review of the literature, methods, results, and discussion for the current study. The second chapter begins with the underlying theoretical framework informing this study and the lens used to synthesize the literature related to the racial stress of

Black undergraduate students. The third chapter will further outline the mixed-methodology used to carry out the current study, including the participants, measures, procedures, and analytical plan. The fourth chapter covers the findings and results pertaining to each of the research questions. Finally, the fifth chapter will discuss the main findings, implications, limitations, and future directions of this research study. The ultimate goal of this study is to lay the groundwork for campus practitioners and administrators who are considering the use of screeners as tools to guide service delivery for addressing racial stress among Black undergraduate students.

Chapter 2

LITERATURE REVIEW

History of Racism

The long-term, historical effects of slavery and racism in the United States must be acknowledged to understand the cumulative impacts on the psychological functioning, well-being, and resilience of Black Americans. Between 1500 to 1820, approximately 12 million enslaved Africans were transported from Africa to the Americas and Europe in the 400-year slave trade, with the first documented enslaved Africans brought to Virginia in 1619 (Elliott & Hughes, 2019). Most enslaved Africans were transported during the 18th and 19th centuries to the Americas via the Middle Passage, named for the voyages across the Atlantic Ocean, wherein conditions were “usually crowded; sickness was a major problem, killing many of the enslaved and the crews of the slave ships as well, and shortages of food and drinking water were chronic. Misjudgments in rations, weather problems, and slave resistance onboard ships could affect the length of the passage and the conditions of the people onboard” (Lovejoy, 2006, p. 4). Of the enslaved Africans forcibly taken to the United States, about half came from two regions of Africa, Senegambia and west-central Africa, and were transported to the Lowlands of the Carolinas and Georgia and the Tidewater area of Virginia and Maryland (Elliott & Hughes, 2019). Once they arrived in the United States, enslaved Africans were forced into a system of chattel slavery, which stripped them of humanity and made them, as well as their future generations of children, to be treated as property.

On January 1, 1863, the Emancipation Proclamation abolished slavery in the United States, eventually leading to the end of the American Civil War, followed by the

Reconstruction era. However, slavery was not officially outlawed until 1865 with the passing of the Thirteenth Amendment, although it should be noted that slavery is still legal as punishment for a crime (Foner, 1987). The Fourteenth and Fifteenth Amendments were also passed during Reconstruction, establishing that Black people should be guaranteed equal protection and due process under the law and that Black men should be given the right to vote, respectively. However, with the beginning of Reconstruction and re-integration of the United States came the formation of the Ku Klux Klan (KKK) in the mid-1860s in Tennessee. This White supremacist group enacted extreme violence, including bodily mutilation, rape, and lynching, on Black people and perceived allies during this era (Foner, 1987).

Despite some of the progress made during Reconstruction, the subsequent period of Jim Crow, beginning in the 1870s, was a time in which mostly Southern state laws mandated separation by race in public areas, including but not limited to schools, parks, playgrounds, restaurants, public transit, movie theaters, and bathrooms (Hoelscher, 2003). This period coincided with what has been called America's "lynching era," with widespread racially motivated mob violence that subjected victims to torture and mutilation in public squares that involved gatherings of large crowds, picnics, and even "souvenirs" (Hoelscher, 2003). Despite the horrific and voyeuristic nature of these "lynching carnivals," perpetrators were rarely ever convicted.

The historical context laid out here is just one of many nested systems in which Black people have resisted and thrived despite racial trauma. Although there have been improvements in American culture and policy since the Civil Rights Movement, racism and discrimination remain as serious, pervasive issues in this country (Barnes & Lightsey, 2005).

The history of colonialism and White supremacy in America has led to a culture of policies and practices (e.g., mortgage discrimination, mass incarceration, and the War on Drugs) that guarantee structural discrimination, leading to health inequities for Black people as well as consistent threats of violence and further injustices (Barlow, 2018).

Despite racialized issues increasing the risk for mental health problems, only 25% of Black Americans seek out and utilize mental health care services (Barlow, 2018). When Black Americans finally receive initial treatment, it is often under negative circumstances or involuntary settings in which mental health care is not the primary purpose, such as juvenile detention centers, jails, prisons, or emergency rooms (Burkett, 2017). These authoritarian and punitive strategies of mental health service delivery contribute to the pattern of significant underutilization of mental health services among Black young adults as they continue through settings of higher education.

Obstructed Use of Mental Health Services

Traditionally, the term “barriers” has been used to describe the personal and structural reasons for low mental health service utilization or treatment completion by Black people. Commonly identified barriers have included stigma, fear, self-reliance, cultural differences, transportation, location, and lack of culturally sensitive practices (Busby et al., 2021). Another barrier to care is the problem of Black Americans being more likely to be misdiagnosed or overdiagnosed with severe mental health disorders, thus resulting in improper care (Barlow, 2018). This perception of “barriers” can be expanded through a critical analysis that considers the historical and traumatic factors that have contributed to the social, environmental, and economic conditions that often disrupt the lives of Black Americans (Burkett, 2017).

Christopher A. Burkett (2017) reconceptualized “barriers” as *obstructed use* to include systematic oppression, institutional inequalities, and structural disparities. Burkett (2017) explained that previously identified barriers have historical origins that go beyond the general ideas of cultural differences and difficulties in affording treatment. Rather, the combination of cultural experiences and oppressive social structures create various obstacles that obstruct Black Americans’ pathways to seeking and using mental health services.

Burkett (2017) described the construct of obstructed use as being comprised of four theoretical concepts: *historical trauma*, *environmental toxicity*, *culturally bound economic insecurity*, and *cultural mistrust*. Screening for racial stress may help providers and administrators to identify Black students who, despite experiencing distress, may be hesitant or unable to utilize campus mental health services. These aspects of obstructed use should be considered if implementing racial stress screening so Black students are assured that they will be able access and utilize appropriate support services.

Historical Trauma. Historical trauma is the collective psychological and emotional harm shared by a cultural group over multiple generations (Burkett, 2017). The historical trauma of Black Americans began with the forced enslavement of ancestors brought to the Americas in 1619, continued with Jim Crow and unethical practices in research and medicine, and has been sustained by contemporary forms of institutionalized and systemic racism perpetuated through policies such as redlining, gentrification, and mortgage discrimination. The consequences of historical trauma include a diminished sense of community, damage to psychological development and mental well-being, skepticism of mental health services, and the downplaying of complex trauma (Burkett, 2017).

Joy DeGruy Leary (2005) theorized that the low self-esteem, internalized racism, and propensity for anger and violence associated with “post traumatic slavery syndrome” are byproducts of centuries of chattel slavery. Similarly, Patricia Broussard (2013) discussed how “post-slavery silence syndrome,” which primarily affects Black women, is a result of the collective traumatic experience of sexual abuse, assault, and rape, as well as the tradition of silence that comes with it. For Black women, “gendered trauma is not likely to be as foregrounded as racialized trauma, further contributing to this intersectional traumatic experience” (Barlow, 2018, p. 903).

The collective cultural memory of traumatic events functions as a “socially transmittable neurobiological synapse” through a series of recollections passed down through multiple generations (Burkett, 2017, p. 819). Members of later generations may experience trauma-related symptoms without having directly experienced the traumatic events themselves (Burkett, 2017). The transmission of historical traumatic stress from the older to younger generations can occur through biological processes, the telling of personal narratives, or media sources (Burkett, 2017). It is particularly important to consider the transmission of historical trauma given that many undergraduate students are in a critical developmental stage of life.

Though these personal narratives are generally filled with experiences of physical, mental, and emotional violence, the racial socialization process that takes place through storytelling can create a strong sense of unity and solidarity for Black Americans (Burkett, 2017). Burkett (2017) describes the racial socialization process as “an adapted protective mechanism designed to promote racial pride, enhance self-esteem, and prepare young Black Americans for the inevitable prejudice, discrimination, and racism that they will encounter as

adults” (p. 820). For example, parents and guardians may discuss with their Black children and adolescents the possible danger associated with police encounters and the strategies they can use to protect themselves. Likewise, parents and guardians may share stories about influential Black figures in politics, literature, music, film, and sports to help instill racial pride in their children.

Environmental Toxicity. Environmental toxicity refers to the tangible (i.e., physical or chemical) and intangible hazards that are present in many under-resourced, urban neighborhoods wherein low-income Black families reside (Burkett, 2017). There are four broad types of toxic elements that pollute these neighborhoods: (a) large sites of technology, such as factories, airports, and landfills; (b) local activity spaces, such as liquor stores, fast-food restaurants, smoke shops, and gas stations; (c) blight, such as abandoned houses, litter, broken roads, and cracked sidewalks; and (d) crime or other social problems such as gangs, violence, and feral animals (Burkett, 2017; Greenberg & Schneider, 1996). Environmentally toxic environments serve as physical remnants of historical trauma and can contribute to an accumulation of toxic stress.

Environmental toxicity can threaten the well-being of Black families living in these areas due to the lack of resources available to promote healthy development for children and adults (Burkett, 2017). State and federal governments have habitually failed to address environmental toxicity, with generally slow responses to public health threats and weather-related disasters that disproportionately affect the livelihoods of Black Americans (e.g., Flint water crisis and Hurricane Katrina; Bullard, 2008). The psychological tension that results from repeated triggering of the body’s stress response system is exacerbated when a person does not have access to support or protection from toxicity (Burkett, 2017).

Culturally Bound Economic Insecurity. Culturally bound economic insecurity is a debilitating response to overwhelming financial issues accompanied by “the continual feeling of financial hopelessness, helplessness, strain, and confusion” (Burkett, 2017, p. 824). This differs from poverty because it encapsulates the fear of financial circumstances that seem impossible to overcome rather than solely referring to the economic condition itself. Given that Black Americans generally have the lowest incomes compared to other racial groups in the United States, it is likely that many suffer from the feelings of stress and anxiety that come with being unable to afford food, housing, and other necessary costs of living (Burkett, 2017; Fry et al., 2021).

The combination of unjust policies, structural barriers, and limited opportunities in education and employment reinforce the racialized issues associated with building generational wealth in the United States (Burkett, 2017). Those living in poverty are often faced with unemployment or being employed in dangerous, low-wage jobs, all while dealing with the threat of environmental toxicity. The chronic strain from adverse socioeconomic circumstances that are embedded in societal structures (e.g., poor housing conditions, community violence, or inadequate financial resources) can lead to long-lasting psychological and emotional damage. Economic insecurity is especially harmful for families because parents and guardians are not able to provide their children with the resources necessary for healthy development. The resulting decline in well-being and family functioning likely leads to further obstructed use of mental health services (Burkett, 2017).

Cultural Mistrust. Cultural mistrust is one of the most commonly identified barriers of mental health service utilization among Black Americans. Burkett (2017) described cultural mistrust as a result of the collective cultural memory of historical trauma that

typically manifests as a healthy, non-clinical expression of paranoia and skepticism. Given the prolonged impacts of institutional inequities and racialized prejudice, cultural mistrust is an adaptive response that helps Black Americans to build the resilience necessary for offsetting the toxic stress accompanied with historical trauma (Burkett, 2017).

The hesitancy (and, sometimes, fear) of seeking out mental health care is due to the history of negative experiences that Black people have had with psychological, medical, and research institutions (Burkett, 2017). One example is the Tuskegee Study of Untreated Syphilis in the Negro Male, an unethical medical experiment conducted from 1932 to 1972 in which impoverished Black men were deceived into believing that they were receiving free treatment for syphilis when they were not. Despite penicillin treatment becoming available in the 1940s, none of the study participants were ever given antibiotic treatment, leading to deaths and further syphilis infections among these Black men, their wives, and their children (CDC, 2023).

Cultural mistrust is generally a protective response passed down through racial socialization, but it can also interfere with the initiation or continuation of mental health care, particularly when services are being provided by White practitioners (Burkett, 2017). Although racial stress screening has been proposed here as a potential pathway towards increasing mental health care access, cultural mistrust may make it difficult to successfully implement and gather helpful information from screening. Thus, it would be pertinent to gather perspectives directly from Black undergraduate students to inform best practices for implementing campus-based racial stress screening.

Regardless of whether the term “barriers” or “obstructed use” are used, it is imperative for scholars, researchers, practitioners, and policymakers to understand the

historical origins and social structures that have long had adverse impacts on the well-being of Black people in the United States. A trauma-informed approach is necessary when considering how historical trauma, environmental toxicity, culturally bound economic insecurity, and cultural mistrust have contributed to the underutilization of mental health services among Black Americans. Screening for racial stress may help providers and administrators to identify Black students who, despite experiencing distress, may be hesitant or obstructed from utilizing campus mental health services. Ideally, students who are identified through screening would be connected to services for racial socialization, housing assistance, financial aid, and other necessary supports.

Racism in Context

Racism is a system of power and privilege based on arbitrarily constructed racial group designations that is rooted in the historical oppression of a group and maintained by societal structures, policies, ideologies, values, and behaviors that exclude the oppressed group from power or equal access to resources (Harrell, 2000). Although overt forms of racism are no longer seen as acceptable in modern society, the legacies of slavery and Jim Crow have continued in more subtle forms of racism and discrimination (Gómez, 2015).

Jones's (1972) Theory of Racism

James M. Jones (1972) outlined three primary forms of racism: *individual racism* against another person; *institutional racism* through discriminatory laws and social policies; and *cultural racism* by the devaluation of a racial group's cultures values or practices.

Jones (1972) also specified four general contexts in which the primary forms of racism can occur simultaneously. First, the *interpersonal context* involves direct and vicarious experiences of racism and prejudice, which often reflect the other contexts of

racism through interactions with others and observation of their actions, nonverbal behaviors, and verbal statements. Second, the *collective context* of racism involves the status, disparities, and functioning among large groups of people (e.g., unemployment rates or treatment in the criminal justice system). Third, the *cultural-symbolic context* refers to racism expressed in images and impressions of the oppressed racial group that are displayed in popular media (e.g., news, social media, or entertainment), art, literature and science in a way that reflects the cultural values of the dominant racial group. Fourth, the *sociopolitical context* of racism involves political debates and discourse about race, identity, legislation, and institutional practices and policies. There is an interplay among these four contexts of racism; for example, individual beliefs can affect voting behaviors in the sociopolitical context, the cultural-symbolic context can shape individual beliefs, and the collective context can be a result of the messages sent through the cultural-symbolic and sociopolitical contexts (Harrell, 2000).

Bronfenbrenner's (1986) Ecological Systems Theory

Urie Bronfenbrenner's (1986) *ecological systems theory* can also be considered in conjunction with Jones's (1972) theory of racism. Ecological systems theory is rooted in the idea that the environment can be divided into five systems that interact with and influence a child's development over time (Bronfenbrenner, 1986). These nested systems, starting from the most immediate environments to the larger environments, are the *microsystem*, *mesosystem*, *exosystem*, *macrosystem*, and *chronosystem* (Bronfenbrenner, 1986). By analyzing each of the five systems that make up a person's environment, a more comprehensive picture can be gathered by examining developmental influences in broader social, cultural, and historical contexts (Bronfenbrenner, 1986).

The microsystem is defined by the closest relationships and settings in a developing person's life, including their family, peers, school, neighborhood, and other community settings (e.g., religious organizations, daycare centers, community clinics). For instance, the presence of implicit racial bias (i.e., unconscious feelings and attitudes harbored towards others due to their race) in some school teachers and administrators may lead to the disproportionate use of exclusionary or punitive disciplinary practices against Black school children (Neitzel, 2018).

The mesosystem is the second layer and consists of processes between two or more different microsystems, implying that microsystems do not operate independently from each other (Bronfenbrenner, 1986). Interactions within the microsystem have reciprocal effects on both the developing person and the environment that they are in. For example, a student's encounters at home can affect their performance in school, and vice versa. Any interaction that the student has with their family, school, peers, neighborhood, or community are influenced by experiences in another microsystem (Eamon, 2001).

The exosystem is comprised of interactions between two or more settings, but the developing person is a part of only one of these settings or is rarely associated with any of the other settings (Bronfenbrenner, 1986; Eamon, 2001). Examples of exosystem influences on a child's development include the parents' workplace, the family's social and support networks, and the larger community environment (Eamon, 2001). Though a child is never actually present at their parent's workplace, there are multiple ways in which a parent's occupation can affect the child, such as how much time is spent apart from the child or how much academic support the parent can offer to the child. Likewise, socioeconomic status (SES) can affect the amount and type of social support or community resources that a family

receives. Without sufficient financial resources, Black caregivers may be more prone to distress, which can in turn impact the parenting practices at home and the child's development (Eamon, 2001).

The fourth layer is the macrosystem, which represents the belief systems, societal structures, customs, lifestyles, and overall characteristics of the culture(s) that the person is a part of and is thus affected by (Bronfenbrenner, 1986). One's race, ethnicity, sex, gender identity, sexual orientation, ability, SES, or other personal characteristics can play a part in the way that they will have to deal with the economic, social, educational, legal, and political institutions of their macrosystem. For example, negative stereotypes of Black boys, such as being violent, lazy, or incompetent, are widespread in American culture. Unsurprisingly, the perpetuation of these dominating cultural beliefs has had damaging effects on the psychosocial development of Black boys (Livingston & Nahimana, 2006).

The chronosystem is the fifth and final layer; it extends the developing person's environment into an additional time dimension that encompasses major life transitions and sociohistorical events over the course of their developmental trajectory (Bronfenbrenner, 1986). The chronosystem specifically examines the cumulative effects of changes and continuities over time in the environments that the person is developing in (Bronfenbrenner, 1986). Life events and transitions in the chronosystem might include school entry, puberty, moving to a new place, entering the workforce, death or severe illness in the family, marriage, divorce, and retirement. Sociohistorical events, such as the Civil Rights Movement and, more recently, the COVID-19 pandemic, can have significant impacts on the psychosocial development of people who personally experienced or were exposed to these moments in history. The chronosystem is where ecological systems theory most obviously

overlaps with transactional models of development by considering the influence of transitions and events over one's lifetime.

Sameroff's (1975) Transactional Model of Development

Arnold Sameroff's transactional model of development (Sameroff, 1975) describes the developmental process as a product of cumulative, bidirectional transactions that occur over the lifespan. The transactional model is encompassed by interactions among a person's *genotype* (genetic makeup), *phenotype* (how genes are expressed), and *environtype* (cultural and familial patterns of socialization). Sameroff (2010) acknowledged transactions as universal elements of the developmental process, explaining that "everything in the universe is affecting something else or is being affected by something else" (p. 16). Developmental changes result from a combination of how a person interacts with their environment and the experiences that the environment provides to the person. For example, the developmental trajectory of a Black person can be affected by the racist experiences that they may experience within their environment. This cumulative model can serve as a useful predictor of future developmental outcomes, particularly for understanding the risk factors, promotive factors, and potential consequences of traumatic stress in early childhood (Sameroff, 1975).

Genotype is the source of the biological organization, or genetic makeup, stored in the cells of an individual (e.g., DNA; Sameroff, 2000). Genetic characteristics of an organism are determined by alleles passed down from both of its biological parents during the reproductive process. The offspring receives all the genetic information contained in those alleles, even if these characteristics are never expressed in the individual. For example, a person's genotype may include predisposition to cancer, but this does not automatically mean that the person will indeed develop cancer in their lifetime.

Phenotype refers to the actual expressed characteristics of a one's genotype (Sameroff, 2000). Some of these observable traits, like skin color and hair texture, are developed mostly by chance. But other phenotypic characteristics, such as personality and behavior, can be more heavily influenced by the person's environment. For instance, identical twins have the same genotype, but their phenotypes are unique due to the different experiences each twin has with their respective environment.

Environtype is the source of one's experiences with their environment, including familial, social, and cultural influences (Sameroff, 2000). Family members, teachers, peers, neighborhood, media, and government are all examples of envirotypic sources of development. For example, Black people with darker skin color (phenotype) are often treated more harshly by law enforcement (environtype) than someone with a lighter skin color (Burch, 2015). Environtype facilitates the way a person adapts to the surrounding world, but, like genotype, it is not a mandatory determinant of one's developmental outcomes.

It is necessary to consider all potential influences on the continuous processes because there is no single, accurate predictor of developmental outcomes (Sameroff, 1975). The continuous interplay of genotype, phenotype, and envirotype over time provides a contradictory argument to the traditional "nature versus nurture" debates in the scientific community (Sameroff, 2010). Rather than assuming that developmental outcomes are due to one set of factors over another, the transactional model conceptualizes development as being simultaneously influenced by both genetic and environmental factors. A transactional lens is essential for understanding how racism that is repeatedly experienced within the sociocultural environment can have cumulative effects on the health outcomes of Black people over time.

Racial Stress

Shelly P. Harrell (2000) conceptualized racial stress as “the race-related transactions between individuals or groups and their environment that emerge from the dynamics of racism, and that are perceived to tax or exceed existing individual and collective resources or threaten well-being” (p. 44). This definition highlights how racism and discrimination can affect the well-being of Black people through stressful experiences, but also how one’s position in a social hierarchy can influence the access they have to various sources of support and coping. Harrell (2000) also discussed how racial stress impacts physical, psychological, social, functional, and spiritual aspects of well-being.

Given the pervasive, insidious, and enduring nature of racism and discrimination, some scholars (e.g., Carter, 2007; Helms et al., 2012; Kirkinis et al., 2021) have considered racism as a source of chronic, traumatic stress. Race-based traumatic stress is due to the perception of racist experiences as negative, unexpected, ambiguous, repeated, and out of an individual’s control (Carter, 2007; Polanco-Roman et al., 2016). Generally, individuals exposed to trauma may experience mild to severe dissociative symptoms, including distortions in perception of the self, events, and sensory information, as well as intrusive thoughts and memories (Polanco-Roman et al., 2016). Unsurprisingly, symptoms of race-based traumatic stress—including dissociation, hypervigilance, avoidance, intrusive thoughts, depression, and physiological arousal—overlap with symptoms of PTSD (Kirkinis et al., 2021; Polanco-Roman et al., 2016). Therefore, it is critical to have a firm understanding of the chronic nature of racial stress to help inform how Black people can effectively cope and heal from the lasting effects.

Clark and colleagues (1999) discussed the role of perceived racism and its link to negative health outcomes for Black people within a biopsychosocial framework. They described perceived racism as “the subjective experience of prejudice or discrimination” that includes both overt and more subtle forms of racist expression (Clark et al., p. 808). The biopsychosocial model notes that Black people are disproportionately exposed to sources of chronic and acute stress in their environments, many of which involve or are a result of racism (Clark et al., 1999).

Perceived racial discrimination can lead to adverse physiological and psychological responses, including stress, high blood pressure, intrusive thoughts, anger, paranoia, somatization, obsessive-compulsive symptoms, interpersonal sensitivity, helplessness, hopelessness, frustration, resentment, fear, depression, and anxiety (Barnes & Lightsey, 2005; Clark et al., 1999). For example, in the face of chronic stress, the body’s immune system may respond with decreased cellular immunity, decreased rate of healing, higher susceptibility to disease, and prolonged illness (Clark et al., 1999). The combined effects of acute and prolonged racial stress contribute to these adverse physiological and psychological reactions, which, if left untreated or unaddressed, can lead to more severe health problems over time.

There is a dearth of evidence demonstrating how racial stress is connected to a variety of poor health outcomes and high rates of traumatic stress among marginalized groups when compared to the general population (Kirkinis et al., 2021). Racial inequities in health are evidenced by historically elevated rates of disease and death for Black people, with these inequities still present even after controlling for SES (Williams et al., 2019). Racial stress is associated with hypertension, cardiovascular disease, obesity, stroke, lung cancer, breast

cancer, diabetes, asthma, drug and tobacco use, sleep difficulties, high infant mortality, premature and stillborn births, low birth weight, and low life expectancy (García & Sharif, 2015; Harrell, 2000; Paradies et al., 2015; Vandiver, 2020; Williams et al., 2019; Wright et al., 2020). These health disparities have been made possible due to racialized social structures that determine differential access to resources and opportunities that are critical for promoting positive health outcomes (Williams et al., 2019).

The impact of racism is also implicated in psychological well-being through the manifestation of anxious, depressive, psychotic, somatic, and obsessive-compulsive symptoms (Harrell, 2000; Paradies, 2006). The link between racism and mental health outcomes has generally been demonstrated to have an even stronger relationship than with physical health outcomes, which could be due to the self-reported nature of racial stress or the lapse in time for the development of physiological symptoms (Paradies et al., 2006; Williams et al., 2019). Chronic exposure to racism can induce physiological problems, including hormonal and cognitive-affective dysregulation, which can be harmful to biological systems and can in turn lead to further poor physical health outcomes and mental health problems (Paradies et al., 2015).

In addition to physical and psychological symptoms, racial stress can also impact social, functional, and spiritual aspects of well-being. The feelings of betrayal from cultural and institutional forms of racism as well as pain from interpersonal racist experiences can affect an individual's ability and willingness to form close relationships, trust others, and be part of a social group, both within and outside of the individual's racial group (Harrell, 2000). Racism can affect aspects of functional well-being, including academic achievement, job performance, and parental functioning, among Black people (Harrell, 2000).

Additionally, the dehumanizing and threatening nature of racism can impact spiritual well-being, leading to loss of faith, feelings that life is meaningless, or existential angst among Black people (Harrell, 2000).

For Black college students in particular, racial stressors are stronger predictors of trauma-related symptoms than general sources of stress (Kirkinis et al., 2021; Pieterse et al., 2010). However, there is complexity to the ways in which Black students of differing identities may experience racism and discrimination due to different levels of privilege and oppression, including gender, class, sexual orientation, religion, and disability status (Harrell, 2000). Therefore, an intersectional framework that simultaneously considers race with multiple social categories was used in this study to gain a better understanding of Black undergraduate students' experiences of racial stress (Crenshaw, 1989; Williams et al., 2019).

Racial stressors may have a gendered component, in which Black men are perceived as hypermasculine, physically threatening, promiscuous and emotionally inhibited (Gómez, 2015). In one study, college educated Black men were more likely than women to have unpleasant interactions with police and subjected to racist comments (M. Anderson, 2019). Although Black college women have been found to be more likely to screen positively for suicide risk, Black college men are significantly more likely to die by suicide, less likely to seek mental health support, and, when they do seek formal support, more likely to be dissatisfied or prematurely terminate mental health services (Busby et al., 2021).

On the other hand, Black women may be particularly likely to experience further discrimination due to the “double jeopardy” hypothesis at the intersection of racism and sexism (Crenshaw, 1989; Gómez, 2015). Black women are often unfairly perceived as unattractive, emasculating, unfeminine, and either asexual or hypersexual (Gómez, 2015).

According to a meta-analysis conducted by Paradies (2006), the evidence of gender differences in the prevalence of racist experiences is mixed. Some studies showed higher rates of self-reported racism for Black men, other studies demonstrated higher rates for Black women, and several studies found no significant gender differences in self-reported racism (Paradies, 2006).

Black first-generation students are also likely to face additional stressors during and after college. Black first-generation college students may have less preparation or parental guidance for managing academic and financial demands related to attending school (Busby et al., 2021). Fry (2021) reported that, across racial demographic groups, first-generation students were found to have lower income and wealth after graduation and were less likely to complete college than their continuing-generation counterparts. Notably, Black adults who have a parent with a bachelor's or more advanced degree are significantly more likely to finish school than those who do not have a college-educated parent (Fry, 2021). Given that higher education is a primary pathway for Black people to achieve upward socioeconomic mobility, this lower likelihood of finishing school among first-generation students is particularly concerning. Altogether, Black undergraduate students are likely to experience racial stressors that can impact their well-being, retention at institutions of higher education, degree attainment, and potential for upward social mobility.

In her multidimensional conceptualization, Harrell (2000) suggests that there are at least six different forms of racial stressors: *racism-related life events*, *vicarious racism experiences*, *daily racism microstressors*, *chronic-contextual stress*, *collective experiences of racism*, and *transgenerational transmission of group traumas*. These six forms of racial

stressors have considerable overlap with the three primary forms of racism as previously mentioned (individual, institutional, and cultural racism; Jones, 1972).

Forms of Racial Stress

Racism-Related Life Events. Racism-related life events include significant, time-limited life experiences, such as being rejected for a mortgage or enduring harassment from police (Harrell, 2000). Though racism-related life events can occur at any point over the lifespan, these interpersonal manifestations of racism are more commonly experienced during young adulthood, between age 18 to 29 (Polanco-Roman et al., 2016). It is particularly important to consider how interpersonal forms of racism impact the well-being of Black undergraduate students because this range overlaps with the age of many students enrolled in higher education.

Vicarious Racism Experiences. Vicarious racism encapsulates the experience of racism through observations or reports, including instances of racism that happen to one's family member or close friend as well as instances involving strangers. Other prominent examples of vicarious racism include social media postings of videos displaying police brutality against, and killings of, Black people. While vicarious racism experiences may lead to heightened feelings of danger, vulnerability, sadness, and anger, these experiences can also reveal what may otherwise be hidden sources of racism (Harrell, 2000).

Daily Racism Microstressors. Daily racism microstressors are subtle putdowns or degradations best described as microaggressions, which serve as a reminder of how embedded racism is within societal structures (Gómez, 2015; Harrell, 2000; Sue, 2010). Sue (2010) described three types of racial microaggressions that Black people are likely to encounter in the interpersonal context: *microassaults*, purposefully hateful insults which

most closely resemble overt racism (e.g., calling someone the n-word); *microinsults*, relatively ambiguous statements that the perpetrator may think are compliments but are otherwise offensive (e.g., “Wow, you speak so well, not like those other ghetto people”); and *microinvalidations*, which are subtle, usually unconsciously made statements that invalidate the racism that Black people experience (e.g., “You weren’t turned down because you are Black, I’m sure it was just the best applicant who got the job”); Gómez, 2015).

Microaggressions often communicate the degrading, stereotypical views of Black people as angry, violent, criminal, abnormal, inferior, and of lower class, which can result in feelings of powerlessness and overwhelming pressure to avoid perpetuating these stereotypes. Because these demoralizing daily racism microstressors tend to occur more frequently than other types of racial stressors and are often labeled as “no big deal”, the accumulation of stress over time can be just as harmful as other forms of racial stress to one’s well-being. This reaction can be particularly common among Black undergraduate students, who often downplay their stressful symptoms and do not recognize the severity of distress that they may be experiencing (Busby et al., 2021).

Chronic-Contextual Stress. Chronic-contextual stress originates from the need to cope and adapt with the living conditions driven by social, political, and institutional racism (Harrell, 2000). For example, quality of life may be impacted by the unequal distribution of resources and limited opportunities available for Black people.

Collective Experiences of Racism. Collective experiences are reflective of how cultural-symbolic and sociopolitical forms of racism can be observed and felt by individuals within a group, regardless of if an individual directly experiences a racist encounter (Harrell, 2000). Though this sounds similar to vicarious experiences, collective experiences do not

involve witnessing or hearing about a specific racist event, rather, it involves an individual's perception of how racism affects others within their racial group (Harrell, 2000). The awareness of low socioeconomic conditions, lack of political representation, and disparaging media portrayal are exemplifying sources of collective experiences of racism-related stress.

Transgenerational Transmission of Group Traumas. Transgenerational transmission of group traumas, which is often also referred to as intergenerational trauma or historical trauma, considers the unique historical context of a racial group, how this context affects the relationship that the racial group has within the larger society, and the way that history shapes the personal and cultural race-related narratives passed down through generations (Harrell, 2000). For example, the painful traumatic effects of slavery can be intergenerationally transmitted through means of biology (e.g., poor health related outcomes) or socialization (e.g., storytelling and observation).

Coping with Racial Stress in Higher Education

Black students frequently feel that they are living in two different worlds: one being the mainstream, often predominantly White world of their college campus, in which Black culture may be viewed as deviant; and the other world being that of the typically small minority of Black students on campus (Barnett et al., 2019). Although most Black students attend PWIs, the roughly 9% of Black students enrolled in one of the 105 HBCUs in the United States may have found their campuses as protection from excessive racial stressors that may be experienced at a PWI (National Center for Education Statistics, 2022). For example, Black students may be more likely to report discrimination, hostile climate, and lack of institutional support when attending PWIs as opposed to HBCUs (Cadaret & Speight, 2018).

The stress of regular microaggressions and negative stereotyping associated with this dual context often pressures Black students to assimilate and blend in with the dominant culture on campus as a possible means of coping (Barnett et al., 2019). Furthermore, Black college graduates are more likely to work in predominantly White environments, wherein a similar dual context may be experienced and lead to continued racial stress exposure even after finishing school (M. Anderson, 2019). A Pew Research Center study showed that 48% of Black adults with at least a four-year college degree felt the need to “code-switch” (i.e., change the way they express themselves) when they are around non-Black people (Dunn, 2019). On the other hand, Black adults without a college degree were almost twice as likely than Black college graduates to never feel the need to code-switch (Dunn, 2019).

Imposter Syndrome

Given the racial stressors they may face, many college-educated Black Americans believe that their race has negatively impacted their ability to succeed in school and post-graduation (M. Anderson, 2019). Stereotype threat, for example, has been shown to affect one’s ability to perform academically due to the pressures and fears associated with negative, stereotypical expectations that Black people are not intelligent or incompetent (Paradies, 2006). Imposter syndrome is a similar phenomenon commonly experienced by Black college students, defined by Bernard et al. (2020) as “the internalization of maladaptive cognitions of intellectual incompetence experienced by high achieving individuals” (p. 197). Imposter syndrome involves an intense fear of failure and negative perception of one’s intellectual abilities despite clear markers of success and achievement (Bernard et al., 2020). Instead of attributing those successes to their own abilities, those with high levels of imposter syndrome often attribute achievement to external factors, such as luck, and work excessively hard to

assuage the fear that their self-perceived incompetence will eventually be exposed (Bernard et al., 2020).

Black undergraduate students may be especially vulnerable to developing imposter syndrome due to their need to simultaneously navigate academic stressors (e.g., internalized sense of inferiority or compulsive need to prove oneself) and racial stressors (e.g., discrimination or isolation) within the academy (Bernard et al., 2020). The need to navigate these associated stressors can significantly impact Black students, who may experience increased anxiety, depression, interpersonal sensitivity, perfectionism, and decreased self-esteem (Bernard et al., 2020). Black students who attend PWIs and those who are first-generation are particularly at increased risk for developing imposter syndrome (Bernard et al., 2020).

John Henryism

John Henryism is a coping mechanism commonly used by Black students that employs extreme effort to counter negative stereotypes of laziness and incompetence (Barnett et al., 2019; Cadaret & Speight, 2018; Paradies, 2006). When used in moderation, John Henryism can promote hard work, determination, and a sense of control within the stressful college environment, which may positively impact the mental health of Black students by increasing self-esteem and reducing psychological distress, particularly in relation to imposter syndrome (Bernard et al., 2020; Cadaret & Speight, 2018). However, a “threshold effect” demonstrates that prolonged use of John Henryism strategies can increase the likelihood of psychological maladjustment, including compromised self-esteem and self-concept, due to the unsustainable amount of energy and effort needed to cope with chronic stressors and subsequent depletion of psychological resources over time (Cadaret & Speight,

2018). Although John Henryism may help buffer against academic and environmental stressors, the amount of high effort needed to use this strategy can unintentionally reinforce symptoms of imposter syndrome (Bernard et al., 2020).

The use of John Henryism has been found to be inversely related to Africultural coping styles that are more effective in promoting well-being, possibly because these types of coping strategies rely heavily on social connection whereas John Henryism is dependent on individualized effort (Cadaret & Speight, 2018). Given the individualistic nature of John Henryism, the use of this coping strategy among Black college students is linked to greater isolation, stoicism, self-concealment, depressive symptoms, and feelings of stigmatization (Cadaret & Speight, 2018). John Henryism may be more likely to be used by Black men due to its relationship with traditional gender roles. Black college men may be negatively impacted by the pressure to appear strong, making them less willing to seek social or professional support (Cadaret & Speight, 2018).

Adaptive Coping Strategies

Clark et al.'s (1999) biopsychosocial model includes adaptive coping strategies as a promising moderator for the intensity and duration of symptoms associated with racial stress, such as burnout, depression, and anxiety (Barnes & Lightsey, 2005). Coping focused on problem-solving involves doing something to alter the stressful feelings that one experiences (e.g., engaging in mindfulness or social activism) and is associated with increased positive mental health and decreased depressive and anxious symptoms (Barnes & Lightsey, 2005). Social support has been suggested to be used more commonly as a means of coping with cultural racism and is linked to positive interpersonal relationships and decreased frustration, especially among Black men (Barnes & Lightsey, 2005).

Without concrete changes in social and economic policies, which can in turn drive changes in societal and cultural beliefs, it may not be possible to eradicate racial stress among Black college students due to the pervasive nature of individual, institutional, and cultural forms of racism. It is important to note that not all types of coping strategies are associated with the promotion of positive mental health outcomes. For example, a heavy reliance on avoidance-based coping (e.g., watching television or excessive sleeping) is more likely to result in increased severity or duration of distress than other coping strategies (Barnes & Lightsey, 2005). Avoidance-based coping fails to address the source of stress, leading to increased racial stress and reduced life satisfaction (Barnes & Lightsey, 2005). Dissociation is another common response to race-based traumatic stress, which may also be elicited in those who use passive or avoidance-based strategies to deal with racist experiences (Carter, 2007; Polanco-Roman et al., 2016). The moderating strength of a coping strategy is dependent on whether it is adaptive by reducing stressful effects, or maladaptive by exacerbating distress. Therefore, researchers and practitioners are encouraged to investigate coping strategies specific to combatting racist experiences (as opposed to general coping strategies which may be implied for universal use) and promoting well-being among Black college students.

Connections to Current Study

Implementing campus-based racial stress screening could help alleviate the burden of high demand for mental health services on college and university campuses, all while ensuring that Black undergraduate students receive the necessary supports for managing racial stress and enhancing their overall well-being. An understanding of the construct of racial stress is critical for implementing campus-based screening with the goal of addressing

the effects this has on the well-being of Black undergraduate students. However, it is also important to understand that racially stressful experiences do not automatically place Black students on an inevitable life trajectory with poor outcomes (Harrell, 2000). Just like other survivors of trauma, not all Black students who have experiences with racism will develop traumatic symptoms and many are able to make positive adaptations despite adversity. Thus, the concept of racial stress should not be inappropriately applied in a way that overemphasizes pathology and disregards positive aspects of well-being. Likewise, researchers and practitioners should be cautious about potentially causing further harm by placing the blame and responsibility on victims who may have difficulties coping with the effects of racism (Harrell, 2000). Altogether, experiences with racism are often not without consequences on well-being, so researchers and practitioners are encouraged to engage in application and research on the use of scales to measure racial stress and interventions to mitigate its effects (Harrell, 2000).

The integration of theories of racism and racial stress, ecological systems, transactional models of development, biopsychosocial models, and intersectionality is advantageous for understanding the multiple and cumulative factors that can influence racial stress and well-being for Black undergraduate students (Bronfenbrenner, 1986; Clark et al., 1999; Crenshaw, 1989; Harrell, 2000; Jones, 1972; Sameroff, 1975;). As with any other theoretical frameworks, there are limitations to its applications, including the incredibly broad, and complex lens that attempts to take many variables (e.g., biology, individual and sociodemographic characteristics, sociohistorical circumstances) into account when examining the role of perceived racism in Black undergraduate students' development and well-being. Another challenge of this integrated framework is the need to resist the tendency

to make broad assumptions about Black individuals or sub-groups. For example, not all Black students experience extreme distress from racist experiences, especially if they use adaptive coping strategies and have access to social support. Additionally, the way that one experiences racial stress may vary by social status and environmental factors roles, such as gender, parent education level, and HBCU affiliation. This serves as a reminder that Black people are not a monolith, and that within-group differences tend to be more abundant than between-group differences in regard to sociocultural expectations.

Mixed-Methodology for Evaluating Racial Stress Screening

A mixed-methodological approach is valuable for assessing the validity of racial stress screening for Black undergraduate students. The researcher used Rasch modeling as the primary quantitative method and thematic analysis as the qualitative method (Rasch, 1960; Braun & Clarke, 2006). By combining quantitative and qualitative methods, a more robust understanding of students' levels of racial stress and perspectives on screening can be attained. The current study utilized a concurrent triangulation mixed-methods design that involved the simultaneous collection of both quantitative and qualitative data. The purpose of this design was to leverage the strengths of quantitative and qualitative data and to integrate results from the analysis stage in order to provide a comprehensive interpretation of the findings from this study. Thus, the researcher adopted a *pragmatic* framework to interpret the mixed quantitative and qualitative data collected in this study. Creswell and Poth (2017) describe the philosophical assumptions of the researcher's pragmatic interpretive framework in this study as follows:

- *Ontology* (What is the nature of reality?): Reality is what is useful, is practical, and “works.”

- *Epistemology* (How do we know what we know?): Reality is known through using many tools of research that reflect both deductive (objective) evidence and inductive (subjective) evidence.
- *Axiology* (How do we include our values in research?): Values are discussed because of the way that knowledge reflects both the researchers' and the participants' views.
- *Methodology* (How does our research emerge?): The research process involves both quantitative and qualitative approaches to data collection and analysis (p. 89).

Quantitative Methodology: The Rasch Model

According to Tanner and colleagues (2018), a large sector of psychometric research related to evaluating measures proposed for screening has relied on methods rooted in classical test theory, such as factor analysis. Though factor analytic methods are widely used for investigating validity evidence that supports the use of an instrument (i.e., by providing information on the factor structure and item correlations with an underlying construct), there are limitations to these methods. For example, results of factor loadings from factor analysis are dependent on whichever sample was used to generate the model (DiStefano et al., 2019). Additionally, factor analysis does not provide information on which items are useful for defining (i.e., measuring) the underlying construct on a linear scale, which is critical for examining the utility and precision of items on a measure (Bond & Fox, 2015). Rasch modeling is one suggested alternative for investigating validity evidence of a rating scale because this model can be used to compare items across groups regardless of the latent trait distribution among groups (Choi et al., 2006).

Rasch modeling refers to a set of various mathematical models used to measure categorical response data (e.g., this did not happen to me, this did happen to me), which are the types of responses commonly used in screeners (Bond & Fox, 2015; Rasch, 1960). Rasch analysis offers a method for examining the construct coverage of items, acceptability of a response scale, or how a person might respond to an item dependent on their own level (e.g., score) of the construct being measured (Bond & Fox, 2015). Georg Rasch (1960) posited that for “successful” measurement, a psychometric instrument must meet three conditions:

1. *Unidimensionality*: all items on a scale measure one single or common construct
2. *Conditional independence*: respondents’ answers on one item are not dependent on their answers to other items on the measure
3. *Measurement invariance*: model parameters for persons and items are the same regardless of which groups are estimated

If a measure meets the Rasch model requirements, it suggests that the instrument has the desired properties of a standard unit of measurement and specific objectivity. For example, the standard units of measurement for a thermometer are degrees of Fahrenheit and Celsius; specific objectivity can be thought of as how these degree units of measurement do not change depending on who is using the thermometer nor depending on what temperature it is. These properties allow for comparisons between persons regardless of which item is used for measurement, but these benefits are only possible if the response data (reasonably) fit the Rasch model. Rasch analysis is therefore advantageous for assessing the measurement utility of an adapted rating scale because it can signal to investigators whether results from screening are comparable across groups (Choi et al., 2006).

The Rasch model provides psychometric information of a measurement instrument based on the interaction between *item difficulty* (δ) and *person ability* (θ ; Bond & Fox, 2015). Item difficulty (δ) is defined as the likelihood of respondents in a sample population to endorse an item. On the other hand, person ability (θ) corresponds to the location of a given respondent in a sample population along the continuum of the intended construct to be measured (Bond & Fox, 2015). The Rasch model predicts that a respondent with low person ability would find it difficult to endorse an item with high item difficulty. For example, a student with low risk for anxiety would be unlikely to endorse an item on an anxiety screener that asks if they experience panic attacks frequently. Conversely, a respondent with high risk for anxiety is expected to endorse more items with higher item difficulty than the respondent with low person ability (Bond & Fox, 2015; Rasch, 1960).

The Rasch model utilizes a *logit* (common, interval level) scale for estimating item difficulties and persons abilities. When the difficulty estimate for an item = 0 logits, this means that there is 50% probability that any respondent endorsed that item. On the other hand, when an ability estimate for a person = 0 logits, it means that this person has a 50/50 chance of endorsing any item on the rating scale. Items with difficulty estimates > 0 logits are less likely to be endorsed across all respondents, whereas items with difficulty estimates < 0 logits are more likely to be endorsed across the sample population.

An item with good fit to the Rasch model is suggested to be productive for measuring an intended construct with a sample population (Bond & Fox, 2015). Item fit is calculated as the difference between how the model predicts the item should have performed and how the item actually performed with respondents (i.e., observed – expected; Bond & Fox, 2015). *Infit* (information-weighted) and *outfit* (outlier-sensitive) statistics present two different

methods for diagnosing item misfit (Bond & Fox, 2015). Outfit statistics are unweighted and sensitive to outlier data, which can be a helpful preliminary step for informing and diagnosing items with misfit. However, item misfit is more difficult to detect and remedy when detected by infit statistics, which are calculated by weighing response patterns that are expected by the model based on overall person ability (θ) within a sample (Bond & Fox, 2015). Therefore, infit statistics were the focus for investigating validity evidence because misfit detected by these statistics present a greater threat to measurement utility.

Underfit indicates that participant response patterns are more erratic than what the model predicts. There are a number of reasons why an item might underfit: respondents may be confused by the way the item is worded, there may be errors made during scoring, or there are too many constructs being measured at the same time (Bond & Fox, 2015). Evaluating underfit is critical because this indicates that an item is not functioning well with persons for whom the item is targeted for. *Overfit* is less problematic for measurement, but it produces response patterns that are overly redundant for the target population. Overfitting items yield misleading results that can make an instrument appear to have higher measurement reliability (i.e., consistency) than it truly does (Bond & Fox, 2015).

Two extensions of the Rasch model were used in this study: the *rating scale model* (RSM; Andrich, 1978) and the *many-facets model* (MFM; Linacre, 1989, 1994). Like other Rasch-based models, the RSM and MFM provide psychometric information of a measurement instrument on a logit scale as a function of item difficulty and person ability (Bond & Fox, 2015). However, the RSM is a case of the polytomous Rasch model that estimates the probability of endorsing an item with multiple, ordered response categories, such as Likert-type scales (Andrich, 1978). The RSM estimates overall item difficulties (δ_i)

as described previously, as well as item-step difficulties (δ_{ik}) to account for the probability of choosing one response category over another adjacent response category (e.g., likelihood of “stepping” up from *agree* to *strongly agree*). For example, if the difficulty estimate for an item-step = 0 logits, this means that there is a 50/50 chance for either adjacent response category of an item to be chosen by a respondent.

The Rasch MFM provides estimates based on an interaction between item difficulty, person ability, and an additionally specified *facet*. In this study, group membership was specified as a facet in order to investigate measurement invariance of items on a rating scale. The MFM is helpful for understanding how intersectional factors can influence the scores respondents receive as well as how they respond to certain items on a rating scale. The three facets specified for the current study were gender, generational status, and HBCU affiliation among Black undergraduate student participants.

Qualitative Methodology: Thematic Analysis

The six-step *thematic analysis* process described by Victoria Braun and Virginia Clarke (2006) was used to analyze qualitative data collected in the present study. Thematic analysis is a flexible method that can be applied across a broad range of research paradigms, such as the pragmatic interpretive framework (Boyatzis, 1998; Clarke & Braun, 2017). This method is used for identifying and organizing *themes* (i.e., patterns), as well as providing a detailed description of a qualitative data set (Boyatzis, 1998). A theme “captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (Braun & Clarke, 2006, p. 82). *Codes* are the smallest units of analysis, often in the form of renamed participant excerpts, that capture elements of qualitative data that are relevant to the research topic (Clarke & Braun, 2017).

Themes “emerge” from qualitative data to represent a central organized set of codes through either an inductive (data-driven) or deductive (theory-driven) process. Although a theme should appear often enough to be considered relevant to the research topic, a more frequently occurring theme does not necessarily mean that the theme is more important than other themes identified during the coding process. As Braun and Clarke (2006) noted, a theme “might be given considerable space in some data items, and little or none in others, or it might appear in relatively little of the data set,” but it should capture “an important element” of the research topic (p. 82). In the current study, an inductive approach of the six-step thematic analysis process was applied as follows (Braun & Clarke, 2006):

1. *Familiarizing yourself with the data*: Reading and re-reading the data, noting down initial ideas.
2. *Generating initial codes*: Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. *Searching for themes*: Collating codes into potential themes, gathering all data relevant to each potential theme.
4. *Reviewing themes*: Checking if the themes work in relation to the coded extracts and the entire data set, generating a thematic ‘map’ of the analysis.
5. *Defining and naming themes*: Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. *Producing the report*: The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of

the analysis to the research question and literature, producing a scholarly report of the analysis.

Given the pragmatic interpretive framework used to guide the current study, the researcher recognizes that her perspective—including her beliefs, feelings, assumptions, and ideologies—inform how interpretations of participants' viewpoints are developed from qualitative analysis. The researcher's *insider-outsider* knowledge as a Black woman who has previously navigated undergraduate studies may be helpful for interpreting the findings of this particular study (Dwyer & Buckle, 2009). But any conclusions made from information gathered from the participants in the current study will be based on the researcher's interpretations, which involve her own values and biases. Therefore, it is critical for the researcher to state her position in the research study as well as the context in which the research study takes place.

Researcher Positionality

Isabelle Fleury is a 29-year-old Black woman in her sixth year of graduate school who is pursuing a doctoral degree in applied psychology. Fleury is the daughter of Haitian immigrants who eventually moved to Long Island, New York by the time she began attending pre-kindergarten. Fleury's parents were medical doctors who were able to provide her with private religious schooling from early childhood through high school age. Fleury initially did her best to maintain her beliefs in a "just world," but has experienced racial stressors throughout her educational journey.

Fleury completed her undergraduate studies at a public, predominantly White university in New Jersey and her graduate program is at a central California public university classified as a Hispanic-serving institution. Fleury completed her doctoral internship at a high

school in the northwestern suburbs of Chicago, Illinois. She was inspired to begin this research study after the murder of George Floyd during the COVID-19 pandemic, a time when she was feeling powerless and more sensitive to racially stressful situations.

Fleury's research is funded by grants from the University of California, Santa Barbara.

Chapter 3

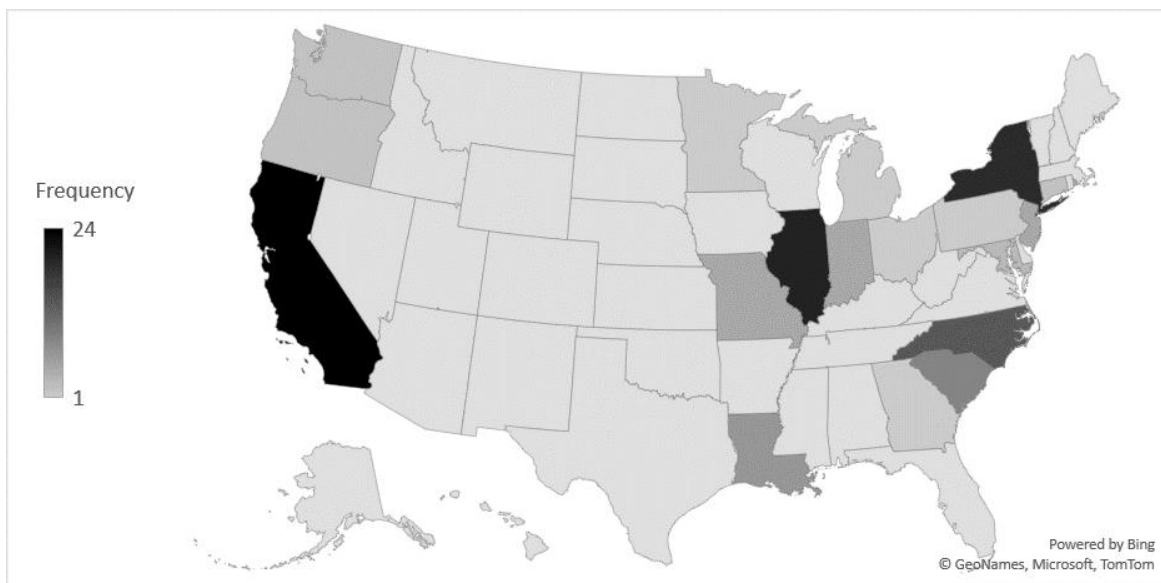
METHODS

Participants

Participants were $N = 122$ Black undergraduate students who were at least 18 years old ($M = 20.99$ years old, $SD = 4.39$ years) and enrolled in a college or university in the United States at the time of data collection. Almost the entire sample of participants were attending 4-year degree-granting institutions (99.2%), with the majority enrolled in a public college or university (80.3%). Most participants were attending school in suburban areas (43.4%), followed by 37.7% in urban areas, and 15.6% in rural areas. Figure 3.1 displays a map illustrating the geographic distribution of Black undergraduate students who participated in the current study.

Figure 3.1

Geographic Distribution of Study Participants ($N = 122$)



The demographic variables of interest in this study were gender, generational status, and HBCU affiliation. Almost three-quarters of participants were women (74.6%), almost half were first-generation students (45.9%), and about one-fifth were HBCU students (19.7%). Most participants identified as Black or African American only (70.5%) and the remainder identified as multiracial or multiethnic (29.5%). About half of participants reported being middle class or higher SES (47.5%). Regarding undergraduate year, 43.5% of participants were first-years or sophomores; 55.8% were juniors, seniors, or students in their fifth year or higher. A summary of participant-reported demographic information is on Table 3.1.

Table 3.1*Participant Demographics (N = 122)*

	%	<i>n</i>
Race and/or Ethnicity		
Black or African American only	70.5	91
Multiracial or multiethnic	29.5	31
Gender		
Woman	74.6	91
Man	19.7	24
Non-Binary	4.1	5
Generational Status		
First-generation student	45.9	56
Continuing-generation student	50.8	62
HBCU Affiliation		
HBCU student	19.7	24
Non-HBCU student	80.3	98
Socioeconomic Status		
Poor	5.7	7
Working class	26.2	32
Lower-middle class	19.7	24
Middle class	30.3	37
Upper-middle class	16.4	20
Upper class	0.8	1
Undergraduate Year		
First-year	23.8	29
Sophomore	19.7	24
Junior	23.8	29
Senior	27.9	34
Fifth-year or higher	4.1	5

Note. Participants were given option of "Prefer not to say" for each item on the demographic questionnaire. Therefore, categories listed here may not all add up to 100%.

Measures

Demographic Questionnaire

Participants were required to fill out a demographic questionnaire (see Appendix A) that asked them to identify their race/ethnicity, gender, HBCU affiliation, SES, and undergraduate year.

Baseline Measure of Stress and Well-Being

Participants were also asked to rate their general levels of stress and well-being on the demographic questionnaire in order to establish a baseline before continuing to the measure of racial stress. Specifically, participants were asked “On a scale of 1-10, how would you rate your stress during the PAST TWO WEEKS?”, with 1 = “No stress at all” and 10 = “More stress than ever”. Likewise, participants used a sliding scale (allowing responses in 0.1 increments) to rate their well-being over the past two weeks, with 1 = “Terrible” and 10 = “Excellent”.

Researcher-adapted Racial Stress Survey for Black Undergraduates (RSS-BU)

Adaptation Process. The 30-item Racial Stress Survey – Black Undergraduates (RSS-BU) was developed to build a targeted measure of racial stress for the current study. The intention for using an adapted measure was to best capture the entire continuum of racial stressors that may impact Black undergraduate students via personal, vicarious, or campus-based experiences. Because there is not a presently available measure for this purpose, the RSS-BU was created in consultation with supervising faculty and colleagues at the primary investigator’s home university.

The adaptation was done by combining 30 select items from two presently available measures of racial stress and campus racial climate: (a) the Index of Race-Related Stress-

Brief Version (IRRS-B; Utsey, 1999); and (b) the Campus Racial Climate for African Americans Scale (CRCAAS; Thomas, 2017). The IRRS-B has more published evidence for its use as a measure of racial stress (e.g., Utsey & Ponterotto, 1996; Utsey, 1999; Chapman-Hillard et al., 2020), but does not include items about campus racial climate. On the other hand, the CRCAAS was developed more recently, so while it has promise as a measure of campus racial climate, there is not as much available literature on the psychometric properties of the measure. However, because the proposed goal is the implementation of racial stress screening of Black undergraduate students, it is critical to include campus racial climate in this prototype of a campus-based racial stress screening measure.

Index of Race-Related Stress-Brief Version (IRRS-B). Though there are several scales currently available for assessing racial stress, the rating scale selected to include in the researcher-adapted racial stress measure proposed here for investigation is the Index of Race-Related Stress-Brief Version (IRRS-B; Utsey, 1999). The IRRS-B is a shorter form of the Index of Race-Related Stress (Utsey & Ponterotto, 1996), which was developed to measure the levels of stress experienced by Black people in response to anti-Black racism and discrimination. Rather than assessing general stress or racial stressors that could apply to a wide range of racial groups, the IRRS-B measures racial stressors specifically experienced by Black people. This scale also considers vicarious racial stress by asking respondents to rate racism experienced by them or by someone who is close to them.

Given that this shorter form has a 9th grade reading level (based on a score of 4.0 on the Rix Readability Index; J. Anderson, 1983) and takes about 5-15 minutes to complete, it is a practical tool to be used in settings like college and university mental health centers (Utsey, 1999). Additionally, the preliminary and later studies examining the IRRS-B included Black

undergraduate participants (Chapman-Hillard et al., 2020; Utsey, 1999; Utsey & Ponterotto, 1996). Finally, because the IRRS-B consists of three sub-scales that reflect Jones's (1972) definitions of the three primary forms of racism, information gathered from screening can be used to inform interventions and supports to combat multiple forms of racism (i.e., individual, institutional, and cultural racism). These sub-scales are described with example items as follows (Utsey, 1999, p. 153):

- The *Cultural Racism* sub-scale consists of 10 items that measure “the experience of racism when one’s culture is denigrated or maligned.” For example, “You seldom hear or read anything positive about Black people on radio, T.V., newspapers, or history books.”
- The *Institutional Racism* sub-scale consists of six items that measure “the experience of racism embedded in the policies and practices of a given institution.” For example, “You were passed over for an important project although you were more qualified and competent than the White/non-Black person given the task.”
- The *Individual Racism* sub-scale consists of six items that measure “racism experienced on an interpersonal level.” For example, “While shopping at a store the sales clerk assumed that you couldn't afford certain items (i.e. you were directed toward the items on sale).”

Campus Racial Climate for African Americans Scale (CRCAAS). The Campus Racial Climate for African Americans Scale (CRCAAS) was developed using a mixed-methods approach, including group interviews, thematic analysis, factor analysis, and expert review of items (Thomas, 2017). The 31-item CRCAAS is a multidimensional measure for

assessing Black undergraduate students' perceptions of racial climate at their institutions.

The CRCAAS is reflective of three themes that emerged during the item development phase (Thomas, 2017):

- The *Institutional Factors* dimension consists of eight items referring to “the characteristics, practices, and policies within the structure of the university that promote racial/ethnic diversity, multiculturalism, and the support of African American students across multiple levels of the institution” (Thomas, 2017, p. 29). For example, “The university hosts events that promote and celebrate African American culture.”
- The *Racial Attitudes & Experiences* dimension consists of six items referring to “perceptions of the beliefs individuals hold about African American students and the impact of those perceived attitudes and stereotypes on African American students” (p. 33). For example, “African American students must go above and beyond to get the same benefits as students of other races/ethnicities.”
- The *Student Interracial Interactions* dimension consists of three items referring to “day to day interactions that African American students have with students of other races and ethnicities and that students of all races and ethnicities have across racial lines” (p. 34). For example, “Students from different races and ethnicities attend social events together.”

RSS-BU Scoring. The final researcher-adapted version of the RSS-BU is comprised of 30 items across four domains: *Cultural Racism*, *Individual Racism*, *Institutional Racism*, and *Campus Racism*. The Cultural Racism, Individual Racism, and Institutional Racism domains consist of all 22 items from the IRRS-B. The Campus Racism domain consists of

eight items from the CRCAAS: four items from the Institutional Factors dimension, two items from the Racial Attitudes & Experiences dimension, and two items from the Student Interracial Interactions dimension.

When responding to items from the Cultural, Individual, and Institutional Racism domains of the RSS-BU, participants rate the amount of distress they felt following a racist encounter experienced by them or someone very close to them. Participants indicate this by using the 5-point Likert-type scale provided: 0 = *this never happened to me*, 1 = *this event happened, but did not bother me*, 2 = *this event happened, and I was slightly upset*, 3 = *this event happened, and I was upset*, and 4 = *this event happened, and I was extremely upset*. To complete items from the Campus Racism domain, participants rate how they perceive the racial climate at their institutions by using a similar 5-point Likert-type scale: 0 = *Strongly Disagree*, 1 = *Disagree*, 2 = *Neither Agree nor Disagree*, 3 = *Agree*, and 4 = *Strongly Agree*. Participants were also given the option of *Prefer not to say* on all RSS-BU items.

Prior to scoring the RSS-BU, Campus Racism items that describe a positive campus racial climate (e.g., “The university has practices in place that support African American students.”) must first be reverse-coded so that higher scores are indicative of higher levels of racial stress. Then, domain scores are calculated by summing together a participant’s responses for items corresponding to each respective domain. The Total score is calculated by summing together all domain scores. The range of possible scores is as follows:

- Cultural Racism (10 items): 0-40
- Individual Racism (6 items): 0-24
- Institutional Racism (6 items): 0-24
- Campus Racism (8 items): 0-32

- Total Score (30 items): 0-120

To help with interpretation of item-level results in the current study, item labels were assigned to each item as paraphrased versions of the actual item content (see Appendix B). For example, the label for item 7 is “assume can't afford items,” but the actual item content is “While shopping at a store the sales clerk assumed that you couldn't afford certain items (i.e., you were directed toward the items on sale).”

Researcher-developed Social Validity Questionnaire (SVQ)

Given the importance of assessing the acceptability, appropriateness, and usability of racial stress screening, the Social Validity Questionnaire (SVQ; see Appendix C) was developed to gather perspectives from Black undergraduate students about campus-based racial stress screening and about the RSS-BU as a potential measure of racial stress. The SVQ consists of five Likert-type questions and two open-response questions. The Likert-type questions are scored on a 6-point response scale: 0 = *Strongly Disagree*, 1 = *Disagree*, 2 = *Somewhat Disagree*, 3 = *Somewhat Agree*, 4 = *Agree*, and 5 = *Strongly Agree*. Participants were also given the option of *Prefer not to say* on the Likert-type SVQ questions.

Procedures

Approval from the Institutional Review Board (IRB) was obtained in December 2021 prior to data collection beginning in January 2022 and ending in April 2022 (see Appendix D). Participants were recruited, with permission, via online methods, including electronic mailing lists, Black interest listservs, social networking sites, and organizational email listservs. Recruitment incentives for participants included being entered into a drawing for one \$500 Amazon eGift Card, in addition to a \$10 Amazon eGift Card for each Black undergraduate student who participated in the study (see Appendices E and F). These

incentives were made possible by the Kennedy/Graves Research Fund and the Ray E. Hosford Memorial Fellowship.

Potentially eligible participants were provided with a Qualtrics (Qualtrics, 2020) link that directed them to confirm if they met eligibility criteria. To have been eligible for this study, a participant would have had to be at least 18 years old and a Black undergraduate student enrolled in a college or university in the United States at the time of data collection. Persons who did not meet eligibility for the study were immediately notified so that they did not continue on to the study protocol, and any data collected by Qualtrics was deleted from the database. Eligible participants were then directed to an explanation of the purpose, protocol, and informed consent procedures for the current study (see Appendix G). After completing the informed consent procedures, eligible participants completed the demographic questionnaire, then the RSS-BU, and, finally, the SVQ.

To prevent high item-level missing data, the study protocol was set up in a way so that participants would be required to select an answer for each question before submitting their responses, with an option of *Prefer not to say* for each question. Participant data were exported from Qualtrics into Microsoft Excel and IBM SPSS Statistics Version 28.0 (IBM Corp., 2021) to de-identify, clean, reverse code, and score responses prior to analysis. SPSS and RStudio (RStudio Team, 2015) were used for quantitative analyses, while Microsoft Excel and NVivo (QSR International Pty Ltd., 2022) were used for qualitative analyses. Though there were $n = 4$ participants who reported their gender as non-binary, these participants were not included in comparison analyses (i.e., t -tests and differential functioning) due to small sample size.

Analysis Plan

Preliminary Analyses

Baseline Levels of Stress and Well-Being. Baseline levels of stress and well-being reported by participants were assessed with descriptive statistics and a scatter plot.

Initial Data Screening. Initial data screening of the RSS-BU was done by running descriptives in SPSS to check for item-level missing data, means (M), standard deviations (SD), and normality. Missing data were not seen as an issue if there were less than 5% of missing responses per item.

RQ1 Analysis: (a) What scores did Black undergraduate student participants receive after completing the RSS-BU? (b) Did scores differ across gender, HBCU affiliation, and generational status?

Mean Participant Scores. Distributions of RSS-BU domains (i.e., Cultural, Individual, Institutional, and Campus Racism) and Total scores across participants were explored through descriptive statistics—including means (M), standard deviations (SD), and normality (i.e., skewness and kurtosis)—and histograms.

Mean Participant Scores by Demographic Group. To investigate potential group differences in RSS-BU domain and Total scores, two-tailed independent samples t -tests were conducted across demographic variables of interest (i.e., gender, generational status, and HBCU affiliation). A Bonferroni correction was applied to the original $\alpha = .05$ to curb the potential risk of a Type 1 error (i.e., false positive) with multiple tests. The Bonferroni correction was calculated by dividing the original α level by the number of tests being performed ($.05/[4 \text{ domain scores} + 1 \text{ Total score}]$), resulting in an adjusted $p^* < .01$ for statistical significance ($p^{**} < .005$, $p^{***} < .0025$). Cohen's (1998) d and 95% confidence intervals (CI) were used for reporting effect sizes for each t -test that was conducted. Effect

sizes can be interpreted as small if $d \geq 0.2$, medium if $d \geq 0.5$, and large if $d \geq 0.8$ (Cohen, 1998). Dummy-coding was used to conduct these t -tests in SPSS as follows:

- Gender: 0 = *woman*, 1 = *man*
- Generational status: 0 = *continuing-generation*, 1 = *first-generation*
- HBCU affiliation : 0 = *non-HBCU student*, 1 = *HBCU student*

RQ2 Analysis: (a) Is the RSS-BU effective in measuring the racial stress of Black undergraduate students? (b) Does the RSS-BU measure racial stress equivalently across gender, HBCU affiliation, and generational status?

An in-depth investigation of the measurement utility of the RSS-BU using Rasch methodology requires a multi-step process and synthesis of results. In the current study, this process began with the polytomous Rasch Rating Scale Model (RSM), then, the dichotomous Rasch Many-Facets Model (MFM), and finally, a summary of infit statistics and differential functioning across all RSS-BU items.

Polytomous Rasch Rating Scale Model (RSM). The polytomous Rasch Rating Scale Model (RSM; Andrich, 1978) was used to investigate the reliability, construct coverage, and item-level model fit of the RSS-BU. The TAM package (Robitzsch et al., 2020) in RStudio was used to estimate the parameters of the RSM with Warm's (1989) Mean Weighted Likelihood Estimation (WLE). WLE reliability estimates are interpreted similarly to α reliability estimates, in which higher values indicate higher levels of correlation between items on the scale, and vice versa. For this study, the criteria for acceptable scale-level reliability was determined by a WLE value greater than .70 and less than .90. Lower reliability coefficients suggest that items on a scale may not be related to each other or that more than one construct is being measured by the items on the scale. Conversely, extremely

large values can imply that items on a scale are overly redundant or that the scale has an excessive number of items needed to measure the intended construct (Tavakol & Dennick, 2011).

Construct Coverage. Because the RSM accounts for the likelihood of choosing one response category over another, both overall item difficulties (δ_i) and item-step (δ_{ik}) difficulties were reported for the polytomous Rasch RSM. The range of overall item difficulties (δ_i), item-step difficulties (δ_{ik}), and person estimates (θ) based on participant responses to the RSS-BU were explored to understand construct coverage of the measure. Wright Maps were created in RStudio (Irribarra & Freund, 2014) in order to provide a visual representation of construct coverage. A Wright Map for a measure with quality construct coverage would display items along the entire continuum of low to high levels of racial stress reported by participants. The x -axis of a Wright Map consists of all items on the RSS-BU, plotted according to their respective levels of item difficulty (δ_i) or item-step difficulty (δ_{ik}). The y -axis of a Wright Map consists of all participants plotted according to their respective levels of reported racial stress (θ).

Item Fit. Infit (information-weighted) statistics were investigated in the current study because item misfit detected by these statistics present a greater threat to measurement utility. Infit statistics are represented by Mean Squares ($MNSQ$), a calculation of the average squared residuals based on model expectation and actual observations on a given item (Bond & Fox, 2015). Specifically, $MNSQ$ are chi-square statistics divided by their degrees of freedom (Linacre, 2002). The current study utilized the range of $MNSQ$ values (0.6 to 1.4) suggested by Wright and Linacre (1994) for determining reasonable model fit with rating scales. Underfit in this study was detected if there was at least 40% more variation in responses than

the RSM predicted ($MNSQ > 1.4$). On the other hand, overfit was detected if there was at least 40% less variation than predicted ($MNSQ < 0.6$). A Bonferroni correction (.05/30 item-level estimates) was applied for the significance level of item fit statistics ($MNSQ$), resulting in an adjusted $\alpha = .0017^*$ ($p^{**} < .0008$, $p^{***} < .0004$). Rasch standardized fit statistics (Z) were also reviewed to test the significance of model fit, in which values greater than 2.0 suggest significant likelihood of the item underfitting the model and values less than -2.0 suggest significant likelihood of overfit (Bond & Fox, 2015; Linacre, 2002).

Dichotomous Rasch Many-Facets Model (MFM). Because the RSS-BU has multiple response categories, any differential item functioning (DIF) detected with polytomous items would imply a between-group difference in the probability of selecting a given response category rather than a difference in the probability of reporting lower versus higher levels of racial stress (Penfield & Lam, 2000). Alternatively, examining DIF with dichotomous items is simpler because there are only two possible outcomes to an item, allowing for a single, unambiguous measure of probability for a correct response (e.g., yes or no; Penfield & Lam, 2000). Thus, one solution to this obstacle of detecting DIF with polytomous items is to combine ordinal response categories into a dichotomous response structure (Penfield & Lam, 2000). Specifically, the 5-point response categories were recoded in the following manner to differentiate from participants who reported lower levels of racial stress and those who reported higher levels of racial stress:

- 0 = (*this never happened to me/Strongly Disagree*) + (*this event happened, but did not bother me/Disagree*)

- 1= (*this event happened, and I was slightly upset/Neither Agree nor Disagree*) + (*this event happened, and I was slightly upset/Agree*) + (*this event happened, and I was extremely upset/Strongly Agree*)

A dichotomous Rasch many-facets model (MFM) was run using the TAM package to detect potential differential item functioning (DIF) for the RSS-BU. The dichotomous Rasch MFM in this study was an interaction of item difficulty (δ_i) and group membership—using the same previously dummy-coded demographic variables of interest—while holding person estimates across groups constant (θ). Similar to previous steps, acceptable scale-level reliability was determined if $.70 < WLE < .90$.

Differential Item Functioning (DIF). To achieve parameter invariance, item difficulties (δ_i) produced by the Rasch model should be the same (within reason) regardless of which sub-groups are examined in a sample population (Bond & Fox, 2015). Criteria for presence of DIF in the current study was determined by a difference of at least 0.5 logits between groups based on item difficulty estimates (δ_i). Positive DIF values indicate that the item was more difficult for the reference group (0) to endorse, even when participants are matched on their reported levels of racial stress. On the other hand, negative DIF values suggest the item was more difficult for the focal group (1) to endorse. In other words, positive DIF means that participants in the reference group were less likely to report racial stress, whereas negative DIF means they were more likely to report higher levels of racial stress on the respective item.

To test the significance of any item-level differences found across group membership, Z-scores were calculated by dividing the interaction estimate value by the standard error (*SE*) for each item. To prevent the likelihood of a Type 1 error, a Bonferroni correction was

applied to adjust the significance level of any DIF detected by the dichotomous Rasch MFM (.05/30 item-level estimates). The Bonferroni correction determined that DIF values would only be considered significant at $p^* < .0017$ if the resulting Z -score $> |3.315|$.

Item-Level Rasch Diagnostics. A summary of all Rasch model analyses will be presented in Results to help “diagnose” any RSS-BU items identified as problematic during this multi-step process.

RQ3 Analysis: What perspectives do Black undergraduate students have on campus-based racial stress screening?

Descriptives of Likert-Type Items. Descriptive statistics (i.e., item-level frequencies, means, and standard deviations) were investigated for the five Likert-type items of the SVQ.

Thematic Analysis of Open-Ended Responses. After qualitative excerpts were imported into Excel and NVivo, the six-step process outlined by Braun and Clarke (2006) was used to conduct thematic analysis of the data using inductive coding.

After familiarizing herself with the data (Step 1), the researcher used inductive (open) coding procedures to generate initial codes from participant excerpts (Step 2). Lengthy participant excerpts that contained multiple sentences or clauses were split up and coded separately. For example, “I think it would be a good thing and help identify issues, but my university needs to get more black therapists first” was split up as “I think it [...] identify issues” and “but my [...] therapists first,” before a unique code was created for each. The researcher then examined initial codes to explore preliminary emergent themes (Step 3). Each unique code was sorted into one preliminary theme so that no codes were repeated across themes. The researcher then reviewed and organized the preliminary themes until

reaching a finalized set of themes (Step 4). Once themes were established, the researcher named and defined each theme (Step 5) prior to the completion of this manuscript (Step 6).

Chapter 4

RESULTS

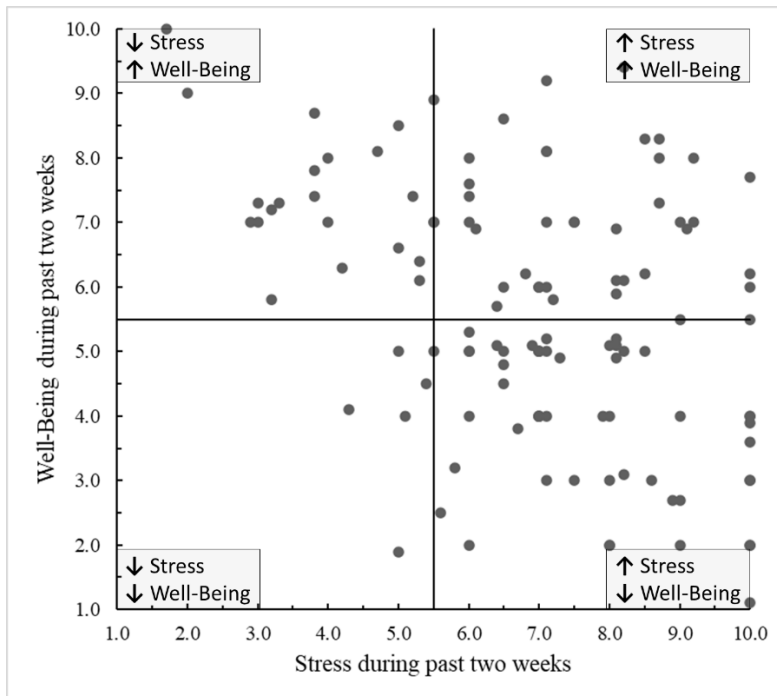
Preliminary Analyses

Baseline Levels of Stress and Well-Being

Figure 4.1 displays a scatterplot, separated into four quadrants, illustrating general levels of stress and well-being reported by $N = 122$ participants at baseline. Most participants (76%) in the current study reported experiencing somewhat high to high levels of general stress ($M = 6.94$, $SD = 1.95$). On the other hand, there was a relatively even split between lower (50.8%) and higher (49.2%) levels of general well-being reported among participants ($M = 5.56$, $SD = 1.96$).

Figure 4.1

Scatterplot of Baseline General Stress and Well-Being Reported by Study Participants



Initial Data Screening

Table 4.1 shows item-level descriptives for the RSS-BU. All items had less than 5% missing responses.

Table 4.1

Item-Level Means and Response Category Frequencies of Racial Stress Survey - Black Undergraduates (RSS-BU)

Item	Label	Domain	M	SD	Skewness	Kurtosis	Response Category Frequencies					
							0	1	2	3	4	Prefer not to say
1	crimes romanticized	Cultural	3.12	1.13	-1.63	2.22	10	--	11	45	56	--
2	respect when shopping	Individual	2.00	1.27	0.00	-1.00	18	26	34	26	18	--
3	police killing deserved	Cultural	3.46	1.01	-2.17	4.28	5	3	7	23	84	--
4	threat physical violence	Institutional	1.43	1.63	0.50	-1.47	61	8	10	20	21	2
5	Black kids as wild animals	Cultural	3.01	1.16	-1.34	1.13	9	5	12	46	50	--
6	rarely positive in media	Cultural	2.47	1.23	-0.61	-0.44	13	10	31	41	26	1
7	assume can't afford items	Individual	1.55	1.57	0.43	-1.38	50	16	18	15	23	--
8	victimization as Black experience	Institutional	1.18	1.65	0.85	-1.08	76	2	9	11	22	2
9	less courtesy in business establishment	Individual	2.53	1.37	-0.69	-0.67	19	5	26	35	36	1
10	passed over for project	Institutional	1.62	1.64	0.29	-1.59	54	6	16	20	24	2
11	staring like you don't belong	Individual	2.66	1.31	-0.50	-1.00	8	20	24	24	46	--
12	police treat others with dignity	Cultural	3.05	1.27	-1.44	1.06	13	2	10	38	59	--
13	subjected to racist jokes	Institutional	2.23	1.61	-0.35	-1.49	33	9	12	31	36	1
14	ignored as a customer	Individual	1.51	1.43	0.26	-1.38	49	10	26	26	11	--
15	observing anti-Black racism	Cultural	3.08	1.33	-1.45	0.82	14	4	6	32	66	--
16	false reports of crime	Cultural	2.65	1.67	-0.80	-1.11	31	--	8	22	59	2
17	media playing up stories	Cultural	2.98	1.18	-1.20	0.76	9	4	19	39	51	--
18	racist remarks from White public figures	Cultural	3.07	1.21	-1.31	0.82	9	5	15	32	60	1
19	given undesirable work	Institutional	1.35	1.57	0.56	-1.35	63	8	13	21	17	--
20	desire of non-Black physical characteristics	Cultural	2.70	1.37	-0.78	-0.58	15	8	23	29	47	--
21	treated as if unintelligent	Individual	2.20	1.56	-0.31	-1.41	32	7	22	26	35	--
22	refused housing	Institutional	0.74	1.34	1.48	0.56	87	4	6	13	8	4
23 ^R	supportive university practices	Campus	1.26	0.99	0.82	0.70	26	54	31	6	5	--
24 ^R	Black cultural events	Campus	1.26	1.03	0.73	-0.07	28	55	20	15	3	1
25 ^R	Black history courses	Campus	0.86	0.84	0.96	1.08	45	55	17	4	1	--
26	Black faculty representation	Campus	1.98	1.42	0.04	-1.35	23	30	18	27	23	1
27	students must go above and beyond	Campus	3.05	1.02	-0.72	-0.49	1	9	27	31	54	--
28	racism on campus	Campus	2.24	1.28	-0.27	-0.91	15	18	33	31	23	2
29 ^R	interracial social events	Campus	1.27	1.00	0.76	-0.09	24	63	15	18	2	--
30 ^R	interracial studying	Campus	1.09	0.95	0.77	0.08	34	56	18	12	1	1

Note. ^R denotes reverse coded item

RQ1: (a) What scores did Black undergraduate student participants receive after completing the RSS-BU? (b) Did scores differ across gender, HBCU affiliation, and generational status?

Mean Participant Scores

Table 4.2 shows a summary of participant scores on the RSS-BU, including *M*, *SD*, skewness, and kurtosis.

Table 4.2

Mean Participant Scores on Racial Stress Survey - Black Undergraduates (RSS-BU)

Domain	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Cultural Racism	29.49	7.97	-1.07	1.28
Individual Racism	12.43	6.24	-0.16	-0.83
Institutional Racism	8.43	6.26	0.41	-0.77
Campus Racism	12.93	5.34	-0.03	0.13
Total	63.29	19.74	-0.28	-0.41

As demonstrated by Figure 4.2, most participants reported higher levels of racial stress in the Cultural Racism domain ($M = 29.49$, $SD = 7.97$).

Figure 4.2

Distribution of Cultural Racism Domain Scores

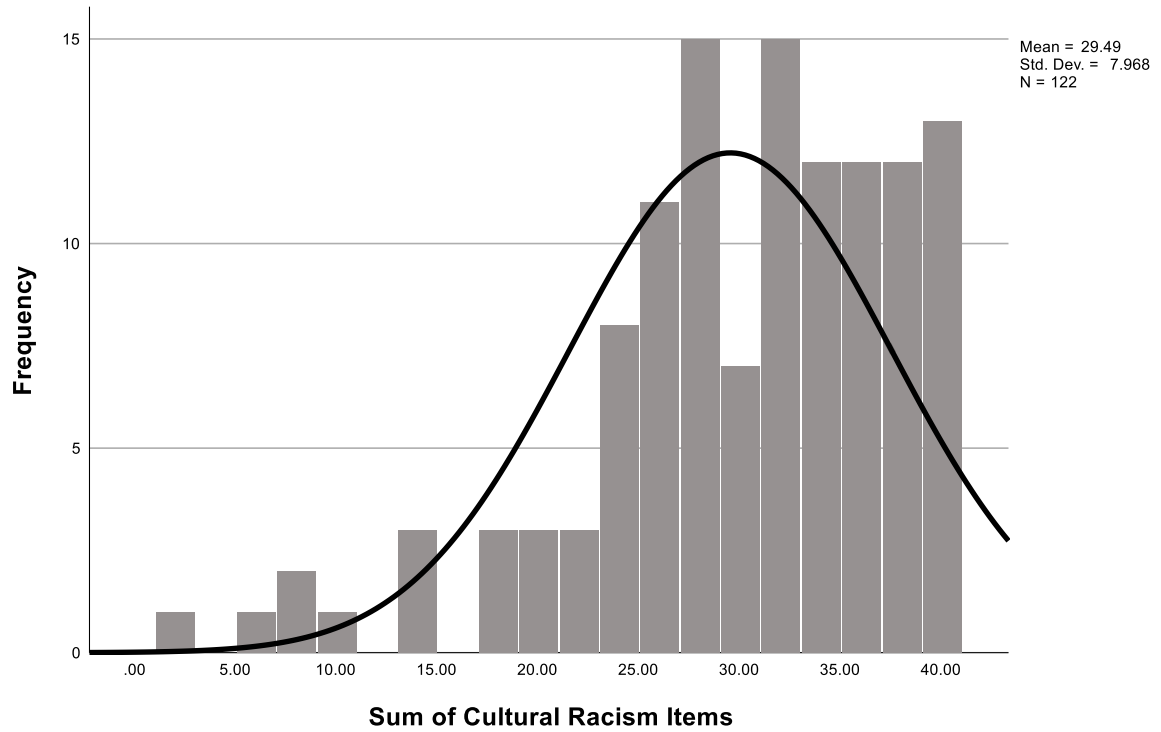


Figure 4.3 displays Individual Racism scores, showing that participants reported varying levels of racial stress in this domain ($M = 12.43$, $SD = 6.24$).

Figure 4.3

Distribution of Individual Racism Domain Scores

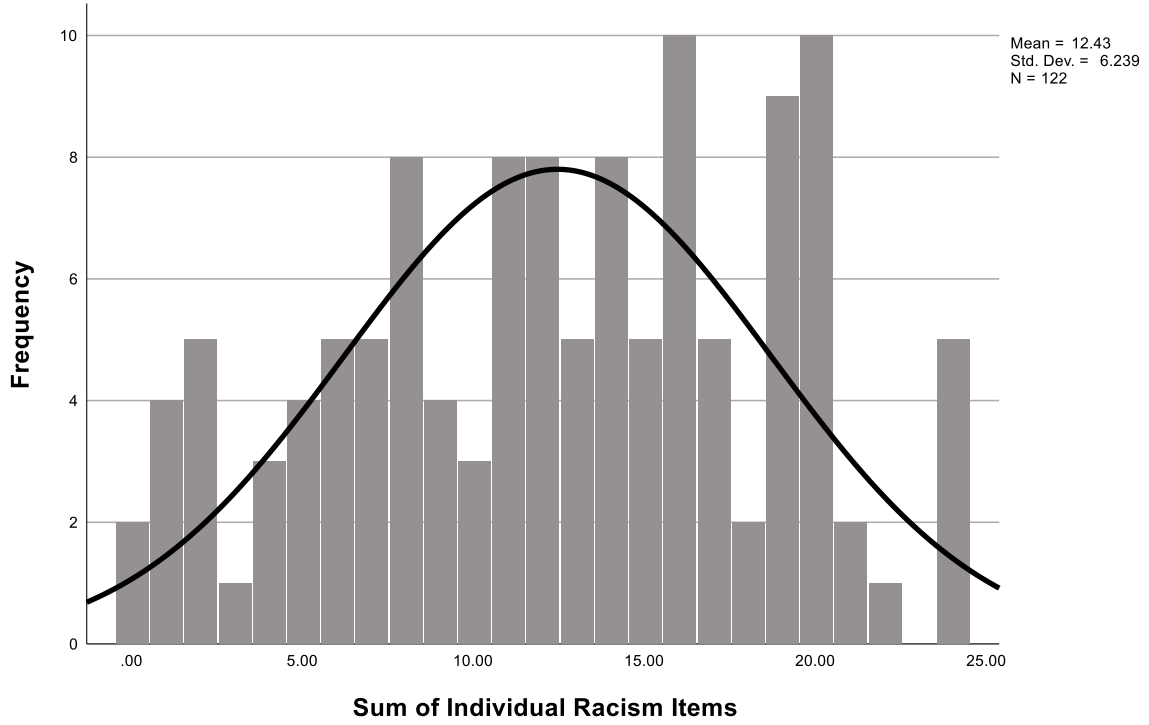


Figure 4.4 demonstrates how participants generally reported lower levels of racial stress related to Institutional Racism ($M = 8.43$, $SD = 6.26$).

Figure 4.4

Distribution of Institutional Racism Domain Scores

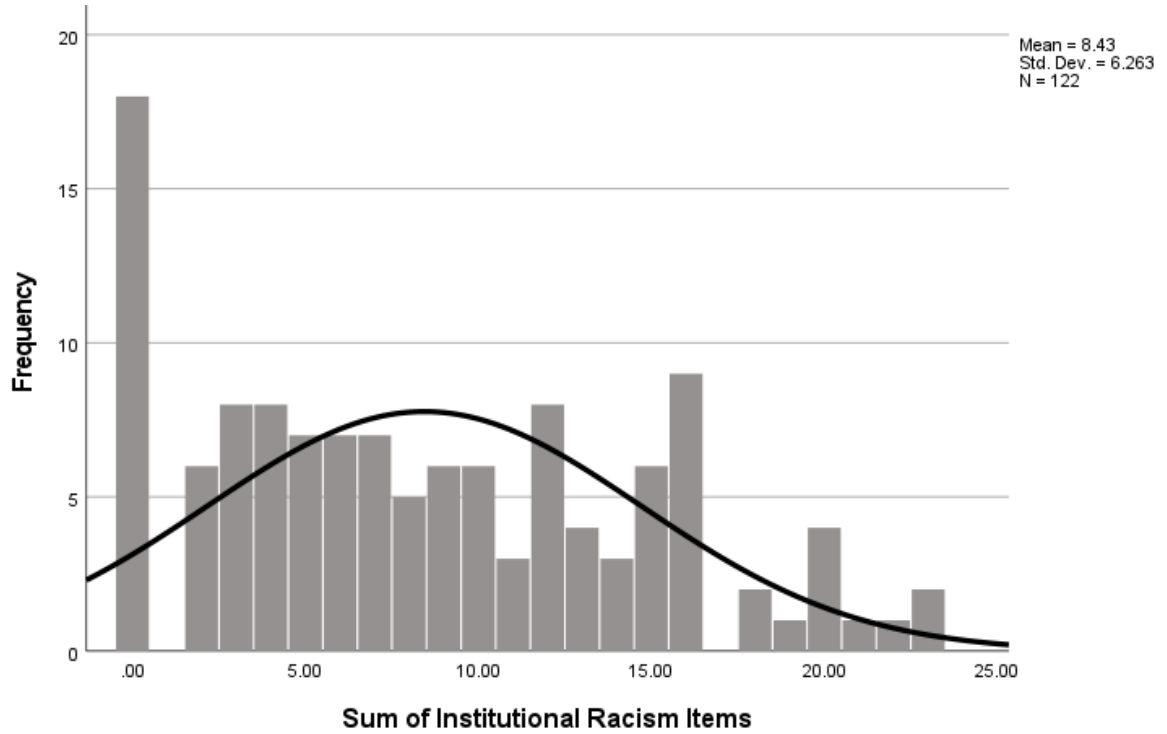
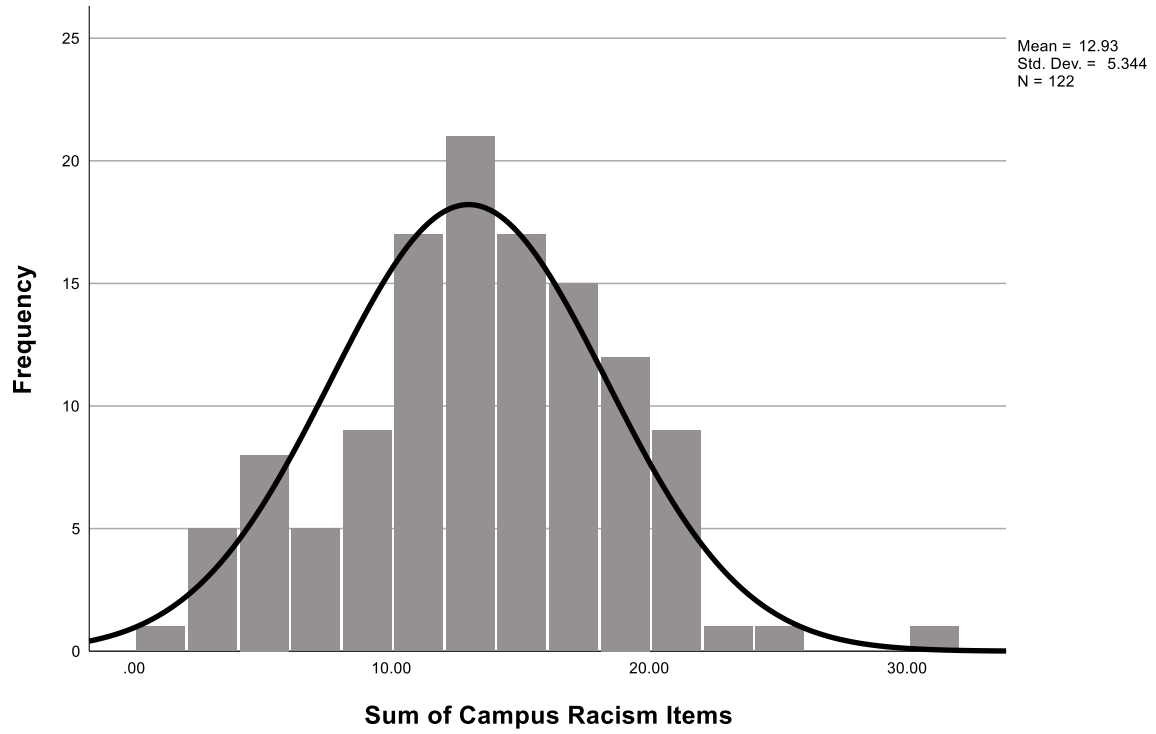


Figure 4.5 shows how, for Campus Racism, participant scores were normally distributed around the mean ($M = 12.93$, $SD = 5.34$).

Figure 4.5

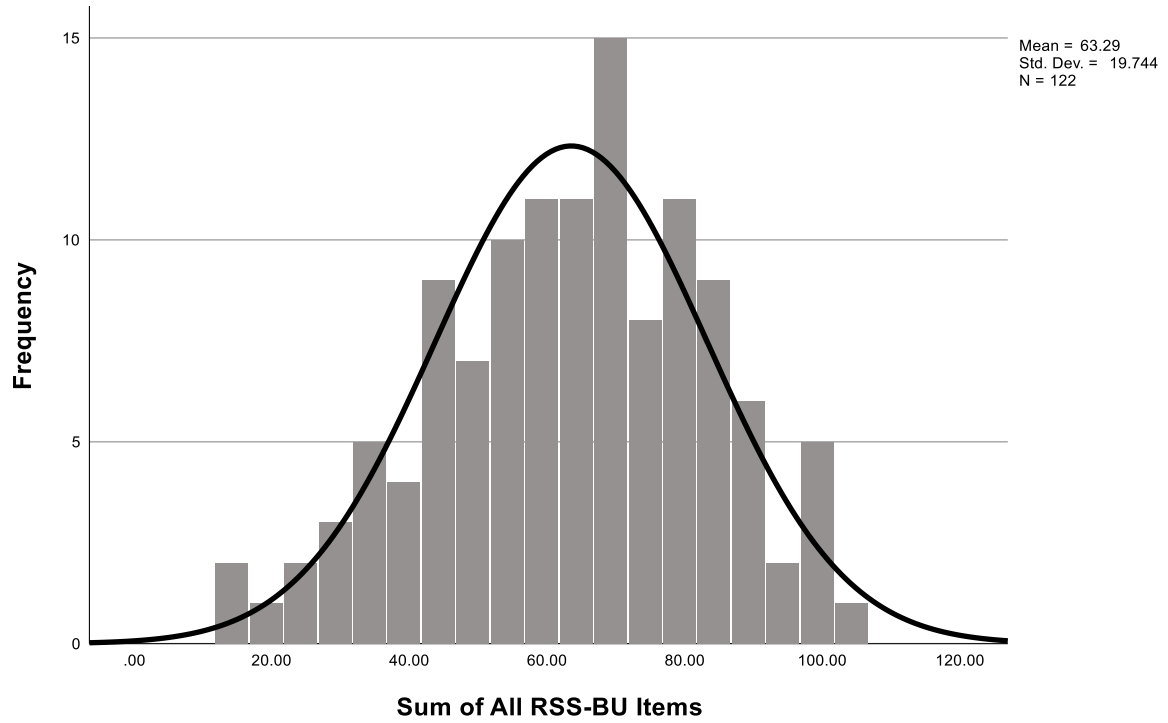
Distribution of Campus Racism Domain Scores



Likewise, Figure 4.6 shows a normal distribution of participants' Total scores ($M = 63.29$, $SD = 19.74$).

Figure 4.6

Distribution of Total RSS-BU Scores



Mean Participant Scores by Demographic Group

A summary of sub-scale and raw total scores by demographic group is on Table 4.3.

Table 4.3

Mean Participant Scores on RSS-BU by Demographic Group

Demographic Group	<i>n</i>	<i>M</i>				Total
		Cultural Racism	Individual Racism	Institutional Racism	Campus Racism	
Gender						
Woman	91	31.51***	13.08	8.41	12.93	65.92***
Man	24	21.08***	9.71	7.67	11.88	50.33***
Generational Status						
Continuing-generation student	62	30.32	12.21	9.35	12.87	64.76
First-generation student	56	28.57	12.71	7.55	12.89	61.73
HBCU Affiliation						
Non-HBCU student	98	30.27	12.66	8.70	14.20***	65.84**
HBCU student	24	26.33	11.46	7.33	7.75***	52.88**

Note. Mean differences between demographic subgroups that are statistically significant at adjusted Bonferroni alpha level are denoted by * $p < .01$, ** $p < .005$, *** $p < .0025$

Results from two-tailed independent samples *t*-tests based on gender did not reveal any statistically significant differences between men and women for Individual ($t_{113} = 2.40$), Institutional ($t_{48.56} = 0.61$), and Campus Racism ($t_{28.72} = 0.70$). However, statistically significant differences with large effect sizes were found for Cultural Racism ($t_{28.78} = 5.34$, $p^{***} < .001$, $d = 1.53$) and Total scores ($t_{113} = 3.56$, $p^{***} < .001$, $d = 0.83$). Women reported higher racial stress for both Cultural Racism ($M_{\text{women}} - M_{\text{men}} = 10.42$, $SE = 1.56$) and Total scores ($M_{\text{women}} - M_{\text{men}} = 15.59$, $SE = 4.28$).

There were no statistically significant differences between participants who identified as continuing-generation students and first-generation students across Cultural Racism ($t_{116} = 1.19$), Individual ($t_{116} = -0.44$), Institutional ($t_{116} = 1.56$), Campus Racism ($t_{116} = -0.02$), or Total Scores ($t_{116} = 0.83$).

Participants who were not attending an HBCU reported significantly higher racial stress for Campus Racism ($M_{\text{non-HBCU}} - M_{\text{HBCU}} = 6.45$, $SE = 1.07$, $t_{120} = 6.03$, $p^{***} < .001$, $d = 1.37$) and Total scores ($M_{\text{non-HBCU}} - M_{\text{HBCU}} = 12.96$, $SE = 4.36$, $t_{120} = 2.98$, $p^{**} = .004$, $d = 0.68$) than those who were HBCU students. No significant differences were found based on HBCU affiliation for Cultural ($t_{120} = 2.20$), Individual ($t_{120} = 0.85$), nor Institutional Racism ($t_{30.79} = 0.85$).

RQ2: (a) Is the RSS-BU effective in measuring the racial stress of Black undergraduate students? (b) Does the RSS-BU measure racial stress equivalently across gender, HBCU affiliation, and generational status?

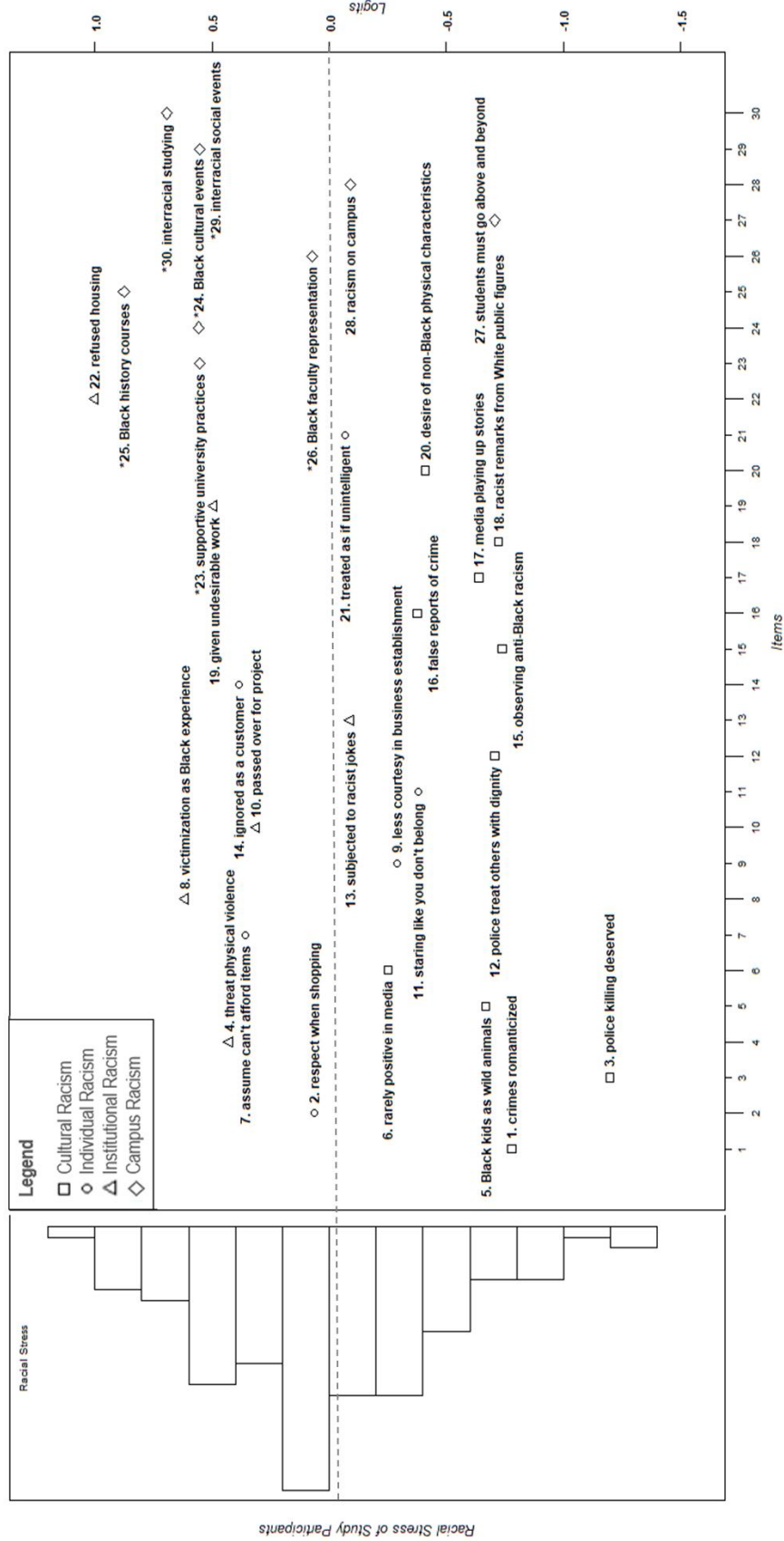
Polytomous Rasch Rating Scale Model (RSM)

Results of the polytomous Rasch RSM had acceptable levels of model reliability (WLE = .90).

Construct Coverage. Polytomous overall item difficulties (δ_i) ranged from -1.20 to 1.00 logits, demonstrating that the RSS-BU was able to discriminate between low and high levels of racial stress respective to the average levels reported by participants. The RSS-BU covered almost the entire continuum of racial stress levels reported by participants in this study, evidenced by person estimates (θ) ranging from -1.39 to 1.12 logits. Figure 4.7 displays a Wright Map with polytomous Rasch RSM item and person estimates for the RSS-BU. The dotted line on this Wright Map represents the average (i.e., logits = 0) for item and person estimates. An item plotted on this line would have a 50/50 chance of being endorsed by a participant with below average (< 0 logits) or above average (> 0 logits) reported levels of racial stress.

Figure 4.7

Wright Map of RSS-BU with Polytomous Overall Item Difficulties (δ_i)



Polytomous item-step difficulties ($\delta_{i,k}$) covered an even larger range of reported levels of racial stress (-1.87 to 1.76 logits). This suggests that the rating scale structure of the RSS-BU was sensitive to the varying levels of distress participants may have felt after experiencing a potentially racially stressful incident.

A Wright Map with polytomous item-step difficulties ($\delta_{i,k}$) is displayed on Figure 4.8. Similar to before, the dotted line on this Wright Map represents the average (i.e., logits = 0) for RSS-BU item-step and person estimates. However, because item-steps correspond to the probability of choosing one adjacent response category over another, higher item-step difficulties ($\delta_{i,k}$) should correspond to higher person abilities (θ). For example, Item-step 1,1 ($\delta_{1,1} = -1.45$ logits) corresponds to the threshold person ability for there to be a 50% chance of a participant endorsing response category 1 (*this event happened, but did not bother me*) over response category 0 (*this never happened to me*) on Cultural Racism item 1. This means that the minimum person ability required to “advance” to this item-step is $\theta = -1.45$ logits.

Figure 4.8

Wright Map of RSS-BU with Polytomous Item-Step Difficulties ($\delta_{i,k}$)

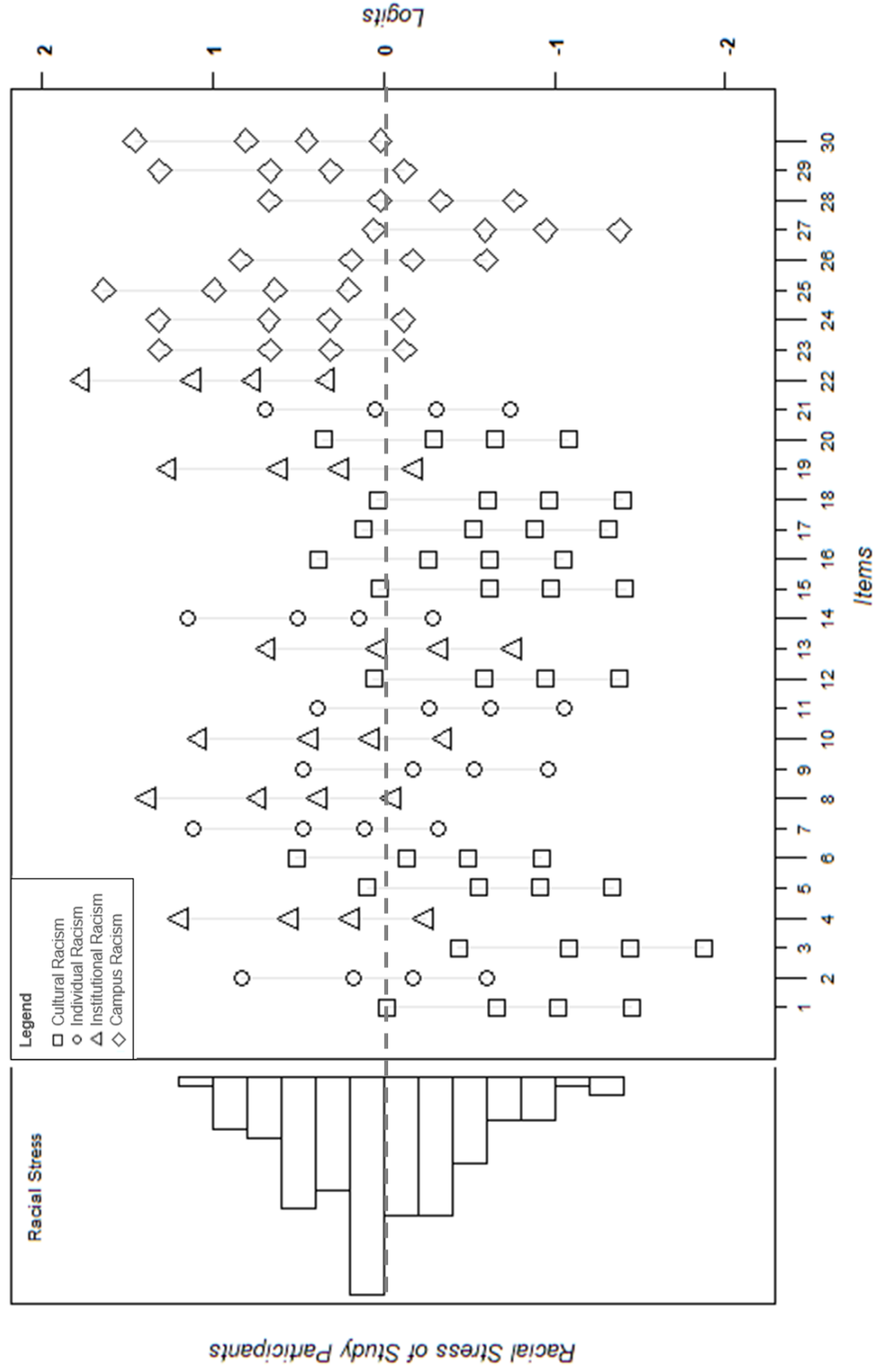


Table 4.4 displays overall item difficulties and item-step difficulties for the full rating scale of the RSS-BU.

Table 4.4

Overall Item Difficulties (δ_i) and Item-Step Difficulties ($\delta_{i,k}$) for RSS-BU

Item	Label	Domain	Overall (δ_i)	Step 1 ($\delta_{i,1}$)	Step 2 ($\delta_{i,2}$)	Step 3 ($\delta_{i,3}$)	Step 4 ($\delta_{i,4}$)
1	crimes romanticized	Cultural	-0.78	-1.45	-1.02	-0.66	-0.02
2	respect when shopping	Individual	0.07	-0.61	-0.18	0.18	0.83
3	police killing deserved	Cultural	-1.20	-1.87	-1.44	-1.08	-0.44
4	threat physical violence	Institutional	0.43	-0.25	0.19	0.54	1.19
5	Black kids as wild animals	Cultural	-0.67	-1.34	-0.91	-0.55	0.09
6	rarely positive in media	Cultural	-0.25	-0.92	-0.49	-0.14	0.51
7	assume can't afford items	Individual	0.36	-0.32	0.12	0.47	1.12
8	victimization as Black experience	Institutional	0.62	-0.06	0.37	0.73	1.38
9	less courtesy in business establishment	Individual	-0.29	-0.96	-0.53	-0.17	0.47
10	passed over for project	Institutional	0.31	-0.36	0.07	0.43	1.07
11	staring like you don't belong	Individual	-0.38	-1.05	-0.62	-0.26	0.38
12	police treat others with dignity	Cultural	-0.71	-1.38	-0.95	-0.59	0.06
13	subjected to racist jokes	Institutional	-0.09	-0.76	-0.33	0.03	0.67
14	ignored as a customer	Individual	0.38	-0.29	0.14	0.50	1.15
15	observing anti-Black racism	Cultural	-0.74	-1.41	-0.98	-0.62	0.02
16	false reports of crime	Cultural	-0.38	-1.05	-0.62	-0.26	0.39
17	media playing up stories	Cultural	-0.64	-1.31	-0.88	-0.52	0.12
18	racist remarks from White public figures	Cultural	-0.72	-1.40	-0.96	-0.61	0.04
19	given undesirable work	Institutional	0.49	-0.18	0.25	0.61	1.25
20	desire of non-Black physical characteristics	Cultural	-0.41	-1.08	-0.65	-0.30	0.35
21	treated as if unintelligent	Individual	-0.07	-0.74	-0.31	0.05	0.69
22	refused housing	Institutional	1.00	0.33	0.76	1.11	1.76
23 ^R	supportive university practices	Campus	0.55	-0.12	0.31	0.67	1.31
24 ^R	Black cultural events	Campus	0.56	-0.12	0.32	0.67	1.32
25 ^R	Black history courses	Campus	0.88	0.20	0.64	0.99	1.64
26	Black faculty representation	Campus	0.07	-0.60	-0.17	0.19	0.84
27	students must go above and beyond	Campus	-0.71	-1.38	-0.95	-0.59	0.06
28	racism on campus	Campus	-0.09	-0.77	-0.33	0.02	0.67
29 ^R	interracial social events	Campus	0.55	-0.12	0.31	0.67	1.31
30 ^R	interracial studying	Campus	0.69	0.02	0.45	0.81	1.45

Note. ^R denotes reverse coded item

Item Fit. Five RSS-BU items demonstrated underfit to the polytomous Rasch RSM expectations, though with varying degrees of misfit relative to previously specified model fit criteria ($0.6 < MNSQ < 1.4$; $|Z| < 2$). For example, Cultural Racism item 16 produced approximately 60% more randomness in participant responses ($MNSQ = 1.63^{***}$) with statistically significant likelihood of underfit to the model ($Z = 4.48$). The four other items underfitting to the polytomous Rasch RSM included: Institutional Racism item 4 ($Z = 3.27$), Institutional Racism item 8 ($MNSQ = 1.52^{***}$, $Z = 3.80$), Institutional Racism item 19 ($MNSQ = 1.44^{**}$, $Z = 3.51$), and Institutional Racism item 22 ($MNSQ = 1.55^*$, $Z = 3.14$).

Seven RSS-BU items produced responses that were significantly more likely to produce overly reliable responses from participants. However, the effect sizes were small enough to meet previously specified unstandardized model fit criteria for rating scales (i.e., $MNSQ > 0.60$). The seven items that demonstrated statistically significant overfit to the model were: Individual Racism item 2 ($Z = -3.03$), Cultural Racism item 6 ($Z = -2.09$), Individual Racism item 9 ($Z = -2.31$), Individual Racism item 11 ($Z = -2.65$), Campus Item 25 ($Z = -2.24$), Campus Racism item 28 ($Z = -2.38$), and Campus Racism item 30 ($Z = -2.06$). A summary of polytomous overall item difficulties and Rasch RSM fit statistics for the RSS-BU is on Table 4.5.

Table 4.5

Overall Item Difficulties (δ_i) and Rating Scale Model Fit Statistics for RSS-BU

Item	Label	Domain	Item Difficulties		Infit Statistics	
			δ_i	SE	MNSQ	Z
1	crimes romanticized	Cultural	-0.78	.09	1.14	0.98
2	respect when shopping	Individual	0.07	.07	0.72	-3.03
3	police killing deserved	Cultural	-1.20	.11	1.37	1.83
4	threat physical violence	Institutional	0.43	.08	1.40*	3.27
5	Black kids as wild animals	Cultural	-0.67	.09	0.88	-0.85
6	rarely positive in media	Cultural	-0.25	.08	0.78	-2.09
7	assume can't afford items	Individual	0.36	.07	1.09	0.86
8	victimization as Black experience	Institutional	0.62	.08	1.52***	3.80
9	less courtesy in business establishment	Individual	-0.29	.08	0.76	-2.31
10	passed over for project	Institutional	0.31	.07	1.15	1.36
11	staring like you don't belong	Individual	-0.38	.08	0.71	-2.65
12	police treat others with dignity	Cultural	-0.71	.09	1.02	0.19
13	subjected to racist jokes	Institutional	-0.09	.07	1.17	1.59
14	ignored as a customer	Individual	0.38	.07	0.92	-0.72
15	observing anti-Black racism	Cultural	-0.74	.09	1.02	0.19
16	false reports of crime	Cultural	-0.38	.08	1.63***	4.48
17	media playing up stories	Cultural	-0.64	.09	0.93	-0.48
18	racist remarks from White public figures	Cultural	-0.72	.09	1.05	0.41
19	given undesirable work	Institutional	0.49	.08	1.44**	3.51
20	desire of non-Black physical characteristics	Cultural	-0.41	.08	1.18	1.46
21	treated as if unintelligent	Individual	-0.07	.07	0.97	-0.23
22	refused housing	Institutional	1.00	.09	1.55*	3.14
23 ^R	supportive university practices	Campus	0.55	.08	0.83	-1.57
24 ^R	Black cultural events	Campus	0.56	.08	0.86	-1.21
25^R	Black history courses	Campus	0.88	.09	0.72	-2.24
26	Black faculty representation	Campus	0.07	.07	1.22	1.97
27	students must go above and beyond	Campus	-0.71	.09	0.85	-1.09
28	racism on campus	Campus	-0.09	.07	0.76	-2.38
29 ^R	interracial social events	Campus	0.55	.08	0.84	-1.46
30^R	interracial studying	Campus	0.69	.08	0.77	-2.06

Note. ^R denotes reverse coded item

Bolded items did not meet all RSM fit criteria

Underfit: $MNSQ > 1.4$ and/or $Z > 2$

Overfit: $MNSQ < 0.6$ and/or $Z < -2$

* $p < .0017$, ** $p < .0008$, *** $p < .0004$

Dichotomous Rasch Many-Facets Model (MFM)

Results of the dichotomous Rasch MFM had acceptable levels of model reliability (WLE = .83).

Differential Item Functioning (DIF). The dichotomous Rasch MFM was used to investigate DIF based on group membership for the RSS-BU. Positive DIF values mean that the focal group (1) was more likely to report a higher level of racial stress related to an item describing a potentially stressful experience with racism. On the other hand, negative DIF values mean the reference group (0) was more likely to endorse higher levels of racial stress respective to that item. DIF was detected for all items except Institutional Racism item 4.

Participants who identified as women were significantly more likely to endorse higher levels of racial stress for Cultural Racism item 3 (DIF = -1.90***), Cultural Racism item 15 (DIF = -1.33***), and Cultural Racism item 18 (DIF = -1.93***). Large, but non-significant negative DIF across gender was also detected for five Cultural Racism items, one Individual Racism item, and one Campus Racism item.

Participants who identified as men were significantly more likely to endorse higher levels of racial stress for Institutional Racism item 8 (DIF = 1.82***), Campus Racism item 23 (DIF = 1.91***), Campus Racism item 24 (DIF = 1.18***), Campus Racism item 25 (DIF = 1.89***), and Campus Racism item 29 (DIF = 1.32***). Non-significant positive DIF was detected on one Cultural Racism item, three Institutional Racism items, and two Campus Racism items.

Continuing-generation students were significantly more likely to endorse higher levels of racial stress on Cultural Racism item 1 (DIF = -1.38**), Cultural Racism item 3 (DIF = -1.94***), and Cultural Racism item 12 (DIF = -1.51***). Non-significant negative

DIF across generational status was detected for three Cultural Racism items, one Individual Racism item, and one Institutional Racism item.

First-generation students were significantly more likely to report higher levels of racial stress on Individual Racism item 9 (DIF = 0.95**). Non-significant positive DIF was detected for two Cultural Racism items, two Individual Racism items, one Institutional Racism item, and five Campus Racism items.

Non-HBCU students were significantly more likely to endorse higher levels of racial stress for Campus Racism item 23 (DIF = -1.26***), Campus Racism item 24 (DIF = -1.59***), and Campus Racism item 26 (DIF = -3.22***). Non-significant negative DIF across HBCU affiliation was detected for one Individual Racism item, one Institutional Racism item, and two Campus Racism items.

Students attending HBCUs were significantly more likely to endorse higher levels of racial stress on Institutional Racism item 19 (DIF = 1.54***). Non-significant positive DIF was detected for three Cultural Racism items, four Individual Racism items, and two Institutional Racism items.

A summary of DIF results by demographic group is on Table 4.6.

Table 4.6*Differential Item Functioning (DIF) of RSS-BU by Demographic Group*

Item	Domain	Gender		Generational Status		HBCU Affiliation	
		0 = Woman 1 = Man		0 = Continuing-generation 1 = First-generation		0 = non-HBCU student 1 = HBCU student	
		DIF	SE _{DIF}	DIF	SE _{DIF}	DIF	SE _{DIF}
1	Cultural	0.55	.20	-1.38**	.20	0.24	.19
2	Individual	-0.56	.16	0.98	.16	-0.14	.16
3	Cultural	-1.90***	.21	-1.94***	.20	0.58	.20
4	Institutional	0.26	.16	-0.28	.16	0.33	.15
5	Cultural	-1.21	.19	-0.91	.19	-0.20	.18
6	Cultural	-0.59	.18	0.01	.17	0.72	.17
7	Individual	0.01	.16	-0.10	.16	1.00	.15
8	Institutional	1.82***	.16	0.12	.16	0.52	.16
9	Individual	-0.23	.17	0.95**	.17	0.80	.17
10	Institutional	0.77	.16	-0.04	.16	0.46	.15
11	Individual	-0.32	.17	-0.58	.17	-0.60	.17
12	Cultural	-1.03	.19	-1.51***	.19	0.39	.18
13	Institutional	-0.06	.16	-0.52	.16	-0.83	.16
14	Individual	0.28	.16	0.70	.16	0.65	.15
15	Cultural	-1.33***	.19	-1.04	.18	-0.14	.18
16	Cultural	-0.44	.17	0.95	.17	0.95	.16
17	Cultural	-0.96	.19	-1.09	.19	-0.35	.19
18	Cultural	-1.93***	.19	0.08	.19	0.27	.18
19	Institutional	0.90	.16	-0.49	.16	1.54***	.15
20	Cultural	-0.81	.18	0.81	.17	-0.03	.17
21	Individual	-0.34	.16	0.04	.16	0.74	.16
22	Institutional	0.55	.17	0.56	.17	0.76	.17
23 ^R	Campus	1.91***	.16	0.64	.16	-1.26***	.16
24 ^R	Campus	1.18***	.16	0.06	.16	-1.59***	.16
25 ^R	Campus	1.89***	.18	0.87	.17	-0.06	.17
26	Campus	0.80	.16	0.53	.16	-3.22***	.16
27	Campus	-1.14	.20	0.29	.19	-0.89	.19
28	Campus	-0.33	.17	0.31	.16	-0.81	.16
29 ^R	Campus	1.32***	.17	1.03	.16	-0.04	.16
30 ^R	Campus	0.97	.94	0.95	.92	0.22	.90

Notes. DIF values > 0.5 logits are **bolded**

Negative DIF values mean that group 0 endorsed higher levels of racial stress.

$p^* < .0017$, $p^{**} < .0008$, $p^{***} < .0004$

Item-Level Rasch Diagnostics

A summary of item-level Rasch diagnostics is on Table 4.7. The table details which of the five following diagnostic issues were present for each item: (a) unstandardized misfit (*MNSQ*) to Rasch RSM; (b) standardized misfit (*Z*) to Rasch RSM; (c) DIF detected for gender; (d) DIF detected for generational status; and (e) DIF detected for HBCU affiliation.

Table 4.7*Item-Level Rasch Diagnostics for RSS-BU*

Item	Domain	Model Fit	Differential Item Functioning (DIF)	Total Issues
1	Cultural		men, continuing-generation**	2
2	Individual	overfit (Z)	women, first-generation	3
3	Cultural		women***, continuing-generation***, HBCU	3
4	Institutional	underfit (Z)		1
5	Cultural		women, continuing-generation	2
6	Cultural	overfit (Z)	women, HBCU	3
7	Individual		HBCU	1
8	Institutional	underfit (MNSQ***, Z)	men***, HBCU	4
9	Individual	overfit (Z)	first-generation**, HBCU	3
10	Institutional		men	1
11	Individual	overfit (Z)	continuing-generation, non-HBCU	3
12	Cultural		women, continuing-generation***	2
13	Institutional		continuing-generation, non-HBCU	2
14	Individual		first-generation, HBCU	2
15	Cultural		women***, continuing-generation	2
16	Cultural	underfit (MNSQ***, Z)	first-generation, HBCU	4
17	Cultural		women, continuing-generation	2
18	Cultural		women***	1
19	Institutional	underfit (MNSQ**, Z)	men, HBCU***	4
20	Cultural		women, first-generation	2
21	Individual		HBCU	1
22	Institutional	underfit (MNSQ*, Z)	men, first-generation, HBCU	5
23 ^R	Campus		men***, first-generation, non-HBCU***	3
24 ^R	Campus		men***, non-HBCU***	2
25 ^R	Campus	overfit (Z)	men***, first-generation	3
26	Campus		men, first-generation, non-HBCU***	3
27	Campus		women, non-HBCU	2
28	Campus	overfit (Z)	non-HBCU	2
29 ^R	Campus		men***, first-generation	2
30 ^R	Campus	overfit (Z)	men, first-generation	3

Note. ^R denotes reverse coded item

Group listed under DIF was more likely to report higher racial stress for this item.

*statistically significant at adjusted Bonferroni alpha level

RQ3: What perspectives do Black undergraduate students have on campus-based racial stress screening?

Descriptives of Likert-Type Items

Overall, participants reported that it is important to ask Black students about racial stress ($M = 4.47, SD = 0.75$), that the RSS-BU asked important questions about racial stress ($M = 3.72, SD = 1.35$), that a survey like the one used in this study would be useful for connecting Black students to supports for racial stress ($M = 4.11, SD = 0.96$), and that they would be willing to complete a measure like the RSS-BU as part of campus-based screening ($M = 4.08, SD = 1.01$). However, participants were somewhat less interested in being connected to supports for their own racial stress ($M = 3.72, SD = 1.35$). A summary of participant responses to Likert-type items of the SVQ are on Table 4.8.

Table 4.8

Descriptives of Participant Responses on SVQ

Item	M	SD	n (%)						
			Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree	Prefer not to say
It is important for campus mental health providers and administrators to ask Black students about racial stress.	4.47	0.75	--	--	2 (1.6%)	13 (10.7%)	32 (26.2%)	74 (60.7%)	1 (0.8%)
I would be interested in being connected to on-campus or off-campus mental health supports to help with racial stress.	3.72	1.35	2 (1.6%)	13 (10.7%)	--	29 (23.8%)	31 (25.4%)	43 (35.2%)	4 (3.3%)
The survey I completed in the previous section asked important questions about racial stress.	4.24	0.86	--	2 (1.6%)	3 (2.5%)	13 (10.7%)	50 (41.0%)	54 (44.3%)	--
A survey like this would be useful for connecting Black students to on-campus or off-campus supports for racial stress.	4.11	0.96	1 (0.8%)	1 (0.8%)	4 (3.3%)	22 (18.0%)	44 (36.1%)	50 (41.0%)	--
I would be willing to fill out a survey like this at my campus health center (on-campus or online).	4.08	1.01	1 (0.8%)	3 (2.5%)	3 (2.5%)	20 (16.4%)	45 (36.9%)	48 (39.3%)	2 (1.6%)

Note. Maximum score on each item = 5. Higher values correspond to stronger agreement with statement.

Thematic Analysis of Open-Ended Responses

Beginning with 360 initial codes generated from the inductive coding process, 73 codes were discarded because they did not contain actual commentary from participants, were unclear, or seemingly irrelevant (e.g., “no further comments”, “No matter the race, we're all family”). After discarding these initial codes, the resulting 287 codes generated from participant responses were organized until the final coding scheme was reached. Five thematic domains, each comprised of its own set of themes and sub-themes, emerged during the six-step thematic analysis process:

1. Racial Stress in Higher Education
2. Campus Support Services
3. Perspectives on Screening
4. Procedural Considerations for Screening
5. Feedback on Study

Thematic Domain 1: Racial Stress in Higher Education. The first thematic domain, Racial Stress in Higher Education, refers to the experiences that Black undergraduate students have while navigating racism in higher education. Four themes emerged as part of this thematic domain. The first theme, *School is Already Stressful Enough*, consisted of 22 codes and refers to the combination of racial stressors and academic demands. The second theme, *Feeling Neglected*, emerged from 35 codes and refers to Black students feeling that their problems are often ignored, overlooked, or misunderstood. The third theme, *Visibility and Representation*, was made up of 24 codes and refers to the sense of belonging that comes from having other Black students and staff on campus. The fourth

theme, *Calls to Action*, consisted of 11 codes and refers to colleges and universities being called upon to address racial stress among their Black students. A coding scheme with themes and participant excerpts for the Racial Stress in Higher Education thematic domain is on Table 4.9.

Table 4.9

Coding Scheme for Thematic Domain 1: Coping with Racial Stress in Higher Education

Theme	Excerpts
School is Already Stressful Enough (22 codes)	<i>"I feel as though African American students put a lot of stress on ourselves we have to go above and beyond to feel like we belong and that we are smart"</i> <i>"as a black student I feel like I always have to work ten times harder than other students"</i> <i>"Black people already have to deal with generational trauma"</i>
Feeling Neglected (35 codes)	<i>"Black students' mental health is constantly glossed over"</i> <i>"There are many instances of racism here and it gets swept under the rug"</i> <i>"it feels like we're almost just expected to deal with it and adapt to it"</i>
Visibility and Representation (24 codes)	<i>"completely different environment where I feel isolated because of the way I look"</i> <i>"having people that look like you that work at your school is very helpful"</i>
Calls to Action (11 codes)	<i>"all of these things were only made possible after years of protesting"</i> <i>"we are constantly fighting with the university to provide more [supports]"</i>

Thematic Domain 2: Campus Support Services. The second thematic domain, Campus Support Services, refers to the experiences that Black undergraduate students have had while navigating campus support services. Two themes emerged as part of this domain: *Campus Mental Health Services*, which consisted of 24 codes, refers to experiences with navigating campus mental health services; and *Other Campus Support Services*, which emerged from 4 codes, refers to experiences with navigating other campus support services.

Campus Mental Health Services. Three sub-themes emerged for students' experiences with Campus Mental Health Services: *Helpful*, *Needs improvement*, and *Limited exposure or no opinion*.

Other Campus Support Services. Two sub-themes emerged for students' experiences with Other campus support services: *Helpful*, and *Needs improvement*.

A coding scheme with themes, sub-themes, and participant excerpts for the Campus Support Services thematic domain is on Table 4.10.

Table 4.10

Coding Scheme for Thematic Domain 2: Campus Support Services

Theme	Sub-Theme	Excerpts
Campus Mental Health Services (24 codes)	Helpful	<p><i>"social discrimination doesn't really happen here if they do guidance counselor's always listens"</i></p> <p><i>"The school does a great job highlighting the importance of their students' health whether that's physical or mental"</i></p>
	Needs improvement	<p><i>"Recently it has reached maximum capacity and started referring students to off-campus providers"</i></p> <p><i>"I feel like it's practically non-existent"</i></p> <p><i>"Mental health on campus is kinda a joke"</i></p>
	Limited exposure or no opinion	<p><i>"don't have too much exposure which could be a gap or more so on the individual level"</i></p> <p><i>"I do not have much of an opinion on this as I have not sought mental health services on my campus before"</i></p>
Other Campus Support Services (4 codes)	Helpful	<p><i>"[my school] surprisingly does a wonderful job since we have a whole 'house' dedicated for black people meetings, events, etc."</i></p> <p><i>"The faculty are very helpful and caring"</i></p>
	Needs improvement	<p><i>"I know there are black organizations that have resources but they feel underground"</i></p> <p><i>"university does not take the Black Studies department seriously"</i></p>

Thematic Domain 3: Perspectives on Screening. The third thematic domain refers to Black undergraduate students' perspectives on implementing racial stress screening. This domain consisted of three themes: *Overall Support for Screening*, *Mixed Support for Screening*, and *Limited Knowledge of Screening*.

Overall Support for Screening. Two sub-themes emerged from the 58 codes in this theme. The first sub-theme, *Help Black students feel seen*, refers to how racial stress screening can be helpful for giving voice to Black undergraduate students. The second sub-theme, *Screening should be widely available*, refers to how racial stress screening should be implemented across college and university campuses.

Mixed Support for Screening. Four sub-themes emerged from the 17 codes in this theme. The first sub-theme, *Insufficient*, refers to how racial stress screening may not be enough to support Black student. The second sub-theme, *Unnecessary*, refers to how racial stress screening may not be necessary for providing supports to Black students. The third sub-theme, *Skepticism about feasibility*, refers to doubts that screening could ever be implemented. The fourth sub-theme, *General comments*, refers to comments that reflect neither outright support nor opposition to screening.

Limited Knowledge of Screening. This theme consisted of 4 codes generated from participant responses and refers to a lack of prior knowledge about screening.

A coding scheme with themes, sub-themes, and participant excerpts for the Perspectives on Screening thematic domain is on Table 4.11.

Table 4.11

Coding Scheme for Thematic Domain 3: Perspectives on Racial Stress Screening

Theme	Sub-Theme	Excerpts
Overall Support for Screening (58 codes)	Help Black students feel seen	<p><i>"It would allow students to have a support system on campus that they needed"</i></p> <p><i>"I think it's important in order to gauge the on campus environment and acknowledge the struggle that black students face"</i></p> <p><i>"I think that would be a good way to help Black students feel more seen"</i></p>
	Screening should be widely available	<p><i>"i feel as though it's important for black students to be screened for racial stress especially if they go to a PWI"</i></p> <p><i>"I think that it should be more widely spread across campuses around the country"</i></p> <p><i>"I believe screening black students for racial stress is a very progressive and important strategy to practice"</i></p>
Mixed Support for Screening (17 codes)	Skepticism about feasibility	<p><i>" I just don't think it will ever happen"</i></p> <p><i>"It's a nice gesture, but fueled by passionate students; the university itself does not care"</i></p>
	Insufficient	<p><i>"Screening isn't the issue, it's what they do or don't do with the results"</i></p> <p><i>"I think this is a good idea but there needs to be a system in place to help these Black students after they are screened"</i></p>
	Unnecessary	<p><i>"I attend an HBCU where students very rarely face racial discrimination. So I don't see a need in mental health practitioners doing a screening here."</i></p> <p><i>"mental health practitioners don't necessarily need to screen for racial stress"</i></p>
	General comments	<p><i>"I think it could potentially help"</i></p> <p><i>"I think it is important if it is used in the right way"</i></p>
Limited Knowledge of Screening (4 codes)	--	<p><i>"Not a lot of people screen for racial stress and if they do, it's not common because I've never heard of it"</i></p> <p><i>"I did not realize that screening for racial stress may be something that I would benefit from"</i></p>

Thematic Domain 4: Procedural Considerations for Screening. The fourth thematic domain refers to Black undergraduate students' recommendations and considerations for racial stress screening. Two themes emerged: *Screening Administration*, which consisted of 23 codes; and *Screening Evaluation and Follow-Up*, which was made up of 21 codes.

Screening Administration. Four sub-themes emerged from the Screening Administration theme: *Timely*, which refers to how often and when screenings should be administered; *Avoid "othering,"* which refers to how screening administration should not make Black students feel singled out; *Black representation*, which refers to how Black providers and staff should be involved in screening administration; and *Optional*, which refers to how screening should not be mandated for students.

Screening Evaluation and Follow-Up. Two sub-themes emerged the Screening Evaluation and Follow-Up theme: *Careful interpretation*, which refers to how screening results should be interpreted carefully; and *Intervention and support recommendations*, which refers to the types of supports that should be made available for Black students.

A coding scheme with themes, sub-themes, and participant excerpts for the Procedural Considerations for Screening thematic domain is on Table 4.12.

Table 4.12

Coding Scheme for Thematic Domain 4: Procedural Considerations for Screening

Theme	Sub-Theme	Excerpts
<p>Screening Administration (23 codes)</p>	Timely	<p><i>"I think it would be something that is very helpful now, but especially during freshman year"</i></p> <p><i>"important to screen students now before it is harder to access these services"</i></p> <p><i>"there was a case where a campus police officer used excessive force on a black student, and that caused an uproar. Screening after that would be important and different"</i></p>
	Avoid "othering"	<p><i>"If the administrator is nonblack I would just feel singled-out"</i></p> <p><i>"I think the best way to do this is by email or in the student health portal to reduce feelings of being singled out"</i></p>
	Black representation	<p><i>"Allowing more black people to join high-representative spaces is the most beneficial way to achieving the most accurate results regarding racial stress"</i></p> <p><i>"I believe it would be more impactful coming from more black educators, practitioners, supporters, etc."</i></p>
	Optional	<p><i>"It doesn't need to be a requirement, but an option for Black students who want it"</i></p> <p><i>"I believe that campus mental health practitioners and administrators should screen Black students for racial stress if the Black student wants to"</i></p>
<p>Screening Evaluation and Follow-Up (21 codes)</p>	Careful interpretation	<p><i>"Is there a threshold that makes an individual 'different' or more concerning than others?"</i></p> <p><i>"What do WE do with that information, how does it help us on a larger level?"</i></p>
	Intervention and support recommendations	<p><i>"Being able to communicate and relate to other black students would definitely help with stress management and be an outlet for black students"</i></p> <p><i>"I suggest mental health days, awareness events, and fun activities for stress relief and mental health awareness"</i></p> <p><i>"it would be better if these screenings resulted in actually working to change what caused the stress instead of just working with the individual student"</i></p>

Thematic Domain 5: Feedback on Study. The final thematic domain refers to Black undergraduate students' feedback on the RSS-BU and the overall study. This domain consists of four themes: *Problems with Response Options*, *Recommendations*, *Reflections*, and *Gratitude*.

Problems with Response Options. The Problems with Response Options theme consisted of 9 codes and refers to issues that participants had with responding to the RSS-BU. Two sub-themes emerged: *Separating direct and vicarious experiences*, meaning that participants felt it would be easier to provide separate responses for direct and vicarious racial stressors; and *Adjusting responses to reflect truth*, meaning that participants responded in ways that were inaccurate due to the options available.

Recommendations. Four sub-themes emerged from the 16 codes in the Recommendations theme: *Questions about other scenarios*, meaning that more racial stressors should be included in RSS-BU; *Questions about consequences of racial stress*, which refers to how the RSS-BU should be more specific about in asking about how racial stressors affect Black students; *Questions about Black identity*, meaning that the RSS-BU should ask about Black identity in relation to racial stress; and *Other recommendations*, which includes any other suggestions made by participants that did not align with other sub-themes.

Reflections. The Reflections theme consisted of 11 codes and two emergent sub-themes: *Positive reflections* from participants on the study; and *Negative reflections* from participants on the study.

Gratitude. The Gratitude theme was comprised of 8 codes and refers to participants thanking the researcher for conducting the study.

The coding scheme with themes, sub-themes, and participant excerpts for the Feedback on Study thematic domain is on Table 4.13.

Table 4.13

Coding Scheme for Thematic Domain 5: Feedback on Study

Theme	Sub-Theme	Excerpts
Problems with Response Options (9 codes)	Separating direct and vicarious experiences	<p>"I think there should be more answer options like 'This hasn't happened to me but it has happened to someone I know'"</p> <p>"These seemed like double-barreled questions - in some of them, the situation never happened to me but it happened to someone I know or vice versa"</p>
	Adjusting responses to reflect truth	<p>"the answer choices were limited and didn't reflect what I wanted to answer"</p> <p>"made it feel like I either had to give a higher score as an answer because I want to acknowledge that question [...], but it is not exactly how I feel about that particular question"</p> <p>"It was unclear if I was answering about events in my lifetime, during school, or the past month, so it would be good to define a time range"</p> <p>"I feel like there are some more subtle forms of racism which need to be recognized [in survey]"</p>
Recommendations (16 codes)	Questions about other scenarios	<p>"think it could include more questions/scenarios (ie. how often are you conscious of your race? how often do you think about how your race may affect how others perceive you?)"</p>
	Questions about consequences of racial stress	<p>"suggest asking about how these experiences have affected our sense of safety on campus"</p> <p>"it may be helpful to also ask about how much or in what ways these events have affected you besides being temporarily or permanently upset (it's unclear what 'upset' extends to)"</p>
	Questions about Black identity	<p>"there should be questions relating to black identity and [...] feeling 'black enough' as a possible stressor for students"</p> <p>"how often do you think about how your race may affect how others perceive you?"</p>
	Other recommendations	<p>"Provide more disclosure/warning about the types of questions asked that can be particularly upsetting, i.e. police brutality"</p> <p>"maybe more questions or comments about how this information can help people that agree with some questions would be helpful"</p> <p>"This survey made me feel seen and my experiences were validated"</p>
	Positive	<p>"This is a great survey I enjoy answering all the questions with complete honesty"</p> <p>"Good survey, practical questions"</p> <p>"This survey was emotionally difficult"</p>
Reflections (11 codes)	Negative	<p>"I don't think this was a good survey format"</p> <p>"Some of the language was pointed in this survey"</p> <p>"I think that what you're doing is great!"</p>
	--	<p>"Hopefully there will be more and more such investigations"</p> <p>"Thank you for allowing me this opportunity to complete this"</p>

Chapter 5

DISCUSSION

The purpose of this mixed-methodological study was to pilot campus-based racial stress screening with the ultimate goal of identifying Black undergraduate students in need of supports for racial stress and connecting them to appropriate services. The current study was driven by three objectives within a pragmatic interpretive framework. The first objective was to investigate what levels of racial stress were reported by participants who completed the researcher-adapted rating scale used in this study, the Racial Stress Survey for Black Undergraduates (RSS-BU), and if racial stress levels differed across gender, HBCU affiliation, and generational status. The second objective was to use Rasch analysis to examine the measurement utility of the RSS-BU and whether this rating scale functioned equivalently across the demographic groups. The third objective was to use thematic analysis to gather perspectives from Black undergraduate students on campus-based racial stress screening and the adapted measure proposed for use.

Main Findings

RQ1: (a) What scores did Black undergraduate student participants receive after completing the RSS-BU? (b) Did scores differ across gender, HBCU affiliation, and generational status?

Mean Participant Scores. Overall, the $N = 122$ participants in this study reported experiencing at least some level of racial stress. RSS-BU Total and Campus Racism domain scores were clustered around the mean and normally distributed across the sample population. This was expected given how common it is for Black undergraduate students to experience racial stressors while navigating their college and university campuses (M.

Anderson, 2019). Individual Racism domain scores were most varied across participants, possibly because an individual's personal and environmental characteristics may determine their experiences with and observations of racism in the interpersonal context (Jones, 1972; Sameroff, 1975). Relatively higher participant scores in the Cultural Racism domain may be due to how engrained anti-Black sentiment is within the U.S. culture and how that finds its way onto campuses, whether through stereotypes or media sources (Jones, 1972). On the other hand, the subtler nature of Institutional Racism may explain the relatively lower levels of racial stress reported by participants in this domain because of how deeply embedded racism may already be within the policies and practices of their colleges and universities (Jones, 1972).

Mean Participant Scores by Demographic Group. Results from independent samples *t*-tests revealed significantly higher Total and Cultural Racism domain scores for women in this study, which may be due to the cumulative effects of both racism and sexism (Busby et al., 2021). Participants who were attending an HBCU had significantly lower Total and Campus Racism domain scores than participants who were not affiliated with an HBCU. Enrollment at an HBCU may be a protective factor for Black undergraduate students against discrimination and a racially hostile campus climate, which may be more common at PWIs (Cadaret & Speight, 2018). It was expected that first-generation students would report significantly higher racial stress than continuing-generation students due to the various challenges associated with not having guidance from a parent who attained at least a bachelor's degree (Busby et al., 2021; Fry, 2021). However, in this study, generational status did not appear to have a significant influence on participant scores.

RQ2: (a) Is the RSS-BU effective in measuring the racial stress of Black undergraduate students? (b) Does the RSS-BU measure racial stress equivalently across gender, HBCU affiliation, and generational status?

Construct Coverage. The Rasch RSM was used to investigate how effective the RSS-BU was in measuring the construct of racial stress with the Black undergraduate students who participated in the current study. Results demonstrated that the RSS-BU measured the low to high levels of racial stress reported by participants. Additionally, the Likert-type format of the RSS-BU was sensitive to the varying levels of racial stress reported by participants. This suggests that the RSS-BU may be useful for measuring racial stress among Black undergraduate students.

Item Fit. Evidence of significant underfit was found for five RSS-BU items, though there is ambiguity as to why these items produced more variation in participant responses than expected by the Rasch RSM. Some common reasons for underfit include respondents guessing on the item, confusing or negative wording on an item, a lack of measurement invariance, or more than one construct being measured by an item (Bond & Fox, 2015). For instance, the Cultural Racism item 16 (“You have heard reports of White people/non-Blacks who have committed crimes, and in an effort to cover up their deeds falsely reported that a Black man was responsible for the crime”) includes very specific information that may have been confusing for a participant to respond to if their experience with an incident like this slightly differed (e.g., verified vs. “heard” report, Black woman vs. Black man framed for crime).

The Institutional Racism item 4 (“You have been threatened with physical violence by an individual or group of White/non-Blacks”) and the Institutional Racism item 8 (“You

were the victim of a crime and the police treated you as if you should just accept it as part of being Black”) may have underfit the model because they describe racist incidents that happen less frequently, but when they do occur, may be especially stressful to deal with. The Institutional Racism item 19 (“You have been given more work, or the most undesirable jobs at your place of employment while the White/non-Black of equal or less seniority and credentials is given less work, and more desirable tasks”) may have produced more variation in responses because a participant may have found the racist incident described as difficult to prove to be true, despite what their subjective experience may have been when the event occurred (Harrell, 2000). Finally, the Institutional Racism item 22 (“You were refused an apartment or other housing; you suspect it was because you are Black”) may have underfit to the model because it describes an incident that may happen less frequently since most colleges and universities offer on-campus housing for their students.

Although effect sizes were small enough to meet unstandardized fit criteria, evidence from standardized fit statistics suggests that seven RSS-BU items had statistically significant likelihood of overfit to the Rasch RSM. Evidence of overfit suggests that these items may be providing redundant information or making the RSS-BU appear more reliable than it really is. For example, the Individual Racism item 2 (“Salespeople/clerks did not say thank you or show other forms of courtesy and respect [i.e. put your things in a bag] when you shopped at some White/non-Black owned businesses”), the Individual Racism item 9 (“You were treated with less respect and courtesy than Whites and other non-Blacks while in a store, restaurant, or other business establishment”), and the Individual Racism item 11 (“Whites/non-Blacks have stared at you as if you didn't belong in the same place with them; whether it was a restaurant, theater, or other place of business”) all describe racist incidents that are fairly

similar to each other. For the other four items that follow, the potential reasons for why they overfit to the model are not as obvious:

- Cultural Racism item 6 (“You seldom hear or read anything positive about Black people on radio, T.V., newspapers or in history books”)
- Campus Racism item 25 (“There are courses available to me that focus on African American culture and history”)
- Campus Racism item 28 (“People on campus use racial slurs and commit racist acts against African American students [refusing service, saying the N-word, etc.]”)
- Campus Racism item 30 (“Students from different races and ethnicities study together”)

It should be noted that overfitting items are not as problematic for measurement as underfitting items. So, although further investigation may be warranted for item with evidence of overfit, underfitting items should be prioritized instead to improve measurement utility (Bond & Fox, 2015).

Differential Item Functioning (DIF). DIF was detected across all RSS-BU items except Institutional Racism item 4, but the statistical significance of DIF varied across items. Evidence of DIF suggests that an item does not equivalently measure the construct of racial stress across the specified demographic groups.

Gender. Women who participated in this study were significantly more likely to endorse higher levels of racial stress for Cultural Racism item 3 (“You notice that when Black people are killed by the police the media informs the public of the Victim’s criminal record or negative information in their background, suggesting they got what they

deserved”), Cultural Racism item 15 (“You have observed situations where other Blacks were treated harshly or unfairly by Whites/non-Blacks due to their race”), and Cultural Racism item 18 (“You have heard racist remarks or comments about Black people spoken with impunity by White public officials or other influential White people”). These DIF results are consistent with earlier results from independent samples *t*-tests, in which women reported significantly higher levels of racial stress in the Cultural Racism domain.

Men who participated in this study were significantly more likely to endorse higher levels of racial stress for Institutional Racism item 8 (“You were the victim of a crime and the police treated you as if you should just accept it as part of being Black”), which may be due to the higher likelihood that Black men have negative interactions with the police (M. Anderson, 2019). Men were also significantly more likely to endorse higher levels of racial stress for Campus Racism item 23 (“The university has practices in place that support African American students”), Campus Racism item 24 (“The university hosts events that promote and celebrate African American culture”), Campus Racism item 25 (“There are courses available to me that focus on African American culture and history”), and Campus Racism item 29 (“Students from different races and ethnicities attend social events together”). Although men did not have significantly higher Campus Racism domain scores based on results from independent samples *t*-tests, results from DIF analyses suggest that men may either struggle more with, or be more conscious of, a lack of available campus supports for Black students.

Generational Status. Continuing-generation students were significantly more likely to endorse higher levels of racial stress on Cultural Racism item 1 (“You notice that crimes committed by White people tend to be romanticized, whereas the same crime committed by a

Black person is portrayed as savagery, and the Black person who committed it, as an animal”), Cultural Racism item 3 (“You notice that when Black people are killed by the police the media informs the public of the victim’s criminal record or negative information in their background, suggesting they got what they deserved”), and Cultural Racism item 12 (“You have observed the police treat White/non-Blacks with more respect and dignity than they do Blacks”). The researcher wonders if continuing-generation students reported higher racial stress for these items due to the possibility that they may have more cultural awareness of injustices by law enforcement that have been committed against Black people.

First-generation students were significantly more likely to report higher levels of racial stress on Individual Racism item 9 (“You were treated with less respect and courtesy than Whites and other non-Blacks while in a store, restaurant, or other business establishment”). It is possible that first-generation students may experience more stress when treated with less respect in business establishments due to the perception that they may be of lower SES than continuing-generation students (Fry, 2021).

HBCU Affiliation. Non-HBCU students were significantly more likely to endorse higher levels of racial stress for Campus Racism item 23 (“The university has practices in place that support African American students”), Campus Racism item 24 (“The university hosts events that promote and celebrate African American culture”), and Campus Racism item 26 (“African Americans are represented in high-ranking positions [faculty, staff, administration]”). These results suggest that HBCUs can serve as a protective factor against campus-based racial stressors that may be more prevalent at PWIs (Bernard et al., 2020).

Students attending HBCUs were significantly more likely to endorse higher levels of racial stress on Institutional Racism item 19 (“You have been given more work, or the most

undesirable jobs at your place of employment while the White/non-Black of equal or less seniority and credentials is given less work, and more desirable tasks”). Despite the protective nature of the campus environment, Black students attending HBCUs may still not be immune to the long-reaching impacts of institutional forms of racism.

RQ3: What perspectives do Black undergraduate students have on campus-based racial stress screening?

Descriptives of Likert-Type Items. Results from the SVQ revealed that, overall, the Black undergraduate students in this study supported the idea of racial stress screening, thought the RSS-BU would be useful for screening purposes, and would be willing to participate in campus-based screening, but do not necessarily want to be connected to mental health supports. Black undergraduate students may feel obstructed from utilizing mental health services due to cultural mistrust (Burkett, 2017). Although this SVQ item asked specifically about mental health supports, it would also be critical to provide supports for physical, functional, social, and spiritual aspects of well-being (Harrell, 2000). Because racial stress can impact several aspects of well-being, it is possible that participants may be more interested in a wider variety of services rather than just mental health care.

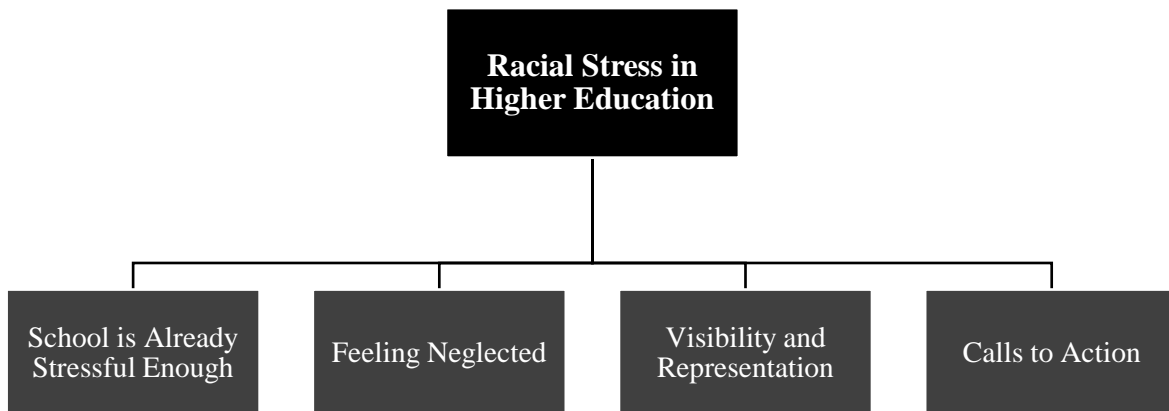
Thematic Analysis of Open-Ended Responses. The five thematic domains that emerged from thematic analysis demonstrate that: (a) it is difficult for Black undergraduate students to manage racial stress while navigating higher education; (b) campus support services vary in quality of care for Black students; (c) participants generally support the idea of racial stress screening, though with some reservations; (d) intentional screening administration and follow-up is essential for implementation; and (e) the current study was important to carry out but has several areas for improvement.

Thematic Domain 1: Racial Stress in Higher Education. The four themes that emerged as part of the first thematic domain (see Figure 5.1) highlight (a) how Black undergraduate students cope with the cumulative effects of racial and academic stressors; (b) how Black students often feel neglected by their educational institution; (c) how important Black visibility and representation are in order to feel like one belongs on campus; and (d) the need for colleges and universities to address racial stress among their Black students.

Screening may be helpful for identifying the different sources of racial stress that impact the well-being and academic achievement of Black students. But it is up to the colleges and universities to ensure that Black students feel cared for and represented in their campus communities.

Figure 5.1

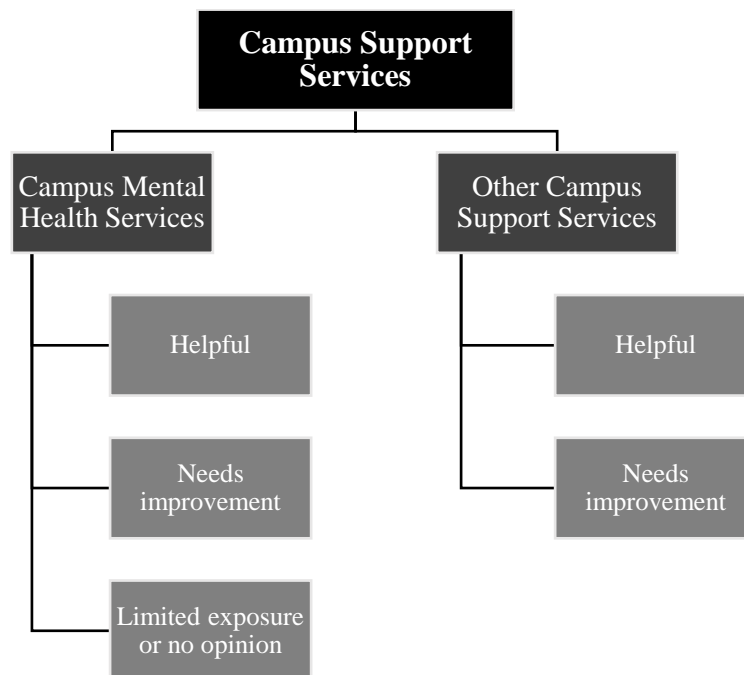
Hierarchical Chart of Thematic Domain 1: Racial Stress in Higher Education



Thematic Domain 2: Campus Support Services. Two themes emerged from the second thematic domain (see Figure 5.2). The first theme consisted of three sub-themes that demonstrated how (a) some students have found campus mental health services to be helpful, (b) some felt that these services needed improvement, and (c) some did not have enough experience with mental health services to provide an opinion. Similarly, the second theme consisted of two sub-themes suggesting that (a) some students have found other campus support services to be helpful, (b) while other students felt that these other support services need improvement. Although campus support services have the potential to be helpful, it is necessary that mental health and other support services are high-quality and accessible enough for Black students to actually use them.

Figure 5.2

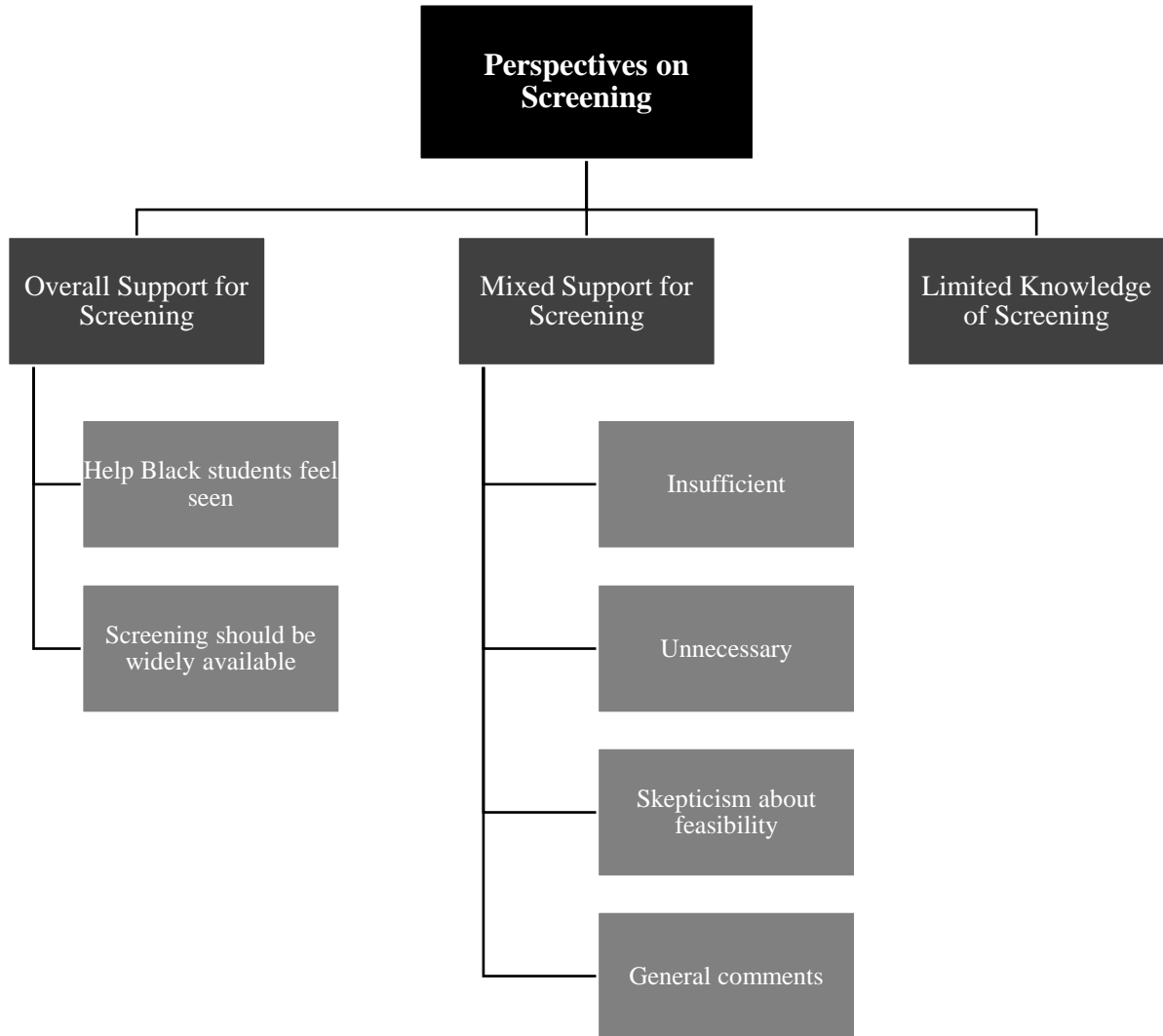
Hierarchical Chart of Thematic Domain 2: Campus Support Services



Thematic Domain 3: Perspectives on Screening. Three themes emerged from the third thematic domain (see Figure 5.3). The first theme suggests that participants who support screening think (a) it should be widely implemented and (b) it helps Black students feel seen. The second theme reflects reservations about screening due to the possibilities that it is (a) not enough, (b) not necessary, (c) may never implemented, or (d) other general mixed feelings about the idea. The third theme refers to knowledge of screening that is too limited to provide an opinion on implementation. Although participants did not outright report that they would oppose campus-based racial stress screening, these resulting themes demonstrate that buy-in from Black students is critical for successful implementation.

Figure 5.3

Hierarchical Chart of Thematic Domain 3: Perspectives on Screening

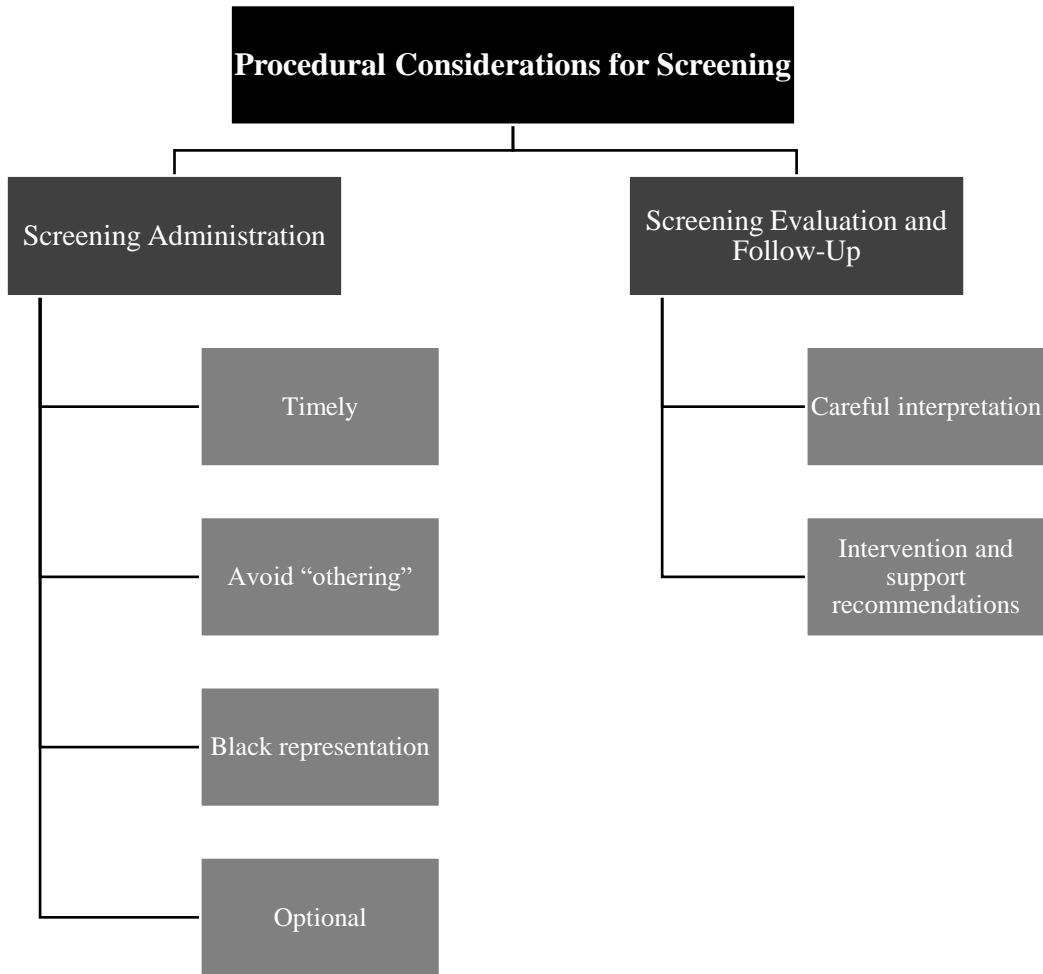


Thematic Domain 4: Procedural Considerations for Screening. Two themes emerged from the fourth thematic domain (see Figure 5.4). The first theme consisted of four broad categories of procedural considerations for administration: (a) the timing and frequency of screenings; (b) the importance of not singling out Black students; (c) the need for Black representation in the process; and (d) that Black students should be able to choose whether or not they would like to participate in screening. The second theme consisted of two broad categories of procedural considerations for evaluation and follow-up: (a) the importance of carefully interpreting results from screening and (b) the importance of ensuring that a wide variety of supports are available for Black students.

It is essential that screening is carried out with respect for the privacy and agency of Black undergraduate students, as well as with consultation from Black practitioners and staff. Screenings could be administered during multiple points in the academic year either in response to racist incidents or as a preventative measure. Then, practitioners and staff should carefully interpret the results to inform the continuum of supports that should be offered to students.

Figure 5.4

Hierarchical Chart of Thematic Domain 4: Procedural Considerations for Screening

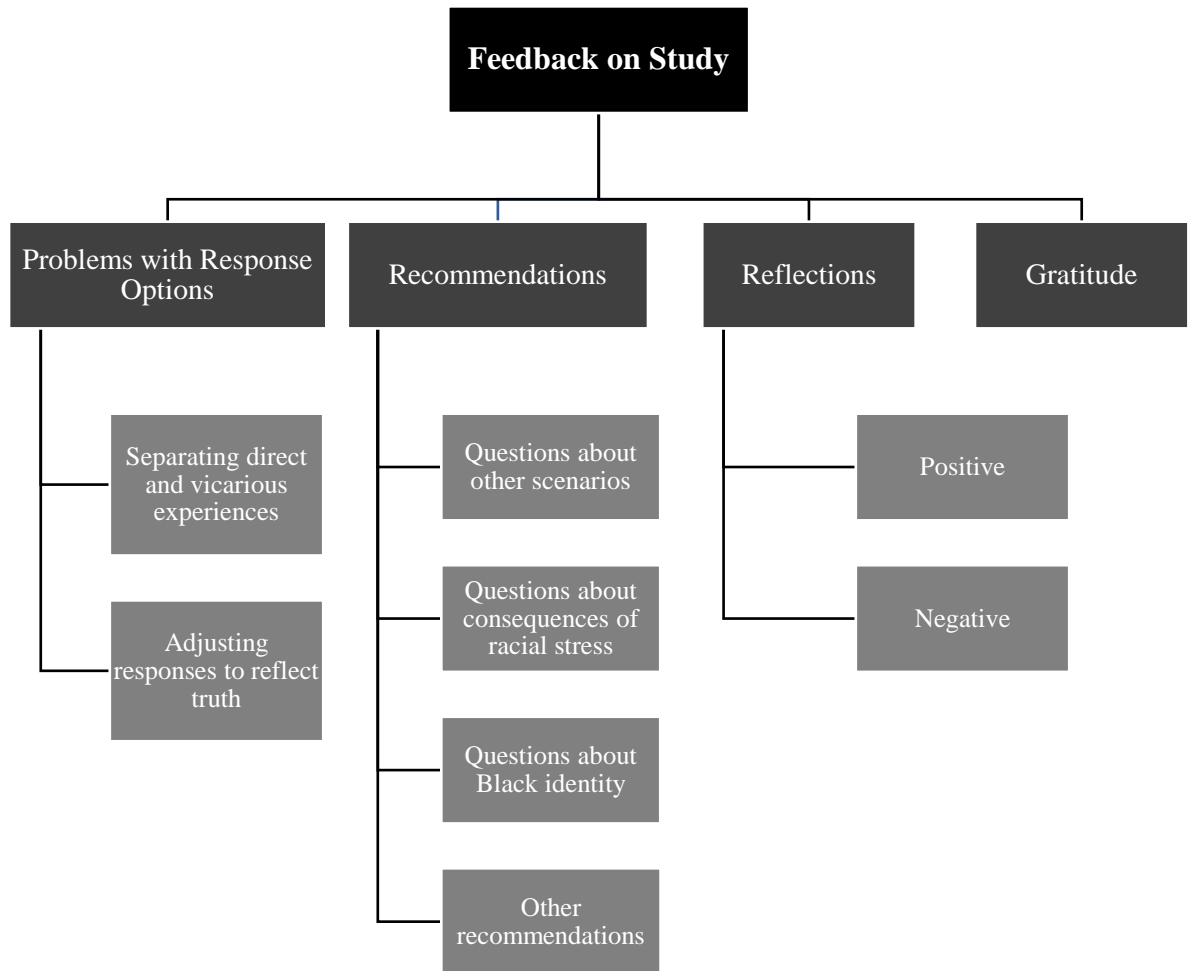


Thematic Domain 5: Feedback on Study. Four themes emerged from the fifth thematic domain (see Figure 5.5). The first theme consisted of two issues that participants had with responding to the RSS-BU: (a) items that asked about both direct and vicarious racial stressors and (b) choosing response categories that did not reflect their actual experience. The second theme consisted of four categories of recommendations for revising the RSS-BU: (a) questions about other racially stressful scenarios, (b) questions about how racial stressors impacted the respondent, (c) questions about the respondent's Black identity, and (d) other suggestions for revision. The third theme consisted of (a) positive reflections and (b) negative reflections after participating in the current study. The fourth theme emerged from participants thanking the researcher for carrying out the current study.

These results demonstrate that the RSS-BU may not have accurately captured the full range of racial stress experienced by participants, especially since participants felt they could not provide accurate and truthful responses. Participants of the current study offered helpful recommendations for revising the RSS-BU, particularly the types of questions that should be included and the structuring of the response categories. Participants were generally happy to have been involved in the study and even expressed how important they thought it was to have further research on the topic of racial stress. But some participants felt that the RSS-BU was poorly constructed or, even more worrisome, caused them distress when responding to items on the screener.

Figure 5.5

Hierarchical Chart of Thematic Domain 5: Feedback on Study



Implications

Screening to Inform Culturally Responsive Campus Practices

The current study demonstrated how campus-based screening could be implemented in an online format with the goal of aiding practitioners to gain a more comprehensive understanding of the racial stressors that impact the Black student populations that they serve. The valuable insights provided by participants in this study will be helpful for colleges or universities who may consider implementing campus-based racial stress screening. Given how the majority of participants reported their support and willingness to participate in screening, it is likely that other Black undergraduate students across college and university campuses would also feel similarly. However, it is critical that screening is implemented in a manner that promotes continued buy-in from Black undergraduate students by minimizing potential harm and maximizing the benefits of screening (American Psychological Association, 2017, Principle A).

The ultimate goal of screening is to use the information gathered to provide direct mental health services, campus-wide interventions and programming, and connect students to off-campus supports for coping with racial stress. Similar to mental health screenings that have been implemented in K-12 schools, racial stress screening can serve as the first step for a multi-tiered system of support (MTSS) in which prevention, early identification, and intervention are essential parts of campus mental health programming (Siceloff et al., 2017). The MTSS framework typically consists of three levels (i.e., tiers) of support: (a) universal supports that are available to all students; (b) targeted interventions for students who need additional supports; and (c) intensive, individualized interventions for students who require the highest level of support. The continuum of services provided should also be appropriate

for the varying forms of racial stress that Black undergraduate students may experience (Harrell, 2000; Jones, 1972). For example, the participants in the current study reported higher racial stress in the cultural racism domain, so interventions targeting this form of racism may be a priority.

Tier 1: Universal. Campus-wide practices may focus on creating a stronger sense of belonging for Black students. Diversity and inclusion initiatives may include hiring and retaining Black faculty and staff to increase representation of Black voices on campus (Ezell, 2021). Colleges and universities may also want to increase available course offerings and allocate additional funding towards departments of Black studies and related academic areas. A more welcoming and inclusive environment can be achieved by hosting Black cultural events, sponsoring Black student activities and organizations, and creating infrastructure for Black student development and support centers (Duran et al., 2020). Colleges and universities may also consider revamping their current policies for harassment, discrimination, and student codes of conduct to include language that outlines the consequences of how engaging in racist actions (Hussain & Jones, 2021). Additionally, there should be a clear route for Black students to report hate crimes or other incidents of bias, discrimination, harassment, as well as explicit guidelines for how administration will resolve such incidents.

Tier 2: Targeted. At the second level of intervention, colleges and universities can develop programming, workshops, and other targeted services for Black students. Psychoeducation groups can be implemented to help Black students practice adaptive coping strategies for dealing with racial stressors (Barnes & Lightsey, 2005). Support spaces can be offered for Black students to connect and process with others who share similar experiences

with racial stressors, engage in racial socialization, and create a stronger sense of community. Additional support spaces can be made available in response to incidents of racism that occur on campus, the larger community, or within the sociopolitical environment. Support spaces and other group programming can also be targeted for variability of racial stressors faced by certain sub-demographic groups (e.g., women, men, LGBTQ+, first-generation students, etc.). These smaller, group-based interventions provide benefits like those gained through therapy while also promoting racial pride, enhancing self-esteem, and preparing Black students for inevitable injustices they will continue to encounter after graduation (Gómez, 2015; Burkett, 2017).

Tier 3: Intensive. At the intensive, individualized level, supports may be offered directly through campus mental health care, off-campus referrals, or emergency social services. Individual counseling should be provided by Black mental health practitioners and/or practitioners who are adequately equipped to engage in treatment focused on racial stress and trauma (Watson et al., 2020; Kelly et al., 2020; Ilagan & Heatherington, 2022). Likewise, all campus practitioners, staff, and faculty should be provided with adequate training so they can identify and refer Black students in need of individualized support. In the case that off-campus referrals are necessary due to an intensive level of care needed, colleges and universities are encouraged to make connections with local community agencies to ensure that Black students are referred to accessible, affordable, and appropriate services.

The interventions and support services informed by campus-based racial stress screening should be tailored to meet the unique challenges faced by Black undergraduate students. For example, it may be helpful to screen Black students who come from, or live in, environmentally toxic neighborhoods for racial stress because they may not have adequate

resources to deal with the accumulation of toxic stress (Burkett, 2017). Given the socioeconomic impacts of institutional racism, students dealing with culturally bound economic insecurity may benefit from direct referrals to campus and local community resources for financial assistance (Burkett, 2017; Jones, 1972). Colleges and universities are encouraged to conduct routine monitoring to evaluate the effectiveness of screening implementation and the continuum of supports offered to ensure that these are appropriate for addressing racial stress and promoting well-being among Black students.

Using Mixed-Methods to Develop Screening Tools

The mixed-methods used to carry out the current study were instrumental for gathering evidence on the validity of the RSS-BU for use in campus-based racial stress screening. In its current state, the RSS-BU is not a “perfect” measure of racial stress with Black undergraduate students. Many items on the RSS-BU appeared to either not accurately capture the construct of racial stress, be overly redundant, inconsistent across demographic groups, or a combination of these issues. But when considering the pragmatic interpretive framework and Messick’s (1989) unified theory of validity, the RSS-BU may still be a practical tool for the purpose of piloting campus-based racial stress screening with Black undergraduate students. However, results from quantitative and qualitative analyses make it clear that the RSS-BU can still be improved.

The combination of results from Rasch and thematic analysis provide a basis for clarifying why the RSS-BU may not be a productive measure of racial stress with Black undergraduate students. But these mixed results also provide a starting point for guiding further revision and refinement to improve the functioning of the RSS-BU. For instance, participants reported that they did not always respond to RSS-BU items in a way that reflects

their true opinions, which may explain why certain items produced more erratic responses. Likewise, the misfitting items may have had confusing wording or may not have been relevant to the population of focus in the current study. One participant said, “[s]ome of the language was pointed in this survey, and I feel like there are some more subtle forms of racism which need to be recognized.”

If only quantitative or qualitative methods were exclusively used in the current study, it is likely that the researcher would have missed out on information that would be valuable for understanding how the RSS-BU functions as a rating scale. Likewise, only including Likert-type response options on the SVQ would have hindered deeper explorations of Black undergraduate students’ perspectives on campus-based racial stress screening. Altogether, a mixed-methodological approach is encouraged for the development, revision, and refinement of rating scales in order to increase validity and reliability for use in research and applied settings (Zhou, 2019).

Limitations

Despite the methodological strengths noted previously, the researcher also recognizes the study’s limitations. First, the data collection procedures carried out may threaten the validity of the current study. Black undergraduate students were recruited for voluntary participation in a study on racial stress, so it is possible that those who were included in the sample may have reported higher levels of racial stress that are not representative of the actual population of Black students. Additionally, data collection took place during a period in which college and university students were still dealing with national racial unrest and the residual effects of COVID-19 (January to April 2022), which may have led to the recruitment of sample participants with higher racial and general stress levels. Participants also

completed self-report measures via an online format, which may have led to biased, inaccurate, or even dishonest responses (e.g., social desirability effects).

Second, the qualitative data collection and analysis procedures may also be limitations. The current study would have likely benefitted from additional, more targeted questions to gather more helpful responses from participants. Typically, qualitative data collection occurs through participant interviews or focus groups, which allow for rich data collection, in-the-moment clarification of responses, and more detailed analysis. The SVQ included only two open-ended questions for participants to provide responses about their perspectives. Many participants answered only one question and wrote “no comment” or other similar response for the second question. Additionally, the researcher was the sole coder and organizer of themes for this set of qualitative data. Though a sole individual is capable of conducting accurate analysis and interpretation of qualitative data, it can be beneficial to involve an additional person for quality control and identification of themes that the initial coder may have overlooked.

The third limitation is the paradox that the researcher found herself in when deciding if she did in fact measure the constructs of interest, especially since the rating scales used were not piloted prior to conducting the present study. The SVQ was developed by the researcher to measure Black students’ perspectives on racial stress screening, but the results and interpretations from this are limited because the utility of this measure was not explored at all in this study. The researcher adapted the RSS-BU by combining select items from one measure of racial stress and second measure of campus racial climate. Investigating the psychometric properties of the RSS-BU was a core part of this study, but the results revealed that several items did not fit to the statistical model used to test the effectiveness of the rating

scale. So, can the researcher actually state that she was able to measure the construct of racial stress? While the researcher recognizes that no rating scale can serve as a perfect measure for any social construct in the way that a ruler can accurately measure inches or centimeters, the current study is limited in providing evidence on how close the RSS-BU was to objectively measuring racial stress among Black undergraduate students.

Future Directions

There are several future directions for continued research in the areas of racial stress, rating scale development with mixed-methods, and campus-based racial stress screening. First, after refining the proposed rating scale, the researcher recommends continuing data collection or replicating this pilot study with a larger, more diverse sample to increase the generalizability of findings. In alignment with an intersectional lens, further exploration of Black undergraduate students' experiences with racial stress should consider the various identities they may hold. The current study explored the potential influences of gender, generational status, and HBCU affiliation. But it may also be worth investigating how an individual's multiracial identity, SES, sexual orientation, religious affiliation, disability status, or geographic region may impact their experiences with racial stress.

Future research in this area may also consider investigating if being a member of a Black-centered club or organization on campus, such as Black student unions, fraternities, or sororities, can serve as a protective factor. Likewise, further investigations may explore if minority-serving institutions can provide more positive campus environments for Black students in a similar way that HBCUs do. These comparative studies can be conducted with similar methods as laid out in the present study, with independent samples *t*-tests or

investigations of DIF, to contribute to a more comprehensive understanding of how multiple identities intersect and influence experiences of racial stress.

Second, the researcher recommends exploring the dimensionality of the RSS-BU to guide further revision and refinement of the measure. Rasch analysis was used for the second objective of the current study to investigate whether all items on the RSS-BU contributed to a unidimensional measure of racial stress. But in the first objective of the study, the researcher presented both total and domain scores for the RSS-BU, which implies that the measure consists of multiple dimensions. Rasch (1960) theorized that in order for measurement to be successful, only one construct, or dimension, should be measured at a time. While this may suggest that the researcher did not strictly adhere to the assumptions of the Rasch model, it should be noted that unidimensionality is not always a practical goal when measuring psychological constructs.

In fact, the multidimensional Rasch model, as illustrated by Briggs and Wilson (2003), is another extension of the original model that violates this exact assumption of unidimensionality, while still affording the same benefits of guiding precise measurement. The researcher argues that a multidimensional measure can still align with Rasch's original theory as long as the subconstructs are highly correlated with each other and can be organized under a single hierarchical construct. Using the RSS-BU as an example, the four subconstructs—Cultural Racism, Individual Racism, Institutional Racism, and Campus Racism—should be closely related and fall under the unifying construct of Racial Stress.

Third, further exploration and refinement of the RSS-BU should include a combination of both quantitative methods (e.g., pilot testing new prototypes with Rasch or factor analysis) and qualitative methods (e.g., focus groups, cognitive interviews, or expert

panel review). Quantitative methods seem to be most beneficial for answering the question of “what went wrong” with a screener, whereas qualitative methods can be more helpful for answering “why” this went wrong. For example, cognitive interviewing allows measurement developers to check whether items are conveying the correct meaning of a construct, if items might be easily misunderstood by respondents, and why items may perform inconsistently across target populations (International Test Commission [ITC], 2019).

In line with best practices, any items with ambiguous, colloquial, or complicated wording should be removed or revised to avoid confusion among respondents that could result in gathering inaccurate screening information (American Educational Research Association [AERA] et al., 2014; ITC, 2019). Underfitting items are typically the first to be dropped from a rating scale, but removing all underfitting items at once is not recommended. Instead, developers should follow an incremental process of dropping one item at a time from the rating scale before re-running any statistical models for further evaluation. That way, they can see how the removal of one item might affect model fit of the entire measure, then determine which specific items should be retained or removed. On the other hand, overfitting items can be evaluated to determine if they should be dropped from the rating scale to reduce repetitive content and to shorten the time required for screening administration.

Fourth, given that racial stress screening has not yet been implemented across campuses, it will be important to investigate the social validity of screening with other key stakeholders, such as campus practitioners, staff, and executive leadership. Campus practitioners and executives will likely be the ones who are actually making decisions with the information gathered, so their perspectives on the acceptability, feasibility, and appropriateness of screening are critical for promoting institutional support (Wolf, 1978;

Greer et al., 2012). Likewise, it is recommended that key stakeholders, including students, campus health providers, and executive leadership, are involved in the rating scale development and evaluation procedures mentioned previously (e.g., focus groups, cognitive interviews, and expert panel review). Future research will need to determine best practices for both conducting campus-based racial stress screening and effectively following up with students based on results from screening.

The fifth direction that the researcher recommends is explicit investigations into how racial stress among Black undergraduate students is related to the physical, psychological, functional, social, and spiritual aspects of well-being (Harrell, 2000). If using a multidimensional measure similar to the RSS-BU, these investigations may also consider examining the relationships between each aspect of well-being and each subconstruct of racial stress. For example, with Black undergraduate students, it would be interesting to see if a certain form of racial stress may have a stronger impact on functional outcomes, like academic achievement or job performance.

Lastly, while the current study focused on Black undergraduate students, it may also be worth exploring if racial stress screening can be modified for different developmental stages. Racial stressors can impact Black people at any age in life, so prevention and early intervention are recommended. Although a rating scale like the RSS-BU may not be developmentally appropriate, other measures, like the Racism and Life Experience Scales (RaLES; Harrell et al., 1997) have been tested with younger Black populations. It may also be more appropriate to use a less individualized measure if implementing racial stress screening in the K-12 school setting, such as a school racial climate scale. If given the tools earlier in life, Black children can learn to manage and cope with racial stressors more

effectively before needing to deal with the heavy academic and work demands later on in life as a Black adult.

Conclusion

The researcher proposed campus-based screening as one action that colleges and universities can take to effectively identify Black students in need of additional support with racial stress. Utilizing a pragmatic interpretive framework and mixed-methodological approach, the researcher reported on (a) the levels of racial stress experienced by Black undergraduate students, (b) the validity of a rating scale intended to measure racial stress, and (c) the perspectives that Black undergraduate students have on campus-based racial stress screening. The Black undergraduate participants in this study reported experiencing relatively higher levels of racial stress due to cultural racism and relatively lower racial stress due to institutional racism. Women and non-HBCU students reported higher levels of racial stress than men and HBCU students, respectively. Results from investigations of the adapted rating scale suggest that it may be a useful tool for measuring racial stress, but needs improvement to work more effectively across demographic groups. Participants generally supported the idea of campus-based racial stress screening and provided many recommendations for screening implementation, administration, evaluation, and follow-up. The ultimate goal of racial stress screening is to facilitate access to appropriate, culturally responsive services to promote positive mental health and academic success for Black undergraduate students. In conclusion, the present study aimed to address the pressing need for concrete action to address the impacts of racial stress on Black undergraduate students.

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Appendix A: Demographic Questionnaire

In this section, we will ask you questions about your demographic background so that we can provide an overall description of the people who have participated in our research project.

1. What is your birth date? (MM/DD/YYYY)

2. What is your age (in years)?

3. What is your race/ethnicity? (select all that apply)

- Asian or Asian American
- Black or African American
- Hispanic or Latino/a/e
- Middle Eastern or North African
- Pacific Islander
- White or Caucasian
- Prefer to self-describe _____
- Prefer not to say

4. In your own words, please describe your racial-ethnic-cultural identity.

5. What is your gender?

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

6. Which social class group do you identify with?

- Poor
- Working class
- Lower-middle class
- Middle class
- Upper-middle class
- Upper class
- Prefer not to say

7. Have either of your parents or guardians earned a bachelor's degree or higher?

- Yes
- No
- I don't know
- Prefer not to say

8. Which state is your college or university located in?

▼ Alabama ... Prefer not to say

9. Which of the following best describes the area that your college or university is located in?

- Rural
- Suburban
- Urban
- Prefer not to say

10. Are you enrolled in a 2-year or 4-year institution of higher education?

- 2-year
- 4-year
- Prefer not to say

11. Are you enrolled in a public or private institution of higher education?

- Public
- Private
- Prefer not to say

12. Are you enrolled in a Historically Black College or University (HBCU)?

- Yes
- No
- Prefer not to say

13. What is your academic class standing?

- First year/Freshman
- Second year/Sophomore
- Third year/Junior
- Fourth year/Senior
- Fifth year or higher
- Prefer not to say

14. On a scale of 1-10, how would you rate your **stress** during the PAST TWO WEEKS?

No stress at all More stress than ever

1 2 3 4 5 6 7 8 9 10

Use the slider to rate your stress during
the PAST TWO WEEKS



15. On a scale of 1-10, how would you rate your **overall well-being** during the PAST TWO WEEKS?

Terrible Excellent

1 2 3 4 5 6 7 8 9 10

Use the slider to rate your overall well-
being during the PAST TWO WEEKS



Appendix B: Racial Stress Survey for Black Undergraduates (RSS-BU)

The questions in this section are intended to sample some of the experiences that Black people have in this country because of their "blackness." There are many experiences that a Black person can have in this country because of their race. Some events happen just once, some more often, while others may happen frequently. Below you will find listed some of these experiences; for which you are to indicate those that have happened to you or someone very close to you (i.e., a family member or loved one). It is important to note that a person can be affected by those events that happen to people close to them; this is why you are asked to consider such events as applying to your experiences when you complete this questionnaire.

Please select the number on the scale (0 to 4) that indicates the reaction you had to the event at the time it happened. Do not leave any items blank. If an event has happened more than once refer to the first time it happened. If an event did not happen, select 0 and go on to the next item.

- 0 = This never happened to me or someone close to me.
 - 1 = This event happened, but did not bother me.
 - 2 = This event happened & I was slightly upset.
 - 3 = This event happened & I was upset.
 - 4 = This event happened & I was extremely upset.
 - **Prefer not to say**
1. You notice that crimes committed by White people tend to be romanticized, whereas the same crime committed by a Black person is portrayed as savagery, and the Black person who committed it, as an animal.
 2. Salespeople/clerks did not say thank you or show other forms of courtesy and respect (i.e. put your things in a bag) when you shopped at some White/non-Black owned businesses.
 3. You notice that when Black people are killed by the police the media informs the public of the Victim's criminal record or negative information in their background, suggesting they got what they deserved.
 4. You have been threatened with physical violence by an individual or group of White/non-Blacks.
 5. You have observed that White kids who commit violent crimes are portrayed as "boys being boys", while Black kids who commit similar crimes are wild animals.
 6. You seldom hear or read anything positive about Black people on radio, T.V., newspapers or in history books.
 7. While shopping at a store the sales clerk assumed that you couldn't afford certain items (i.e. you were directed toward the items on sale).
 8. You were the victim of a crime and the police treated you as if you should just accept it as part of being Black.
 9. You were treated with less respect and courtesy than Whites and other non-Blacks while in a store, restaurant, or other business establishment.
 10. You were passed over for an important project although you were more qualified and competent than the White/non-Black person given the task.

11. Whites/non-Blacks have stared at you as if you didn't belong in the same place with them; whether it was a restaurant, theater, or other place of business.
12. You have observed the police treat White/non-Blacks with more respect and dignity than they do Blacks.
13. You have been subjected to racist jokes by Whites/non-Blacks in positions of authority and you did not protest for fear they might have held it against you.
14. While shopping at a store, or when attempting to make a purchase you were ignored as if you were not a serious customer or didn't have any money.
15. You have observed situations where other Blacks were treated harshly or unfairly by Whites/non-Blacks due to their race.
16. You have heard reports of White people/non-Blacks who have committed crimes, and in an effort to cover up their deeds falsely reported that a Black man was responsible for the crime.
17. You notice that the media plays up those stories that cast Blacks in negative ways (child abusers, rapists, muggers, etc. [or as savages] Wild Man of 96th St., Wolf Pack, etc.), usually accompanied by a large picture of a Black person looking angry or disturbed.
18. You have heard racist remarks or comments about Black people spoken with impunity by White public officials or other influential White people.
19. You have been given more work, or the most undesirable jobs at your place of employment while the White/non-Black of equal or less seniority and credentials is given less work, and more desirable tasks.
20. You have heard or seen other Black people express the desire to be White or to have White physical characteristics because they disliked being Black or thought it was ugly.
21. White people or other non-Blacks have treated you as if you were unintelligent and needed things explained to you slowly or numerous times.
22. You were refused an apartment or other housing; you suspect it was because you are Black.

Please indicate the degree to which you agree with the statements about your college environment.

- **0** = Strongly Disagree
- **1** = Disagree
- **2** = Neither Agree nor Disagree
- **3** = Agree
- **4** = Strongly Agree
- **Prefer not to say**

23. The university has practices in place that support African American students.^R
24. The university hosts events that promote and celebrate African American culture.^R
25. There are courses available to me that focus on African American culture and history.^R
26. African Americans are represented in high-ranking positions (faculty, staff, administration).^R
27. African American students must go above and beyond to get the same benefits as students of other races/ethnicities.
28. People on campus use racial slurs and commit racist acts against African American students (refusing service, saying the N-word, etc.).

29. Students from different races and ethnicities attend social events together.^R
30. Students from different races and ethnicities study together.^R

Appendix C: Social Validity Questionnaire (SVQ)

Please rate the following statements about racial stress and the survey you completed in the previous section:

- 1. It is important for campus mental health providers and administrators to ask Black students about racial stress.**

Strongly Disagree – Disagree – Somewhat Disagree – Somewhat Agree – Agree – Strongly Agree

- 2. The survey I completed in the previous section asked important questions about racial stress.**

Strongly Disagree – Disagree – Somewhat Disagree – Somewhat Agree – Agree – Strongly Agree

- 3. A survey like this would be useful for connecting Black students to on-campus or off-campus supports for racial stress.**

Strongly Disagree – Disagree – Somewhat Disagree – Somewhat Agree – Agree – Strongly Agree

- 4. I would be willing to fill out a survey like this at my campus health center.**

Strongly Disagree – Disagree – Somewhat Disagree – Somewhat Agree – Agree – Strongly Agree

- 5. I would be interested in being connected to on-campus or off-campus mental health supports to help with racial stress.**

Strongly Disagree – Disagree – Somewhat Disagree – Somewhat Agree – Agree – Strongly Agree

What are your thoughts on campus mental health practitioners and administrators screening Black students for racial stress?

Please provide any other comments or suggestions that you might have related to the survey you filled out in the previous section.

Appendix D: Institutional Review Board (IRB) Approval Letter

UNIVERSITY OF CALIFORNIA

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SANTA BARBARA • SANTA CRUZ

SANTA BARBARA
FWA#00006361

Office of Research
Human Subjects Committee
Santa Barbara, CA 93106-2070

Web: <http://www.research.ucsb.edu>

12/08/2021

VERIFICATION OF ACTION BY THE UCSB HUMAN SUBJECTS COMMITTEE

RE: HUMAN SUBJECTS PROJECT NUMBER 13

FROM: UCSB HUMAN SUBJECTS COMMITTEE

PROTOCOL NUMBER 13-21-0811

TYPE: NOTICE OF EXEMPT DETERMINATION

TITLE(S):

Addressing Racial Stress Among Black Undergraduate Students

INVESTIGATORS:

ERIN DOWDY

Isabelle Fleury

The above identified protocol may commence on 12/08/2021. Exempt protocols do not expire.

The research activities under this submission qualify as Exempt from the Federal Regulations at 45 CFR 46.104(d) under the following Categories: 2

Although your study qualifies as exempt research, investigators are expected to adhere to UCSB policies and conduct their research in accordance with the ethical principles of Justice, Beneficence, and Respect for Persons as described in the Belmont Report.

AMENDMENTS/MODIFICATIONS/CHANGES:

Any change in the design, conduct, or key personnel of this research must be reviewed by the UCSB HSC prior to implementation. This includes changes to the study procedures and/or documents (e.g., protocol, consent form, recruitment materials, addition of data points, addition or change of research sites) and changes to the research team. If you are unsure whether your changes constitute a protocol modification, contact the HSC for guidance. Changes may result in a reevaluation of eligibility of an Exempt Determination.

UNANTICIPATED PROBLEMS/ADVERSE EVENTS:

If any study subject experiences an unanticipated problem involving risk to subjects or others, and/or a serious adverse event, the HSC must be informed promptly. An e-mail or phone call must be received within 7 days. Further reporting requirements will be determined by the HSC at that time.

RECORDS RETENTION REQUIREMENTS:

Please remember that signed consent forms must be maintained for a minimum of three years after the end of the calendar year in which the research is completed. Additional requirements may be imposed by your funding agency, your department, or other entities.

If you have any questions about the above, please contact the Human Subjects Committee Coordinator at: (805) 893-3807; (805) 893-2611 (fax); hsc@research.ucsb.edu

For more details on this protocol, go to the ORahs website: <https://orahs.research.ucsb.edu>



SEEKING BLACK UNDERGRADS FOR RACIAL STRESS RESEARCH

ARE YOU:

- **BLACK OR AFRICAN AMERICAN?**
- **AT LEAST 18 YEARS OLD?**
- **AN UNDERGRADUATE STUDENT?**
- **ENROLLED IN A COLLEGE OR UNIVERSITY IN THE U.S.?**

If you answered **yes** to all of these questions, you may be eligible to participate in an IRB approved research project!

We want to learn more about your experiences with anti-Black racism or discrimination, and your opinions about racial stress screening. The study will take 10-15 minutes to complete.

We only need 80 more participants!
The first 80 participants to complete this study will receive a **\$10 Amazon eGift Card.**



**QUESTIONS? contact
Isabelle Fleury at
fleury@ucsb.edu or
805-749-1367.**

HOW TO PARTICIPATE

Follow this link:
<https://bit.ly/3rkGf91>
OR scan the QR code →



Appendix F: Study Recruitment Flyer #2

I would like to let you know about an opportunity to participate in a research study being conducted by Isabelle Fleury from the University of California, Santa Barbara. The purpose of the study is to learn more about how Black undergraduate students experience racial stress and if campuses should screen students for racial stress.

To be eligible for this study, you must be:

- Black or African American
- At least 18 years old
- An undergraduate student
- Enrolled in a college or university in the United States

If you decide to participate, we will have you complete an online survey with questions about experiences you may have had with anti-Black racism or discrimination. You will also complete a feedback survey to provide your perspective on the potential value of screening Black undergraduate students for racial stress at college and university health centers.

We only need 80 more participants for this study! The first 80 participants to complete this study will receive a \$10 Amazon eGift Card. We estimate that it will take you about 10-15 minutes to complete this study.

If you are eligible and would like to participate, please use this link to continue to the study: https://ucsb.co1.qualtrics.com/jfe/form/SV_1SSboDJzUFQsSqO

If you would like additional information about this study, you can contact me, Isabelle Fleury [fleury@ucsb.edu, 805-749-1367], or Dr. Erin Dowdy [edowdy@ucsb.edu].

Thank you for your consideration, and once again, please do not hesitate to contact us if you are interested in learning more about this Institutional Review Board approved project.

Best,
Isabelle Fleury, M.Ed.

Appendix G: Study Protocol and Informed Consent

Start of Block: Eligibility

Q1 Please complete the captcha verification

Q2 Please answer the following questions to determine eligibility to participate in this study.

Are you Black or African American?

Yes

No

Skip To: End of Survey If Please answer the following questions to determine eligibility to participate in this study. Ar... = No

Q3 Are you at least 18 years old?

Yes

No

Skip To: End of Survey If Are you at least 18 years old? = No

Q4 Are you an undergraduate student?

Yes

No

Skip To: End of Survey If Are you an undergraduate student? = No

Q5 Are you enrolled in a college or university in the United States?

Yes

No

Skip To: End of Survey If Are you enrolled in a college or university in the United States? = No

End of Block: Eligibility

Start of Block: Consent

Q7 Explanation of Research Study

Purpose:

You are being asked to participate in a research study. The purpose of the study is to learn more about how Black undergraduate students experience racial stress and if college/university campuses should ask students about racial stress. Racial stress refers to the reactions you may have to experiences of racism, whether they happened directly to you or someone else, and the negative impact it may have on your well-being. Campus screening for racial stress would mean that each Black student would be provided with a questionnaire to fill out so that campus mental health providers and administrators can gather information about the racial stress of their students with the goal of providing direct mental health services, implementing campus-wide interventions, or connecting students to off-campus supports.

Procedures:

If you decide to participate, we will ask you to complete a survey in Qualtrics. In the first section, you will be asked questions about your demographic background so that we can provide an overall description of the people who have participated in our research project. Please understand that we will be collecting this information in a way that will not identify you personally. In the next section, we will ask you questions about experiences you may have had with racism or discrimination. In the final section, we will ask you to provide feedback on whether you think the questions we asked about in the previous section are helpful for understanding how racial stress affects Black undergraduate students like yourself. We will also ask you about your perspective on the appropriateness and usefulness of screening for racial stress at college and university health centers.

We estimate that it will take you about 15-20 minutes to complete this study. This study will be recruiting approximately 250-300 participants from January 2022 to April 2022.

Benefits:

There are no direct benefits to participating in this project, but we hope you may find an

indirect benefit from sharing more about your personal experiences and perspectives.

Risks:

There are no anticipated risks to participating in this project. However, it is possible that you may experience some discomfort when answering questions about racial stress.

Confidentiality:

The data we collect will not be linked to your identity in any way.

Payment:

If you are one of the first 200 participants to complete this study, you will receive a \$10 Amazon eGift Card. All participants will also be entered into a drawing for a \$500 Amazon eGift Card at the end of the study. We require you to provide us with your email address so that we can send you your eGift Card or enter you into the drawing. Your odds of winning the \$500 eGift Card are about 1 to 300.

Right to Refuse or Withdraw:

You can refuse to take part in this project and you can stop participating at any time. You can decline to answer any items in the questionnaire. You have the right to receive a copy of this consent form.

Contact Information:

If you have questions about this research, you can contact me, Isabelle Fleury [fleury@ucsb.edu, 805-749-1367], or Dr. Erin Dowdy [edowdy@ucsb.edu].

If you have any questions regarding your rights as a research subject, please contact the Human Subjects Committee at (805) 893-3807 or hsc@research.ucsb.edu. Or write to the University of California, Human Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050

Q8 Do you consent to participate in this research study?

- YES**, I consent to participate in this research study
- NO, I DO NOT** consent to participate in this research study

Skip To: End of Survey If Do you consent to participate in this research study? = NO, I DO NOT consent to participate in this research study

Q9 After this research is completed, we may want to present some of the data at conferences and share data collected as part of this research with other universities or researchers for future research purposes. However, we will protect your privacy in the future in the same way as in this study, and the data will only be used for academic purposes.

Please indicate if you give permission for the uses of your data for future research purposes:

- My data collected as part of this project may be used for future research purposes
- My data collected as part of this project **may not** be used for future research purposes

Q10 Please provide your contact information

Q11 Name



Q12 Institutional email address (e.g., yourname@yourschool.edu)

End of Block: Consent