**Unique stress, Cultural Resources, and Psychological Resilience in Young African American Women: Insights for Effective Intervention and CVD Prevention**

**Authors:**

Sparkle Springfield-Trice, PhD, Cara Joyce, PhD, Penny Williams, BS, MS, Dinishia Williams-Wolford, BS, Destiny Onyeise, MS, Natalie Battles, BS, Dionne Milton, MS, Lena Hatchett, PhD, Ursula Staudinger, PhD

*Tentative authorship subject to change based on level of contribution\**

1Loyola University Chicago

Parkinson School of Health Sciences and Public Health

Department of Public Health Sciences

2160 S 1st Ave, Maywood, IL, 60153

Ph: 708-216-4520

Email: sspringfield@luc.edu

2Loyola University Chicago

Parkinson School of Health Sciences and Public Health

Department of Public Health Sciences

2160 S 1st Ave, Maywood, IL, 60153

Ph: 708-216-3300

Email: cjoyce6@luc.edu

Corresponding author:

Sparkle Springfield, PhD

Loyola University Chicago

Parkinson School of Health Sciences and Public Health

Department of Public Health Sciences

2160 S 1st Ave, Maywood, IL, 60153

Ph: 708-216-4520

Email: sspringfield@luc.edu

Word Count (text and abstract): 4175

**Unique stress, Cultural Resources, and Psychological Resilience in Young African American Women: Insights for Effective Intervention and CVD Prevention**

**Abstract**

**Objectives**

Psychological resilience (i.e., the self-reported ability to bounce back from stress) is understudied in young African American women (YAAW). Guided by community input, this study investigates the associations between resilience and three constructs defined by Staudinger’s 2015 model of resilience and aging: (1) perceived stress, (2) non-psychological resources, and (3) psychological resources. We aimed to identify cultural resources that promote resilience in the face of unique stressors.

**Methods**

We conducted a cross-sectional survey on 512 self-identified AA women aged 18-35 years. Resilience was measured by the Brief Resilience Scale, ranging from 1-5 with higher scores indicating greater resilience. Linear regression analysis was performed to analyze the relationships between stressors, resources, and resilience. Then elastic net (EN) regularization was applied to pinpoint resources most strongly associated with resilience after adjusting for age, stressors, and other resources, respectively. Data was analyzed using SAS version 9.4.

**Results**

Overall, women who reported higher resilience had fewer stressors and reported greater access to resources. In the fully adjusted EN model, perceived stress (β= -0.16), lifetime discrimination (β= -0.01), internalized racism (β= -0.06), ACEs (β= -0.03), and community stress (β= -0.02) has significant and associations with resilience, while improvisation skills (β= 0.23), [non]neurotic (β= 0.22) and conscientious personality traits (β= 0.08), [not] expressing anger to cope with discrimination (β= 0.03), absence of comorbidities (β= 0.04), hip-hop (β= 0.03), and gardening (β= 0.02) were among those positively associated. Improvisational skills and [non]neurotic personality traits stood out as leading resilience resources; respectively.

**Conclusion**

Stress-reduction techniques that address trauma and raising self-awareness of health-promoting aspects of AA cultural identity (like improvisation) may be important resources to fostering resilience in young women. Further research is needed to validate these findings and inform effective intervention strategies.

**Keywords:** stress, resilience, cultural resources, African American women, young adults

**Acknowledgments**

We would like to extend our gratitude to the survey participants, Qualtrics’ staff, and our community partners – including our community advisory board (Black Women Nutritious and Joyful), Proviso Partners for Health, who assisted in the survey design and helped interpret findings. While the survey’s distribution was funded by Loyola Public Health Science Department’s start-up funds, the current research was supported by the ITM-sponsored Loyola University Chicago Early Investigator Award – KL2TR002387. Special thanks are extended to members of the Nutrition Resilience and Health Equity Lab, who assisted with the manuscript’s preparation. This includes Benny Garcia, Keyana Williams, Quincy Rogers, Thilini Fernando, Yosan Lebab, Rose Thornquist, Malak Fisseha, Sara Vanderpuye, Hafsa Mohammed, and Elizabeth Doyle. Finally, I'd like to acknowledge my great grandmother, Hattie Pruitt, 109 years old, my grandmother Shantelle Thomas 83 years old, my mother Tracy Springfield 62 years old as well as other African American women who have paved the way.

**Introduction**

As survivors of historical, transgenerational, and contemporary injustices, young African American women (YAAW) demonstrate a legacy of multidimensional resilience that persists today [[1-8](#_ENREF_1)]. Resilience has been conceptualized in several different ways, including maintenance of health outcomes, positive adaptation in the face of significant stressors, protective factors that modify negative outcomes, recovery from trauma, resistance to oppression, and survival [[9-11](#_ENREF_9)]. Smith and colleagues (authors of the Brief Resilience Scale) suggest that belief in "one's ability to recover and bounce back from stress" may be the closest to its original meaning [[12-14](#_ENREF_12)]. Since positive belief in self-achievement generally support corresponding action, it follows that psychological “bounce back” resilience may be the first step necessitating all other forms. Yet, this type of belief-based psychological resilience (hereafter resilience) and related resources in YAAW are understudied and underrecognized in existing health literature [[15](#_ENREF_15)]. Due to unique contextualized risks of AAs, there is likely significant variation in the perception of what qualifies as *being resilient* or an resilience resource within the community and certainly across different racial and ethnic groups [[16](#_ENREF_16), [17](#_ENREF_17)]. Thus, addressing this gap in literature, regarding the relationships between unique stressors, cultural resources, and resilience experienced by YAAW can provide valuable psychosocial contextual insights into effective health promotion strategies in this group. Some of which is relevant to cardiovascular disease prevention strategies.

YAAW are still dealing with white supremacy culture and race-based oppression, often intersecting with multiple aspects of their identities (e.g., gendered anti-black racism, ageism) in addition to the expanding stressors of early adulthood [[18-24](#_ENREF_18)]. Race-related stress can manifest as chronic and daily stressors in YAAW which are implicated in the development of adverse health outcomes [[25-30](#_ENREF_25)]. Including internalized racism, everyday discrimination, major life discrimination, adverse childhood experiences, community violence (e.g., vicarious trauma), and food insecurity. These stressors are likely compounded by those that mark early adulthood such as leaving one's home of origin, career obstacles (e.g., academics, unemployment), inaccessible healthcare, family planning, and caretaking, as well as early onset of disease risk factors [[31](#_ENREF_31), [32](#_ENREF_32)]. Navigation of these numerous transitions and societal expectations is against the backdrop of collective stressors – such as environmental hazards, technological revolutions, political conflict, and social unrest [[18](#_ENREF_18)].

**In spite of this, some YAAW continue to adapt and mobilize resources to become successful and leaders of society** [[24](#_ENREF_24), [33-38](#_ENREF_33)]. Pertinent examples can be found in their history of inclusive activism. YAAW have led racial justice movements in the US for centuries until today [[39-41](#_ENREF_39)]. Within the past two decades YAAW have created, launched and participated in transformative national and international movements and organizations to improve health outcomes in the AA community and promote health equity (i.e., BlackLivesMatter, SayHerName, BlackTransLivesMatter, MeToo, GirlTrek, Black Girls Code, etc.). Many of these leveraged online platforms to catalyze political advocacy via social media to support mental health and wellbeing in YAAW specifically [[36](#_ENREF_36), [41-53](#_ENREF_41)]. Interestingly, one media trends (BlackGirlMagic) specially aimed to highlight the underrecognized (and perhaps mystic) contributions of YAAW to society. Recent reports YAAW made significant and notable strides in earning academic degrees, becoming entrepreneurs, and promotion in Corporate America [[54-56](#_ENREF_54)]. Despite these areas being far from equitable, this contextual information suggests YAAW have fostered effective approaches to resilience – yet large the scientific community does not understand these strategies or there facilitators [[57](#_ENREF_57)].

Health studies have rarely incorporated formal measures of resilience using reliable and validated scales – perhaps a missed opportunity to inform effective strength-based interventions toward health equity promotion [[16](applewebdata://E0DFB979-FF82-4759-821A-9615EF286CD0#_ENREF_16), [36-40](applewebdata://E0DFB979-FF82-4759-821A-9615EF286CD0#_ENREF_36)]. Some biological evidence suggest YAAW have retained mitochondrial DNA from the first human (known as Africa’s Eve) and subsequently perhaps the greatest potential for intergenerational transmissions of resilience [[58-61](#_ENREF_58)]. In that way, a lack of quantitative evidence regarding resilience in this group, specifically may hinder the understanding of the resilience construct overall across various subpopulations. As well as other psychological assets that can buffer the negative effects of high amounts of stress. Notably, to date, stress-related health outcomes, such as CVD are the leading cause of mortality and morbidity in YAAW [[62-67](#_ENREF_62)]. As a result of growing interest in the topic, recent epidemiological studies have tested the ability of resilience to modify the relationship between stress and CVD risks in AA women with promising findings, although inconsistent [[24](#_ENREF_24), [68-71](#_ENREF_68)]. For instance, the MECA Study (Morehouse-Emory Center for Health Equity) is currently measuring multilevel exposures that foster resilience among Blacks in the surrounding Atlanta, GA, metropolitan area who are at risk of CVD [[72](#_ENREF_72)]. One of their publications found that, among predominantly older Black women (N=389; mean age 53±10 years; 69% women), a composite score of individual-level psychological resilience is linked to better cardiovascular health, regardless of socioeconomic factors or neighborhood context [[73](#_ENREF_73)]. Nevertheless, none of the studies are theory driven, include community input, or focus on identifying the resources that contribute to resilience in YAAW, specifically.

Identifying resilience resources in YAAW may increase their knowledge of self and lead to the development of more effective health interventions for this group [[74](#_ENREF_74)]. Interestingly, many resilience resources are rooted in historical cultural practices of the AA community [[75-89](#_ENREF_75)]. These include, but are not limited to: spirituality, food systems work (farming, gardening), civic engagement (organizing and activism), extended kinship (social support), art therapy (music, singing, dancing, comedy, theatre), all of which are stem from improvisation skills and creativity. Today, more contemporary resources might include self-efficacy for healthy eating, good diet quality, affinity for hip hop music, prayer/meditation, use of social media, caregiving, Black activism, and coping responses to perceived discrimination [[90-97](#_ENREF_90)]. Given most resilience literature is based on white epistemology – fail to recognize the ways in which systemic racism affect health [[8](#_ENREF_8), [9](#_ENREF_9), [98-101](#_ENREF_98)] – few studies have framed AA cultural assets as resilience resources or examined their relation. Studies that prioritize cultural determinants and the perspectives of women with lived experience are needed [[9](#_ENREF_9), [102-104](#_ENREF_102)].

Raised awareness of culturally relevant resilience resources may support YAAW in fostering resilience across the life course. For instance, using the Women’s Health Initiative (WHI) [N=77,395; mean age 76.99 (±6.4) years; (race/ethnicity: 4475 Black or African American; 69,448 non-Hispanic White; 1891 Hispanic/Latina; and 1581 Asian or Pacific Islanders], Springfield et al. (2020) found that 45.6% of women reported high resilience (as measured by the Brief Resilience Scale) [[105](#_ENREF_105)]. This study suggested older AA women had greater resilience compared to other racial and ethnic groups, albeit they had to exert additional effort to achieve it. In the same study, the strongest resilience resources included control of beliefs, energy, personal growth, mild-to-no forgetfulness, and a sense of purpose. In a separate study, conducted on YAAW exposed to sexual violence (N=232; mean age 26.22 ± 6.35), Catabay et al. 2019 found 36% of the sample had a high level of resilience (as measured by the Connor-Davidson Resilience Scale) which significantly mediated the association between stress and depression [[106](#_ENREF_106)]. Still, these studies do not test the affects culturally specific resilience resources that support increased knowledge of self and thereby sustained use in YAAW.

Guided by women's lived experience and Staudinger’s (2015) model of resilience and aging, the current study aims to take a foundational step toward addressing this critical gap in the literature by investigating the associations between resilience and (1) perceived stressors (i.e., discrimination), (2) non-psychological resources (e.g., level of education), and (3) psychological resources (i.e., improvisation). To be clear, Staudinger’s theory defines resilience as a constellation of risk factors (stressors) and protective resource factors. According to this view, mobilizing available resources could help individuals navigate their stressors and maintain their well-being. We hypothesized that culturally informed non-psychological and psychological resources would be significantly associated with resilience, after accounting for unique stressors. All variables were identified through our theoretical framework, community input, and the broader literature.

Recognizing we could not capture all resilience resources relevant to YAAW, and the heterogeneity within this group, we attempted to shed light on the complex lifeworld’s of YAAW [[107](#_ENREF_107)]. Consistent with culturally informed research practices, this study includes community input in an effort to examine variables that are reflective of YAAW’s sociocultural contexts. This approach aids in identifying effective resilience resources, while assuring they are grounded in the lived experiences of the women they aim to support.

**METHODS**

***Study Design and Participants***

We conducted a cross-sectional analysis using survey data from Qualtrics, a marketing company that conducts consumer-based research. The platform includes research panels that commonly complete survey. These panels are made up of pre-verified individuals who respond to survey invitations through a hyperlink sent via e-mail. For our study, Qualtrics staff were instructed to recruit survey respondents who self-identified as African American women aged 18 to 35 years old. Upon clicking the survey link, respondents were directed to an informed consent page, which they had to accept before proceeding to the survey. Survey took approximately 30 to 40 minutes to complete. Survey participants were compensated for their time by Qualtrics.

The survey was developed in collaboration with Black Women Nutritious and Joyful (BWNJOY), a community advisory board established in September 2020 to contribute to research for the health promotion of African American women induvial and collective promotion of well-being and resilience. The survey was codesigned to examine the interplay between stressors, resources, resilience, and diet-related outcomes in YAAW. It was completed in 2021 by 512 self-identified women who were recruited nationwide by Qualtrics staff via email, with 40% from the Chicagoland area. In addition to initial survey design, BWNJOY provided insights on all phases of the present study. Most notably, identification of study measures based on the literature and the lived experience, participant population, interpretation of findings, and manuscript preparation. The study received ethical approval from Loyola University Chicago’s Institutional Review Board.

***Measures***

Following Staudinger’s theoretical model (2015), we organized all exposure variables into stressors, non-psychological, and psychological resources to investigate how perceived stress and resources associate with resilience [[108](#_ENREF_108)]. See Figure 1. Additionally, sociodemographic variables that could potential modify the relationship between stressors and resources were assessed. These include age [in years], and sexual orientation [heterosexual; lesbian, gay, homosexual; bisexual, none of these], and whether the YAAW was enrolled in college at the time of the study. Detailed information on variable measurement can be found in Supplementary Table 1.

Briefly, stress measures include perceived stress, everyday discrimination scale, major discrimination experiences, adverse childhood experiences, internalized racism scale, community stressors, and food insecurity.

Non-psychological resources were organized into biological, physical, socio-economic, and physical. Biological measures included self-reported CVD-related outcomes [history of hypertension, high cholesterol, diabetes, cancer, and diet quality (as measured by the WELL Diet Score), physical activity, smoking status, alcohol use, body mass index (calculated from height and weight), and other health factors [depression, history COVID-19]. Socio-economic measures included education, employment, marital status, children, government assistance (i.e., SNAP, WIC, Section 8, unemployment insurance, COVID Rent Relief Program), and unpaid caregiving. Physical resources included access to technology, social media use, cannabis use, and knowledge of community resources.

Psychological resources measures were organized into subdomains: cognition, self and personality, and social relations. Cognition measures included spirituality, knowledge of diet and disease, improvisation, gardening, and affinity for hip-hip. Self and Personality measures included self-efficacy for healthy eating, self-efficacy for meal preparation, Big Five personality traits, brief resilience coping, coping responses to unfair treatment, Black identity, benevolent childhood experiences, hairstyle, and control of beliefs. Social relations measures included social support, online social support scale, and Black community activism.

Resilience was measured using the Brief Resilience Scale (BRS), where participants were asked to respond to six statements using a 5-point that ranged from “strongly disagree” to “strongly agree.” A higher BRS score indicates greater resilience. Author suggested cutoffs for level defining levels of resilience are as follows: low (1.0-2.9), medium (3.0-4.2), and high (4.3-5.0) [[12-14](#_ENREF_12)]. The following are sample statements: “I tend to bounce back quickly after hard times,” “It does not take me long to recover from a stressful event,” and “I have a hard time making it through stressful events.” Cronbach’s alpha coefficient for the 6 items was 0.7, suggesting good reliability and relatively high internal consistency.

***Statistical Analysis***

We summarized participant characteristics overall and by level of resilience. Both univariable and multivariable linear models were used to analyze the relationship between BRS scores and the identified stressors, as well as non-psychological and psychological resources. Models were adjusted for age and were further refined using elastic net modeling – a technique that optimizes prediction by combining features of ridge regression and LASSO (Least Absolute Shrinkage and Selection Operator) [[109](#_ENREF_109)].

Initially we analyzed two individual fitted models, crude and age-adjusted and then four elastic net (EN) models. The first EN model is focused solely on stressors, with subsequent models incorporating non-psychological and psychological resources. A final model featured all predictors. Although the models were presented from complete case analyses, sensitivity analyses employed multiple imputation to handle missing data, followed by model selection and averaging [[110](#_ENREF_110)]. All data analysis was performed using SAS version 9.4 (SAS Institute, Cary, NC).

**RESULTS**

***Description of Participant Characteristics***

***Potential modifiers and Resilience Levels***

Our study sample included 512 young African American women (YAAW) with diverse sociodemographic backgrounds. Mean age in our sample was 24 (±5). The majority of women were heterosexual, followed by bisexual, homosexual and about 8% of the sample self-reported none of these sexual orientations. Nearly half the women reported they were currently enrolled in college at the time of data collection. Nearly two thirds of women reported high 6.3% (n=32) and medium 58.2% (n=298) levels of resilience with the remainder reporting low 35.5% (n=182). Age, and heterosexual orientation demonstrated a positive trend with resilience, while sexual minorities and being currently enrolled with college demonstrated a negative trend. For a detailed distribution, see Table 1.

***Stressors***

YAAW in our study reported high levels of unique psychological stress. Perceived stress scores averaged 7.7 (±2.8) out of 16. With regard to assessments specifically designed to capture experiences of racism, internalized racism, daily discrimination, and major discriminatory events in one's life, average scores were 2.8 out of 5, 181 out of 1,300 (translatable to 1-2 experiences every week), and 6.8 out of 12 (translatable to more than 6 significant experiences of discrimination in their lives); respectively. Women reported having experienced 2-3 traumas before the age of 18 years. They reported viewing 2-3 instances of community violence in the past six months, and over sixty percent (n=322) reported food insecurity. All stress measures demonstrated a negative trend with resilience.

***Resources***

***Biological***

More than 45% of our sample reported being mothers, with biological children at home. Over 40% of women reported providing unpaid care to others who were not their biological children. Approximately one third of our sample had been diagnosed with hypertension, high cholesterol, diabetes, or cancer. More than two-thirds screened positive for depression. About 20% reported a history of COVID-19. Two-thirds screened positive for depression. Overweight and obesity were common. All health behaviors measures indicated the need for improvement, particularly diet quality. Absence of disease had a positive trend with resilience scores across disease outcomes, health behaviors were not as clear.

***Physical***

Nearly all of YAAW had access to a smartphone and/or laptop, and almost half reported a tablet. Almost half of the sample reported not using cannabis. The knowledge of community resources was moderately high, with women reporting a 4 out of 7. All of these physical resources appeared to demonstrate a positive trend with resilience.

***Socioeconomic status***

Our sample had an even distribution of education levels, with about a third having a high school diploma, some college, or a four-year degree. YAAW were mostly employed full-time (about 42%), followed by part-time students, unemployed, self-employed, and less than 5 percent were homemakers, disabled, or retired. About a fourth of our sample 25% reported being married or in a married/like relationship. The majority reported being single, with less than 2% having experienced divorce or widowhood. Approximately 65% of women reported receiving government assistance (WIC, Link, COVID-19 rent relief program).

***Cognition***

Our sample reported gardening, praying, and attending religious services weekly. A moderate understanding of the link between diet and disease outcomes was demonstrated, as well as moderately high improvisation skills and an affinity for hip hop.

***Self & Personality***

YAAW reported moderately high self-efficacy for eating and preparing healthy foods including fruit and vegetables. They exhibited all the Big Five Personality Characteristics (extroversion, agreeableness, conscientiousness, neurotic, openness). All personality types showed a positive trend with resilience except extraversion (which did not change with resilience level) and neurotic personality showed a negative trend. YAAW reported medium coping skills. In response to race-related stress, respondents most often “Worked harder to prove them wrong”, “Prayed about the situation”, “Tried to do something about it”, “Expressed anger or got mad”, “Accepted it as a fact of life”, and “Realized that you brought it on yourself”, respectively. Women in the high resilience group reported higher Black cultural identity and positive childhood experiences. Natural hairstyles were the most popular, particularly among women with high resilience. They also reported believing they could control important things in their lives more than those with lower resilience

***Social Relations***

YAAW reported little social support in person and moderate support online, as well as engaging in Black activism. They reported only having 1-2 people nearby they could count on for help in times of need. Nearly all YAAW reported using social media including texting, Instagram, YouTube, Tiktok, Snapchat, and Facebook, Pinterest and dating sites. Only texting showed a slight positive trend with resilience. YAAW reported moderately high endorsement of Black community activism, scoring about 3.1 as a whole group out of 5, across all resilience groups.

***Crude and Age-adjusted Associations with Resilience***

Every stressor negatively impacted resilience in the crude model. The majority of resources were significantly and positively associated with resilience. Exception include diet quality, being a smoker, having more than one alcoholic drink per day, having a college degree, being married or in a married-like relationship, having children, attending religious services, praying, gardening, extroversion and openness Big Five personality types, some responses to unfair treatment (tried to do something about it, accepted it as a fact of life, worked harder to prove them wrong, talked to someone about how you were feeling), natural hairstyles, social support, black community activism. Age-adjusted models confirmed this pattern except for diet quality. *See Table 2.*

***Stressors and Resilience (EN Model 1)***

All stressors remained significantly and negatively associated with resilience with the exception of every day discrimination.

***Stressors, Non-Psychological Resources, Resilience (EN Model 2)***

When only considering non-psychological resources, biological and socioeconomic resources demonstrated significant and positive association with resilience; not physical. Resilience was positively impacted by the absence of disease, not drinking alcohol, and physical activity. For socioeconomics, not having a four-year degree and being a paid caregiver demonstrated the strongest positive associations with resilience, respectively. All stressors remained significantly and negatively associated with resilience, except for everyday discrimination.

***Stressors, Psychological Resources, Resilience (EN Model 3)***

When only considering psychological resources, cognitive and self-and-personality resources have the strongest associations with resilience; not social relations. Cognitively, the ability to improvise and liking hip-hop music were important resilience resources. Self & personality traits such as not expressing anger or getting mad in response to discrimination, being conscientious, and not being neurotic positively affected resilience. Apart from discrimination and food insecurity, all stressors were negatively related to resilience.

***Stressors, all Resources, Resilience (EN Model 4 - Fully adjusted)***

In the fully adjusted model, psychological and non-psychological resources within each subdomain showed significant positive associations with resilience. Biological resilience resources include the absence of disease (hypertension, high cholesterol, diabetes, and cancer) and inadequate sleep (less than 6 hours). Physical resilience resources include [less] knowledge of community resources. Socio-economic resources, included being a [paid] caregiver and [not] having a college degree. Cognitive resilience resources include improvisation, gardening, and hip-hop. Self- and personality resources, including not exhibiting neurotic personality traits, and not expressing anger or getting mad in response to perceived discrimination. Less engagement in Black community activism was related to resilience. All stressors remained significantly and negatively associated with resilience except everyday discrimination and food insecurity.

***Ranking of Resources***

Elastic net regression identified the top 11 non-psychological and psychological resources impacting resilience by the magnitude of their association with resilience. Namely, improvisation ranked number one. Then personality traits such as [non]neuroticism and then conscientiousness. Followed by not expressing anger as a coping strategy, absence of disease, [less] knowledge of community resources, an affinity for hip-hop music, less engagement in Black community activism, being a paid caregiving (for others besides one’s biological children), gardening, not holding a college degree, and inadequate sleep (<6 hours per night), see Figure 2.

**DISCUSSION**

With input from women with the lived experience, this study examined the associations between belief-based psychological resilience (as measured by the Brief Resilience Scale - hereafter resilience) and three constructs defined by Staudinger's model of resilience and aging: (1) perceived stress, (2) non-psychological resources, and (3) psychological resources for young African American women (YAAW). We aimed to identify resources that support resilience in YAAW while adjusting for prevalent stressors. Overall our findings reinforce the general pattern observed in the literature, which demonstrates stressors are significantly and negatively associated with resilience, while perceived access to resources is significantly and positively associated [[4](#_ENREF_4), [6](#_ENREF_6), [91](#_ENREF_91), [105](#_ENREF_105), [111-116](#_ENREF_111)]. Following adjustment for age, stressors, and other resources, eleven resources were identified as having the strongest and most significant association with resilience. See figure 2. Out of the top eleven resilience resources, the strongest resources were psychological and modifiable - 6 versus 5. In particular, the top four resilience resources were psychological and modifiable, including improvisation as a means of problem-solving and possessing self & personality traits that all contribute to positive coping with stress, such as [non] neuroticism, conscientiousness, and not "getting mad" in response to discrimination. Broadly, our findings suggest YAAW may benefit from these resilience resources in the face of significant stressors, and they may serve as intervention points for building resilience among those at the greatest risk of adverse health outcomes due to high stress.

**Stress**

Our findings support evidence that YAAW are subjected to multifaceted and intersecting stressors, which negatively impact resilience [[117](#_ENREF_117)]. Perceived stress was significantly more harmful than other stressors for resilience. The overlapping definitions between perceived stress and control beliefs – the perception that one’s actions can bring about desired outcomes and avoid negative ones – may account for this [[118-120](#_ENREF_118)].

As YAAW experience multiple interconnected and structurally driven stressors – i.e., internalized racism, adverse childhood experiences, community stressors, food insecurity, discrimination - cumulative and synchronized effects may amplify feelings of lack of control and power [[121](#_ENREF_121), [122](#_ENREF_122)]. This may contribute to high levels of perceived stress. This seems to be a greater predictor of low resilience than stress variables, individually or in combination in our YAAW sample. Moreover, stressors assessed in our study have been linked to trauma (symptomology includes brain injury, altered neural response, overreactive emotions, flashbacks, PTSD, depression, anxiety, etc.), which can impair cognitive ability including identification of resilience resources that can be used to resolve challenging situations, which can further magnify perceived stress [[30](#_ENREF_30), [123-126](#_ENREF_123)]. This may explain why our findings suggest YAAW having access to multiple resources did not eliminate negative associations between perceived stress and resilience.

It may be helpful for researchers and practitioners to consider that YAAW may be unaware of how much trauma they have inherited, acquired, and are experiencing at the time of intervention [[127-129](#_ENREF_127)]. Moreover, all new stressors are filtered through YAAW's experiences and can strain YAAW's ability to balance demands and resources in her environment. This creates a sense of loss of control and power. This can create higher levels of perceived stress and the perpetual process of trying to bounce back from stress even if one is unsure of how to achieve it. In this interpretation, we point to our strongest resilience resources, improvisation, followed by non-neurotic personality traits.

**Personality traits – neurotic and conscientious**

Toward that end, our results are consistent with previous studies showing resilience to be adversely related to neuroticism and positively related to conscientiousness (ranked third in our study for its relation to resilience) [[130](#_ENREF_130)]. Neurotic individuals are emotionally reactive and prone to negative emotions. This results in higher emotional outbursts, reduced self-esteem, and pessimistic thoughts, as they frequently face stressors. As they mature, negative experiences build, leading to low self-esteem and confidence that diminishes their resilience. People with neurotic personalities may have poorer health outcomes as they are prone to experiencing heightened adverse physiological changes in response to racism and anticipated racism which may be exacerbated by additional intersecting identity-based oppressions (e.g., sexism, ageism, homophobia, weight bias, colorism, etc.) [[131](#_ENREF_131)]. Assessing neurotic personalities in health interventions and providing training and resources to prevent triggers that activate physiological and psychological stress response pathways may be beneficial to health programs for YAAW.

Conscientious individuals usually have good planning skills, are reliable, and are dutiful [[132](#_ENREF_132)]. Self-efficacy, a significant component of conscientiousness, overlaps with resilience as it indicates a person’s ability to bounce back from stress. A meta-analysis of 30 studies showed that the average correlation coefficient between trait resilience and neuroticism was -0.41, whereas the correlation between resilience and conscientiousness was 0.42 [[130](#_ENREF_130)]. Evidence suggesting AAs are less likely to benefit from conscientious personality traits compared to other racial and ethnic groups, particularly in institutions founded on meritocracy because **conscientiousness is inconsistent with normative stereotypes about AA** might be linked to why non-neurotic personality and improvisation has a substantial stronger association to resilience compared to **conscientiousness in our sample [**[**133**](#_ENREF_133)**].** **While conscientiousness is clearly useful when it comes to fostering resilience, it is not the only factor to consider [**[**134**](#_ENREF_134)**].** Therefore, resilience training programs for YAAW may benefit from reviewing historical and cultural determinants of meritocracy in AAs in addition to training in planning, time management, and resource allocation.

**Other resources**

It’s worth noting the strongest non-psychological resources included absences of disease, meaning the women did not report a history of hypertension, high cholesterol, diabetes, or cancer. Although resilience is not merely the absence of physical and mental health disease outcomes, evidence suggests that disease absence is positively associated with resilience [[91](#_ENREF_91)]. This may be due to the relationship between resilience and positive psychology, i.e., if you think you are in good health, you are more likely to exhibit higher resilience. Critically, the chronic diseases assessed in our study often have long-term effects on health and require ongoing medication regimens, which may significantly impact self-rated health compared to a short-term infectious disease like (short-term) COVID-19.

**Nuanced findings**

The full model showed that inadequate sleep, defined as less than five hours of sleep per night, less knowledge of community resources, not having a four-year college degree and not engaging in Black community activism was significantly associated with high resilience in the fully adjusted model. None of these went in the direction we expected. Our findings may be nuanced due to the unique context of YAAW lives as well as other stressors and resources variables present. For example, **greater education usually translates to more resources, resulting in higher resilience. However, YAAW in our sample may still be psychologically recovering from college. This may have led to lower resilience levels in the group who reported a four-year college degree. Several studies have found that college decreases self-efficacy and self-esteem among YAAW, especially those who attend primarily white institutions [**[**21**](#_ENREF_21)**,** [**33**](#_ENREF_33)**,** [**135-138**](#_ENREF_135)**]. Accordingly, 58.98% of our sample experienced being unfairly discouraged by teachers or advisors from continuing their education at least once in their lives, followed by 39.65% who reported being discouraged two to three times. Moreover, we found that "[working] harder to prove them wrong" was the leading response to perceived discrimination. YAAW seeking resources (e.g., academic institutions, community centers) may experience discrimination and thereby experience negative effects on resilience, the opposite of expected. We also observed the negative effects of (unpaid) caretaking. An extension of fictive kinship in the AA community, caretaking traditionally contributes to social support and resilience. However, in a unique context (perhaps without adequate resources) it can become a stressor [**[**139**](#_ENREF_139)**]**.

**Conversely, YAAW may use physical health to accomplish tasks. This may explain why we see an inverse relationship between vital physical health resources (e.g. adequate sleep) and resilience.** For example, Springfield (2020) found that the relationship between resilience and sleep varied significantly by race and ethnicity, such that resilience and sleep demonstrated an inverse relationship in older AAW [[105](#_ENREF_105)]. According to the researchers, the women may have viewed themselves as resilient despite missing sleep. This is due to cultural factors, such as John Henryism and the Superwoman schema. These findings appear to play a role in our nuanced findings and require further research.

Additionally, resources may not always be accessible and effective, therefore not affecting perceived resilience. For example, knowledge of community resources demonstrated a significant positive association with resilience in the crude and age-adjusted models as expected. However, in the fully adjusted model considering stressors and other resources the direction of the observation changed - albeit with a small effect size. It could be that all things considered, knowing resources are available does not indicate accessibility or effectiveness. In the same way, although YAAW participate in Black activism it may not translate to collective resilience or the alleviation of stress, so it would follow that it will not increase resilience.

**Resilience**

**The brief resilience scale was used in this study. It is based on the unidimensional belief in oneself that they can be bounced back from stress [**[**12-14**](#_ENREF_12)**]. In contrast to multidimensional resource-based resilience, which assesses one's ability to overcome stress through utilization of resources [**[**15**](#_ENREF_15)**]. For an accurate assessment of unidimensional resilience, one must have confidence in their cognitive ability to adequately evaluate their environment in terms of stressors and resources. This type of resilience is grounded in healthy cognitive functioning. Thus, factors that heal mental damage (from trauma) and facilitate cognitive functioning may be key to understanding and intervening on resilience in YAAW. These include resources like the ones identified in our study findings such as : improvisation; non-neurotic personality; conscientious (with recognition of the way in which racism limits the benefits of meritocracy in AA); emotional regulation (not suppression); accessing effective community resources; listening to inspiring hip-hop; engagement in healthy and fruitful activism; gardening; finding positive culturally safe educational opportunities; paid caregiving; and understating the importance and value of rest. These variables and their pathways to increased resilience for health promotion require additional research.**

**Strengths and limitations**

**Limitations**

**Despite filling a significant gap in the literature by providing valuable evidence on the relationship between culturally informed resources and resilience in YAAW, our findings are not without limitations. Particularly in terms of design, measurement, and generalizability. Due to the cross-sectional nature of this study, we cannot determine causality since there is no temporal relationship. While we can examine associations, we cannot determine whether resilience affects resources or vice versa. Our interpretation is that YAAW with greater perceived access to (culturally informed) resources have higher levels of resilience (as measured by the Brief Resilience Scale) – our primary outcome.**

**The validity of several measures in YAAW women is unclear, therefore we cannot guarantee their accuracy. We often used measure that were adapted and shortened or subscales (i.e., the community stress measure is the subscale focused on viewing community violence). All measures were self-reported and subject to recall bias. Majority of our sample was overweight; they may have underreported their weight and other health behaviors, such as diet quality, to be more favorable. Finally, our participants were recruited via Qualtrics and professional survey takers, so they may have had a higher systemic error rate. Furthermore, our findings may not be generalizable to a broader sample of YAAW outside of Qualtrics market research panels or older AA women.**

**Implications for health equity and future directions**

We hope our findings will be used to promote health equity by generating studies that 1) emphasize resilient resources over deficit-based risk factors, thus combating stigma 2) build evidence on resilience resources that can be used to develop strength-based interventions to improve health outcomes in this group, 3) provide a narrative of the data which includes the perspective of YAAW authors with the lived experience which will diversify the perspective of the extant public health literature 4) expand resilience definition to include the unique context of white supremacy culture's continued survival. Provide culturally sensitive models of multidimensional resilience among AAs and diverse subpopulations, such as YAAW, and other racial and ethnic groups**.**

Next steps include more sophisticated analyses and local studies. To understand how resilience resources, mediate/moderate the relationship between unique stressors and CVD-related outcomes – as well as how resilience, resilience resources, and stressors interact – we plan to conduct structural equation modeling and latent variable analysis. Toward that end, we will also continue working with BWNJOY to inform this research.

**Conclusions**

In conclusion, our study underscores the impact of unique stressors, such as trauma and systemic discrimination, on the resilience of YAAW. The detrimental effects of these stressors on their mental and physical health necessitate a deeper exploration into psychological resources, particularly the role of neuroticism. Our findings suggest that neuroticism not only diminishes resilience but also intensifies the negative health outcomes associated with racial stress, thus emphasizing the need for targeted interventions that can mitigate these effects. Conversely, the strong association of improvisation with resilience reflects a legacy of adaptability and resourcefulness, characteristic of YAAW, which could be leveraged in designing culturally informed health promotion strategies. Additionally, our findings suggest the need for special attention to developing programs to bolster resilience in YAAW with existing comorbid conditions.

Taken together, these elements suggest a multifaceted approach to resilience, one that incorporates both psychological interventions with attention to potential unintended psychological effects of broader social support systems. By addressing these critical factors, we can foster a more supportive environment that enhances the health and well-being of YAAW, thereby contributing to the reduction of health disparities and promoting equitable health outcomes.

Biological: CVD related outcomes (hypertension, high cholesterol, diabetes, cancer, and diet quality (as measured by the WELL Diet Score), physical activity, smoking status, alcohol use, BMI), other health factors (depression, history COVID-19)

Physical: Access to technology, number of tech devices, social media use, knowledge of community resources, and cannabis use

Socioeconomics: Education, marital status, income, educational debt, government assistance

**Culturally-informed Non-Psychological**

**Resources**:

**Outcome(s):**

**Unique stressors:**

**Non psychological/psychological**

Perceived stress

Internalized racism

Everyday discrimination

Major life discrimination

Adverse childhood experiences

Community stressors (violence)

Food insecurity

Self-reported psychological resilience (BRS)

**Culturally-informed Psychological**

**Resources:**

Cognition: Spirituality, knowledge of diet and disease, improvisation, gardening, and hip-hop

Self and Personality: Self-efficacy for healthy eating, personality, resilient coping, and responses to unfair treatment

Social Relations: Social support, online social support, caregiving, and Black activism

**Figure 1**: Unique stressors, culturally-informed resources (non-psychological and psychological), and self-reported psychological resilience in N=512 AA women

**Table 1**: Stressors, resources (non-psychological and psychological) by self-reported psychological resilience from a representative sample of young AA women (N=512)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No.** | **Total**  **N=512** | ***Low BRS***  ***(1.0-2.9)***  N=182  (35.5%) | ***Medium BRS***  ***(3.0-4.2)***  N=298  (58.2%) | ***High BRS***  ***(4.3-5.0)***  N=32  (6.3%) |
| **POTENTIAL MODIFIERS** |  |  |  |  |  |
| Age, mean (SD) | 508 | 23.8 (4.8) | 23.3 (4.8) | 24.0 (4.8) | 25.8 (5.2) |
| Sexual orientation | 497 |  |  |  |  |
| *Heterosexual* |  | 333 (67.0) | 113 (63.5) | 193 (67.2) | 27 (84.4) |
| *Lesbian, gay, homosexual* |  | 38 (7.6) | 15 (8.4) | 22 (7.7) | 1 (3.1) |
| *Bisexual* |  | 87 (17.5) | 34 (19.1) | 51 (17.8) | 2 (6.3) |
| *None of these* |  | 39 (7.8) | 16 (9.0) | 21 (7.3) | 2 (6.3) |
| Enrolled in college | 491 | 240 (48.9) | 101 (57.1) | 125 (44.3) | 14 (43.8) |
| **STRESSORS** |  |  |  |  |  |
| **Non-psychological/psychological** |  |  |  |  |  |
| Perceived stress, mean (SD)  A higher score indicated greater perceived stress  (0-16) | 509 | 7.7 (2.8) | 8.5 (2.3) | 7.5 (2.7) | 4.2 (3.4) |
| Everyday Discrimination Scale, mean (SD)  A higher score indicated more instances of experienced discrimination Chronicity-based scoring: (0-1300) | 511 | 181 (237) | 207 (188) | 173 (261) | 104 (242) |
| Major Experiences of Discrimination, mean (SD)  A higher score indicated more experiences of significant acts of discrimination in the participants' lifetime (0-12) | 512 | 6.8 (5.5) | 8.2 (5.4) | 6.4 (5.5) | 2.4 (4.3) |
| Adverse childhood experiences, mean (SD)  A higher score indicated more adverse childhood experiences  (0-8) | 482 | 2.6 (2.3) | 3.0 (2.2) | 2.5 (2.4) | 0.9 (1.6) |
| Internalized Racism, mean (SD)  Higher scores indicated greater internalized racism  (1-5) | 511 | 2.8 (0.7) | 3.0 (0.7) | 2.8 (0.7) | 2.6 (0.7) |
| Community stressors, mean (SD)  A higher score indicated greater community violence  (0-5) | 512 | 1.2 (1.0) | 1.4 (1.0) | 1.1 (1.0) | 0.5 (0.8) |
| Food insecurity, n (%) | 512 | 322 (62.9) | 126 (69.2) | 185 (62.1) | 11 (34.4) |
| **RESOURCES** |  |  |  |  |  |
| **Non-psychological** |  |  |  |  |  |
| **Biological** |  |  |  |  |  |
| Motherhood  Biological children in household, n (%) | 512 | 241 (47.1) | 85 (46.7) | 144 (48.3) | 12 (37.5) |
| Unpaid caregiving, n (%) | 512 | 227 (44.3) | 96 (52.7) | 118 (39.6) | 13 (40.6) |
| *CVD related outcomes* |  |  |  |  |  |
| Well Diet Score, mean (SD)  Range 0-120  A higher score indicates better diet quality | 512 | 55.1 (13.3) | 53.7 (11.8) | 55.8 (14.0) | 56.8 (14.6) |
| METS score, mean (SD) | 512 | 34.2 (27.6) | 34.0 (23.2) | 33.9 (29.0) | 37.5 (36.6) |
| Current smoker, n (%) | 505 | 77 (15.2) | 33 (18.2) | 43 (14.7) | 1 (3.1) |
| > 1 alcoholic drink per day, n (%) | 510 | 11 (2.2) | 2 (1.1) | 8 (2.7) | 1 (3.1) |
| Inadequate sleep (<6 hours/night), n (%)  ) | 511 | 86 (16.8) | 26 (14.4) | 57 (19.1) | 3 (9.4) |
| BMI (kg/m²), mean (SD) | 484 | 31.0 (10.5) | 32.0 (11.5) | 30.6 (10.0) | 28.8 (8.9) |
| Hypertension, n (%) | 507 | 95 (18.7) | 52 (28.7) | 43 (14.6) | 0 (0.0) |
| High cholesterol, n (%) | 507 | 95 (18.7) | 49 (27.4) | 45 (15.2) | 1 (3.2) |
| Diabetes, n (%) | 506 | 70 (13.8) | 38 (21.3) | 31 (10.5) | 1 (3.1) |
| Cancer, n (%) |  |  |  |  |  |
| Absence of (biometric) disease, n (%) | 504 | 333 (66.1) | 94 (52.5) | 211 (71.5) | 28 (93.3) |
| Depression (PHQ-2), n (%) | 505 | 192 (38.0) | 80 (44.4) | 107 (36.5) | 5 (15.6) |
| Other health factors |  |  |  |  |  |
| Prior COVID-19 infection, n (%) n | 508 | 102 (20.1) | 49 (27.2) | 52 (17.6) | 1 (3.1) |
| **Physical** |  |  |  |  |  |
| Access to technology, n (%) |  |  |  |  |  |
| *Laptop* | 512 | 298 (58.2) | 94 (51.6) | 182 (61.1) | 22 (68.8) |
| *Smartphone* | 512 | 473 (92.4) | 159 (87.4) | 282 (94.6) | 32 (100.0) |
| *Tablet* | 512 | 234 (45.7) | 75 (41.2) | 143 (48.0) | 16 (50.0) |
| Number of devices, mean (SD) | 512 | 2.0 (0.9) | 1.8 (0.8) | 2.0 (0.9) | 2.2 (0.9) |
| No cannabis use, n (%) | 512 | 244 (47.7) | 69 (37.9) | 154 (51.7) | 21 (65.6) |
| **Knowledge of community resources, mean (SD)**  Higher score indicated greater empowerment  (1-7) | 511 | 4.0 (1.4) | 3.8 (1.2) | 4.1 (1.5) | 4.4 (1.8) |
| **Socio-economic status** |  |  |  |  |  |
| Education level, n (%) |  |  |  |  |  |
| *≤ HS or GED* | 512 | 178 (34.8) | 53 (29.1) | 110 (36.9) | 15 (46.9) |
| *Some college* | 512 | 171 (33.4) | 62 (34.1) | 105 (35.2) | 4 (12.5) |
| *College degree* | 512 | 163 (31.8) | 67 (36.8) | 83 (27.9) | 13 (40.6) |
| Employment, n (%) |  |  |  |  |  |
| *Full time* | 511 | 215 (42.1) | 85 (46.7) | 111 (37.4) | 19 (59.4) |
| *Part time* | 511 | 118 (23.1) | 41 (22.5) | 74 (24.9) | 3 (9.4) |
| *Self employed* | 511 | 52 (10.2) | 16 (8.8) | 31 (10.4) | 5 (15.6) |
| *Homemaker* | 511 | 12 (2.3) | 2 (1.1) | 10 (3.4) | 0 (0.0) |
| *Unemployed* | 511 | 60 (11.7) | 23 (12.6) | 34 (11.4) | 3 (9.4) |
| *Retired* | 511 | 5 (1.0) | 4 (2.2) | 1 (0.3) | 0 (0.0) |
| *Student* | 511 | 76 (14.9) | 26 (14.3) | 47 (15.8) | 3 (9.4) |
| *Disabled* | 511 | 5 (1.0) | 0 (0.0) | 5 (1.7) | 0 (0.0) |
| Married/married-like relationship, n (%) |  | 126 (24.6) | 48 (26.4) | 70 (23.5) | 8 (25.0) |
| Single, n (%) | 512 | 371 (72.5) | 125 (68.7) | 222 (74.5) | 24 (75.0) |
| Divorced, n (%) | 512 | 7 (1.4) | 4 (2.2) | 3 (1.0) | 0 (0.0) |
| Widowed, n (%) | 512 | 8 (1.6) | 5 (2.7) | 3 (1.0) | 0 (0.0) |
| Biological children in household, n (%) | 512 | 241 (47.1) | 85 (46.7) | 144 (48.3) | 12 (37.5) |
| Government assistance, n (%) | 508 | 328 (64.6) | 129 (71.7) | 184 (62.0) | 15 (48.4) |
| **Psychological resources** |  |  |  |  |  |
| **Cognition** |  |  |  |  |  |
| Spirituality |  |  |  |  |  |
| *Attends religious services once a week or less, n (%)* | 512 | 347 (67.8) | 129 (70.9) | 196 (65.8) | 22 (68.8) |
| *Prays/meditates how often?*  *n (%)* | 512 | 425 (83.0) | 151 (83.0) | 247 (82.9) | 27 (84.4) |
| Knowledge of diet–disease link, mean (SD)  A higher score indicated that the participant perceived a stronger link between diet and the given disease  (1-5) | 509 | 2.6 (1.0) | 2.8 (1.0) | 2.5 (1.0) | 2.0 (1.0) |
| Improvisation, mean (SD)  A higher score indicated greater endorsement of improvisation  (-3 to 3) | 511 | 0.7 (1.2) | 0.3 (0.9) | 0.8 (1.2) | 1.8 (1.2) |
| Gardening, mean (SD)  A higher score frequency of gardening.  (1-7) | 512 | 1.7 (1.8) | 1.8 (1.6) | 1.7 (1.9) | 1.3 (2.1) |
| Hip Hop, mean (SD)  A higher score indicated greater endorsement of hip-hop music  (1-7) | 509 | 19.7 (5.2) | 18.8 (4.9) | 19.9 (5.1) | 23.6 (6.0) |
| **Self & Personality** |  |  |  |  |  |
| Self-efficacy for cooking/eating fruits/vegetables, mean (SD)  A higher score indicated greater efficacy for cooking and eating healthy foods  (1-5) | 506 | 3.3 (0.9) | 3.2 (0.8) | 3.4 (0.9) | 3.8 (1.1) |
| Self-efficacy for cooking techniques/meal prep, mean (SD)  A higher score indicated greater confidence food preparation skills  (1-5) | 510 | 3.5 (0.8) | 3.4 (0.7) | 3.6 (0.8) | 3.9 (0.9) |
| Big Five Personality, mean (SD)    A higher score indicated greater alignment with the following personality types  (1-5) |  |  |  |  |  |
| *Extroversion* | 508 | 2.9 (0.8) | 2.9 (0.9) | 2.9 (0.8) | 2.9 (0.9) |
| *Agreeableness* | 508 | 3.4 (0.9) | 3.2 (0.8) | 3.4 (0.8) | 4.1 (0.9) |
| *Conscientious* | 509 | 3.4 (0.8) | 3.2 (0.7) | 3.4 (0.7) | 4.2 (0.9) |
| *Neurotic* | 509 | 3.1 (0.8) | 3.4 (0.8) | 3.0 (0.8) | 2.1 (0.8) |
| *Openness* | 508 | 3.2 (0.7) | 3.2 (0.8) | 3.2 (0.7) | 3.4 (0.8) |
| Resilient Coping, mean (SD)  A higher score indicated a greater ability to recover from stressful situations. | 511 | 14.7 (3.4) | 13.9 (3.0) | 14.9 (3.5) | 17.7 (2.5) |
| **Response to unfair treatment,** n (%) |  |  |  |  |  |
| *Tried to do something about it* | 512 | 303 (59.2) | 109 (59.9) | 176 (59.1) | 18 (56.3) |
| *Accepted it as a fact of life* |  | 281 (54.9) | 95 (52.2) | 172 (57.7) | 14 (43.8) |
| *Worked harder to prove them wrong* |  | 359 (70.1) | 124 (68.1) | 211 (70.8) | 24 (75.0) |
| *Realized that you brought it on yourself* |  | 151 (29.5) | 65 (35.7) | 82 (27.5) | 4 (12.5) |
| *Talked to someone about who you were feeling* |  | 299 (58.4) | 107 (58.8) | 172 (57.7) | 20 (62.5) |
| *Expressed anger or got mad* |  | 295 (57.6) | 114 (62.6) | 172 (57.7) | 9 (28.1) |
| *Prayed about the situation* |  | 327 (64.1) | 112 (61.5) | 192 (64.9) | 23 (71.9) |
| **Black Identity Classification Scale, mean (SD)**  A higher score indicated greater endorsement of Black identity  (0-10) | 509 | 4.6 (1.1) | 4.4 (0.9) | 4.6 (1.2) | 5.1 (1.0) |
| **Hairstyle, n (%)** | 511 |  |  |  |  |
| Relaxed |  | 41 (8.0) | 12 (6.6) | 23 (7.7) | 6 (18.8) |
| Hair weaves | 511 | 52 (10.2) | 20 (11.0) | 30 (10.1) | 2 (6.3) |
| Hot combed | 511 | 49 (9.6) | 23 (12.6) | 24 (8.1) | 2 (6.3) |
| Braided | 511 | 146 (28.6) | 52 (28.6) | 88 (29.6) | 6 (18.8) |
| Locked | 511 | 33 (6.5) | 12 (6.6) | 20 (6.7) | 1 (3.1) |
| Natural | 511 | 190 (37.2) | 63 (34.6) | 112 (37.7) | 15 (46.9) |
| **Benevolent childhood experiences scale, mean (SD)**  A higher score indicated a greater number of favorable childhood experiences  (0-10) | 507 | 6.5 (3.1) | 6.0 (2.9) | 6.6 (3.2) | 8.8 (1.6) |
| **Control of beliefs (mean (SD)**  A higher score indicates less control of beliefs  0-8 | 508 | 3.7 (1.6) | 4.1 (1.4) | 3.6 (1.5) | 2.0 (1.8) |
| **Social Relations** |  |  |  |  |  |
| Social Support, mean (SD)  A higher score perceived social support  0-5 | 510 | 1.7 (0.9) | 1.7 (0.9) | 1.6 (1.0) | 1.7 (0.6) |
| Online Social Support, mean (SD)  A higher score indicates more online social support  (0-36) | 511 | 18.8 (6.4) | 19.4 (5.4) | 18.4 (6.8) | 18.8 (7.7) |
| Social media apps used, n (%) |  |  |  |  |  |
| Texting | 511 | 490 (95.9) | 171 (94.0) | 287 (96.6) | 32 (100.0) |
| Facebook | 510 | 404 (79.2) | 146 (80.2) | 230 (77.7) | 28 (87.5) |
| Instagram | 511 | 465 (91.0) | 172 (94.5) | 264 (88.9) | 29 (90.6) |
| Twitter | 510 | 335 (65.7) | 130 (71.4) | 187 (63.2) | 18 (56.3) |
| YouTube | 509 | 474 (93.1) | 172 (95.0) | 275 (92.9) | 27 (84.4) |
| SnapChat | 509 | 420 (82.5) | 155 (85.2) | 244 (82.7) | 21 (65.6) |
| TikTok | 511 | 410 (80.2) | 152 (83.5) | 236 (79.5) | 22 (68.8) |
| Pinterest | 511 | 353 (69.1) | 141 (77.5) | 194 (65.3) | 18 (56.3) |
| Dating sites | 510 | 186 (36.5) | 81 (44.5) | 95 (32.1) | 10 (31.3) |
| **Black community activism orientation scale, mean (SD)**  Higher scores indicate a more positive orientation toward that type of Black community activism and a greater intention of participating in that action in the future.  (1-5) | 510 | 3.1 (0.9) | 3.1 (0.8) | 3.1 (1.0) | 3.2 (1.0) |

**Table 2**: Associations between stressors, resources (non-psychological and psychological), and self-reported psychological resilience from young AA women. Note, each row in the Crude and Age-adjusted columns corresponds to an individual fitted model. Subsequent columns represent the model selected from elastic nets regression analysis that included age as a candidate covariate.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Crude** | **Age Adjusted** | **Model 1**  **EN Stressors** | **Model 2**  **EN Stressors and Non-psychological resources** | **Model 3**  **EN Stressors and Psychological resources** | **Model 4 EN**  **Full Model** |
|  | **Standardized Beta**  **(p-value)** | | | **Standardized Beta (Elastic Nets)** | | |
| Age | 0.10 (0.03) |  | 0.04 | 0.02 |  |  |
| **STRESSORS** |  |  |  |  |  |  |
| **Non-psychological** |  |  |  |  |  |  |
| Perceived stress | -0.38 (<0.001) | -0.37 (<0.001) | -0.33 | -0.32 | -0.14 | -0.16 |
| Everyday Discrimination Scale | -0.15 (<0.001) | -0.14 (0.002) |  |  |  |  |
| Major Experiences of Discrimination | -0.26 (<0.001) | -0.24 (<0.001) | -0.10 | -0.07 | -0.03 | -0.01 |
| Adverse childhood experiences | -0.19 (<0.001) | -0.18 (<0.001) | -0.04 | -0.03 | -0.03 | -0.03 |
| Internalized Racism | -0.13 (0.003) | -0.13 (0.003) | -0.06 | -0.08 | -0.04 | -0.06 |
| Community stressors | -0.22 (<0.001) | -0.21 (<0.001) | -0.03 | -0.01 | -0.03 | -0.02 |
| Food insecurity | -0.16 (<0.001) | -0.15 (<0.001) | -0.05 | -0.02 |  |  |
| **RESOURCES** |  |  |  |  |  |  |
| **Non-psychological** |  |  |  |  |  |  |
| **Biological** |  |  |  |  |  |  |
| Absence of disease | 0.20 (<0.001) | 0.19 (<0.001) |  | 0.09 |  | 0.04 |
| Prior COVID-19 infection | -0.10 (0.028) | -0.09 (0.05) |  |  |  |  |
| Depression (PHQ-2) | -0.14 (0.001) | -0.13 (0.004) |  |  |  |  |
| Chronic disease (i.e. CVD) prevention guidelines |  |  |  |  |  |  |
| Well Diet Score | 0.08  (0.09) | 0.09 (0.05) |  |  |  |  |
| Current smoker | -0.07 (0.13) | -0.08 (0.08) |  |  |  |  |
| Inadequate sleep (<6 hours / night) | -0.02 (0.63) | -0.02 (0.61) |  |  |  | 0.01 |
| > 1 alcoholic drink per day | 0.02  (0.69) | 0.01  (0.84) |  | 0.02 |  |  |
| METS score | 0.06  (0.20) | 0.06  (0.15) |  | 0.07 |  |  |
| **Physical** |  |  |  |  |  |  |
| Access to technology | 0.13 (0.005) | 0.11 (0.018) |  |  |  |  |
| No cannabis use | 0.14 (0.002) | 0.13 (0.003) |  |  |  |  |
| **Knowledge of community resources** | 0.12 (0.006) | 0.11 (0.012) |  |  |  | -0.03 |
| **Socio-economic status** |  |  |  |  |  |  |
| College degree | -0.04 (0.32) | -0.07 (0.12) |  | -0.04 |  | -0.02 |
| Married/married-like relationship | 0.02  (0.58) | 0.01  (0.86) |  |  |  |  |
| Biological children in household | -0.03 (0.50) | -0.05 (0.31) |  |  |  |  |
| Unpaid caregiving | -0.09 (0.05) | -0.08 (0.08) |  | -0.02 |  | -0.02 |
| Government assistance (e.g., Link, Covid rent relief) | -0.11 (0.014) | -0.10 (0.023) |  |  |  |  |
| **Psychological resources** |  |  |  |  |  |  |
| **Cognition** |  |  |  |  |  |  |
| Religion and Spirituality |  |  |  |  |  |  |
| *Attends religious services* | -0.02 (0.59) | -0.02 (0.68) |  |  |  |  |
| *Prays/meditates* | 0.02  (0.71) | 0.02  (0.64) |  |  |  |  |
| Knowledge of diet–disease link | -0.15 (<0.001) | -0.13 (0.003) |  |  |  |  |
| Improvisation | 0.40 (<0.001) | 0.39 (<0.001) |  |  | 0.22 | 0.23 |
| Gardening | -0.07 (0.12) | -0.05 (0.26) |  |  |  | 0.02 |
| Hip Hop | 0.20 (<0.001) | 0.19 (<0.001) |  |  | 0.03 | 0.03 |
| **Self & Personality** |  |  |  |  |  |  |
| Self-efficacy for cooking/eating fruits/vegetables | 0.17 (<0.001) | 0.17 (<0.001) |  |  |  |  |
| Self-efficacy for cooking techniques/meal prep | 0.19 (<0.001) | 0.17 (<0.001) |  |  |  |  |
| Big Five Personality |  |  |  |  |  |  |
| *Extroversion* | 0.02  (0.64) | 0.01  (0.81) |  |  |  |  |
| *Agreeableness* | 0.25 (<0.001) | 0.23 (<0.001) |  |  |  |  |
| *Conscientious* | 0.30 (<0.001) | 0.28 (<0.001) |  |  | 0.09 | 0.08 |
| *Neurotic* | -0.39 (<0.001) | -0.38 (<0.001) |  |  | -0.23 | -0.22 |
| *Openness* | 0.04  (0.39) | 0.03  (0.51) |  |  |  |  |
| Response to unfair treatment |  |  |  |  |  |  |
| Tried to do something about it | 0.01  (0.82) | 0.01  (0.84) |  |  |  |  |
| Accepted it as a fact of life | 0.02  (0.62) | 0.03  (0.45) |  |  |  |  |
| Worked harder to prove them wrong | 0.03  (0.53) | 0.03  (0.57) |  |  |  |  |
| Realized that you brought it on yourself | -0.13 (0.004) | -0.11 (0.011) |  |  |  |  |
| Talked to someone about who how were feeling | -0.02 (0.64) | -0.03 (0.54) |  |  |  |  |
| Expressed anger or got mad | -0.15 (<0.001) | -0.14 (0.002) |  |  | -0.03 | -0.04 |
| Prayed about the situation | 0.05  (0.25) | 0.04  (0.37) |  |  |  |  |
| Black Identity Classification | 0.12 (0.007) | 0.11 (0.016) |  |  |  |  |
| Benevolent childhood experiences | 0.23 (<0.001) | 0.22 (<0.001) |  |  |  |  |
| Natural Hairstyle | 0.05 (0.28) | 0.03  (0.48) |  |  |  |  |
| Control of beliefs | -0.35 (<0.001) | -0.34 (<0.001) |  |  |  |  |
| **Social Relations** |  |  |  |  |  |  |
| Social support | -0.02 (0.69) | -0.01 (0.82) |  |  |  |  |
| Online social support | -0.07 (0.13) | -0.06 (0.15) |  |  |  |  |
| **Black community activism** | 0.02 (0.71) | 0.03  (0.53) |  |  | -0.02 | -0.02 |

Resilient coping not included in the models because of its collinearity with resilience as measured by the brief resilience scale

No (biometric) disease variable does not include BMI to keep a high sample size.

**Plots**

All variables

**Figure 2:** **Ranking of variable importance in Elastic Net model using all variables**

**A graph with red and blue dots

Description automatically generated**

**REFERENCES:**

1. Nagata, D.K., J.H. Kim, and J.P. Gone, *Intergenerational Transmission of Ethnoracial Historical Trauma in the United States.* Annual Review of Clinical Psychology, 2024. **20**.

2. Henderson, Z.R., et al., *Conceptualizing healing through the African American experience of historical trauma.* American journal of orthopsychiatry, 2021. **91**(6): p. 763.

3. Jackson, L., Z. Jackson, and F. Jackson, *Intergenerational resilience in response to the stress and trauma of enslavement and chronic exposure to institutionalized racism.* Journal of Clinical Epigenetics, 2018. **4**(3): p. 15.

4. Johnson, D.J., J. Yoon, and S.H. House, *Resistance and resilience in African American and Latinx women college students in the context of ethno-gendered racism.* Research in Human Development, 2022. **19**(3-4): p. 123-142.

5. Erving, C.L., L.A. Satcher, and Y. Chen, *Psychologically resilient, but physically vulnerable? Exploring the psychosocial determinants of African American women’s mental and physical health.* Sociology of Race and Ethnicity, 2021. **7**(1): p. 116-133.

6. Brody, G.H., et al., *Persistence of skin-deep resilience in African American adults.* Health Psychology, 2020. **39**(10): p. 921.

7. Ehrlich, K.B., et al., *Socioeconomic disadvantage and high‐effort coping in childhood: evidence of skin‐deep resilience.* Journal of Child Psychology and Psychiatry, 2024. **65**(3): p. 358-364.

8. Woods-Giscombe, C.L., et al., *A scoping review of the concept of resilience among African American women.* Archives of Psychiatric Nursing, 2023. **46**: p. 107-120.

9. Shaikh, A. and C. Kauppi, *Deconstructing resilience: Myriad conceptualizations and interpretations.* 2010.

10. Rutter, M., *Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder.* The British journal of psychiatry, 1985. **147**(6): p. 598-611.

11. Garmezy, N., *The study of competence in children at risk for severe psychopathology.* 1974.

12. Smith, B.W., et al., *The brief resilience scale: assessing the ability to bounce back.* International journal of behavioral medicine, 2008. **15**: p. 194-200.

13. Smith, B.W., et al., *Brief resilience scale (BRS)*, in *Handbook of Assessment in Mindfulness Research*. 2023, Springer. p. 1-19.

14. Smith, B.W., et al., *Resilience as the ability to bounce back from stress: A neglected personal resource?* The Journal of Positive Psychology, 2010. **5**(3): p. 166-176.

15. Ye, Y.-C., et al., *The difference between the Connor–Davidson Resilience Scale and the Brief Resilience Scale when assessing resilience: confirmatory factor analysis and predictive effects.* Global Mental Health, 2022. **9**: p. 339-346.

16. Satterwhite, A.K. and A.F. Luchner, *Exploring the Relationship among Perceived Resilience, Dependency, and Self-Criticism: The Role of Culture and Social Support.* North American Journal of Psychology, 2016. **18**(1).

17. Xie, Q. and D.F.K. Wong, *Culturally sensitive conceptualization of resilience: A multidimensional model of Chinese resilience.* Transcultural Psychiatry, 2020. **58**(3): p. 323-334.

18. Bühler, J.L., et al., *Collective stressors affect the psychosocial development of young adults.* Social Psychological and Personality Science, 2023. **14**(6): p. 708-726.

19. Taylor, D. and D. Richards, *Triple jeopardy: Complexities of racism, sexism, and ageism on the experiences of mental health stigma among young Canadian Black Women of Caribbean descent.* Frontiers in Sociology, 2019. **4**: p. 43.

20. Hendrix, K.G., *There are no awards for surviving racism, sexism, and ageism in the academy: Contemplations of a senior faculty member.* Communication and Critical/Cultural Studies, 2021. **18**(3): p. 246-262.

21. Smith-Tran, A., *“There’s the Black Woman Thing, and There’s the Age Thing”: Professional Black Women on the Downsides of “Black Don’t Crack” and Strategies for Confronting Ageism at Work.* Sociological Perspectives, 2023. **66**(3): p. 419-433.

22. Crenshaw, K. *Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine (pp. 139–168)*. in *University of Chicago legal forum*. 1989.

23. Jones, S.C.T., et al., *From “crib to coffin”: Navigating coping from racism-related stress throughout the lifespan of Black Americans.* American Journal of Orthopsychiatry, 2020. **90**(2): p. 267-282.

24. Adams, D.M. and E.H. Lott, *Black women: Then and now*, in *WE Matter!* 2021, Routledge. p. 9-28.

25. Moody, A.T. and J.A. Lewis, *Gendered racial microaggressions and traumatic stress symptoms among Black women.* Psychology of Women Quarterly, 2019. **43**(2): p. 201-214.

26. Willis, H.A., et al., *The associations between internalized racism, racial identity, and psychological distress.* Emerging Adulthood, 2021. **9**(4): p. 384-400.

27. Jones, S.C., et al., *From “crib to coffin”: Navigating coping from racism-related stress throughout the lifespan of Black Americans.* American Journal of Orthopsychiatry, 2020. **90**(2): p. 267.

28. Dorvil, S., et al., *Experiences of adverse childhood events and racial discrimination in relation to depressive symptoms in college students.* College student journal, 2020. **54**(3): p. 295-308.

29. Gamba, R., et al., *Racial discrimination is associated with food insecurity, stress, and worse physical health among college students.* BMC public health, 2024. **24**(1): p. 883.

30. Bowen, S., S. Elliott, and A. Hardison‐Moody, *The structural roots of food insecurity: How racism is a fundamental cause of food insecurity.* Sociology Compass, 2021. **15**(7): p. e12846.

31. Biggart, A. and A. Walther, *Coping with yo-yo-transitions. Young adults' struggle for support, between family and state in comparative perspective*, in *A New Youth?* 2016, Routledge. p. 41-62.

32. Settersten Jr, R.A., F.F. Furstenberg, and R.G. Rumbaut, *On the frontier of adulthood: Theory, research, and public policy*. 2019: University of Chicago Press.

33. Whitehead, K.W. and G. Bledsoe, *Nevertheless, They Persisted: Black Women and the Fire Within Them.* Black History Bulletin, 2019. **82**(2): p. 12-18.

34. Combs, R.L., *Black Lives Matter, Then and Now*. 2015, JSTOR.

35. Mathews, T.J. and G.S. Johnson, *Skin complexion in the twenty-first century: The impact of colorism on African American women.* Race, Gender & Class, 2015. **22**(1-2): p. 248-274.

36. Scott, K.D., *Repurposing Black women’s strength and normalizing “strong sista self-care” on social media.* Women's Studies in Communication, 2021. **44**(4): p. 484-490.

37. Haynes-Thoby, L., J.F. Casado Pérez, and J. Bryan, *It’s about Time That We Listened: Black Women’s Resilience in the Face of Intimate Partner Violence.* Journal of Couple & Relationship Therapy, 2023. **22**(2): p. 130-149.

38. Owens, D.C., *Listening to Black women saves Black lives.* The Lancet, 2021. **397**(10276): p. 788-789.

39. Byway, H.T., *About Harriet Tubman.* Accessed July, 2022. **23**.

40. Robnett, B., *African-American women in the civil rights movement, 1954-1965: Gender, leadership, and micromobilization.* American Journal of Sociology, 1996. **101**(6): p. 1661-1693.

41. Garza, A., O. Tometi, and P. Cullors, *A herstory of the# BlackLivesMatter movement.* 2014.

42. Crenshaw, K.W., et al., *Say her name: Resisting police brutality against black women.* 2015.

43. Levy, R.e. and M. Mattsson, *The effects of social movements: Evidence from# MeToo.* Available at SSRN 3496903, 2023.

44. Roumell, E.A. and A.D. James‐Gallaway, *Social movements, community education, and the fight for racial justice: Black women and social transformation.* New Directions for Adult and Continuing Education, 2021. **2021**(170): p. 21-31.

45. Ireland, D.T., et al., *(Un) hidden figures: A synthesis of research examining the intersectional experiences of Black women and girls in STEM education.* Review of Research in Education, 2018. **42**(1): p. 226-254.

46. Childs, K.M., *“The Shade of It All”: How Black Women Use Instagram and YouTube to Contest Colorism in the Beauty Industry.* Social Media+ Society, 2022. **8**(2): p. 20563051221107634.

47. Matsuzaka, S., L.R. Avery, and A.G. Stanton, *Black Women’s Social Media Use Integration and Social Media Addiction.* Social Media+ Society, 2023. **9**(1): p. 20563051221148977.

48. Robinson, T. and B. Williams, *Still retaining each other: Black women building community through social media and other digital platforms*, in *Investing in the educational success of Black women and girls*. 2021, Routledge. p. 258-275.

49. Inc., G., *Black women helping close the gender gap as the fastest growing group of entrepreneurs*. 2023: GoDaddy Venture Forward.

50. Mason, Q.M., *# BlackGirlMagic as resistant imaginary.* Hypatia, 2021. **36**(4): p. 706-724.

51. Taylor, K.-Y., *Until Black women are free, none of us will be free.* The New Yorker, 2020. **20**.

52. Shelton, S.A., *From invisible, to ho, to magic: A narrative examination of the ways that literacies disenfranchise and empower Black girls.* Journal of Black Sexuality and Relationships, 2017. **4**(1): p. 3-23.

53. Lopez Lopez, L. and Nikey, *‘Black girl magic, y’all can’t stand it, y’all can’t ban it’: Black girl curated curricula unsettling the conventional reason of school.* Race Ethnicity and Education, 2021. **24**(2): p. 229-244.

54. Perry, A.M., M. Donoghoe, and H. Stephens, *Who is driving Black business growth? Insights from the latest data on Black-owned businesses.* Brookings (May 24). <https://www>. brookings. edu/articles/who-is-driving-black-business-growth-insights-from-the-latest-data-on-black-owned-businesses, 2023.

55. Jason, K., S. Richardson, and K.N. Dennis, *Relieving the burden of self-reliance: Centering the experiences of Black women graduate students in predominantly White institutions.* Journal of African American Women and Girls in Education, 2023. **3**(1): p. 8-33.

56. Bishop, J. *Level up: The success factors in advancing african-american women into the c-suite in corporate America*. in *The Tenth International Conference on Engaged Management Scholarship*. 2020.

57. Jones, S.M., *Not by magic: Perspectives on creating and facilitating outreach programs for Black girls and women.* Journal of African American Women and Girls in Education, 2021. **1**(1).

58. Caldwell, J. and F.L. Jackson, *Evolutionary perspectives on african North American genetic diversity: Origins and prospects for future investigations.* Evolutionary Anthropology: Issues, News, and Reviews, 2021. **30**(4): p. 242-252.

59. Ely, B., et al., *African-American mitochondrial DNAs often match mtDNAs found in multiple African ethnic groups.* BMC biology, 2006. **4**: p. 1-14.

60. Nicolas, M., *Intergenerational Transmission of Resilience Across Three Generations of African American Women*. 2022: Barry University.

61. Cann, R.L., M. Stoneking, and A.C. Wilson, *Mitochondrial DNA and human evolution.* Nature, 1987. **325**(6099): p. 31-36.

62. Kalinowski, J., J.Y. Taylor, and T.M. Spruill, *Why are young black women at high risk for cardiovascular disease?* Circulation, 2019. **139**(8): p. 1003-1004.

63. Harris, L.K., D.C. Berry, and Y.I. Cortes, *Psychosocial factors related to Cardiovascular Disease Risk in Young African American Women: a systematic review.* Ethn Health, 2022. **27**(8): p. 1806-1824.

64. Johnson, A.J., et al., *Racism, shame, and stress reactivity among young black women.* Stress and Health, 2022. **38**(5): p. 1001-1013.

65. Javed, Z., et al., *Race, Racism, and Cardiovascular Health: Applying a Social Determinants of Health Framework to Racial/Ethnic Disparities in Cardiovascular Disease.* Circ Cardiovasc Qual Outcomes, 2022. **15**(1): p. e007917.

66. Churchwell, K., et al., *Call to action: structural racism as a fundamental driver of health disparities: a presidential advisory from the American Heart Association.* Circulation, 2020. **142**(24): p. e454-e468.

67. Braga, L.L., M.F. Mello, and J.P. Fiks, *Transgenerational transmission of trauma and resilience: a qualitative study with Brazilian offspring of Holocaust survivors.* BMC psychiatry, 2012. **12**: p. 1-11.

68. Felix, A.S., et al., *Stress, resilience, and cardiovascular disease risk among black women: Results from the women’s health initiative.* Circulation: Cardiovascular Quality and Outcomes, 2019. **12**(4): p. e005284.

69. Felix, A.S., et al., *The Modifying Role of Resilience on Allostatic Load and Cardiovascular Disease Risk in the Jackson Heart Study.* J Racial Ethn Health Disparities, 2023. **10**(5): p. 2124-2135.

70. Ghulam, A., et al., *Psychological Resilience, Cardiovascular Disease, and Metabolic Disturbances: A Systematic Review.* Front Psychol, 2022. **13**: p. 817298.

71. Love, M.F., et al., *Resilience and associated psychological, social/cultural, behavioural, and biological factors in patients with cardiovascular disease: a systematic review.* Eur J Cardiovasc Nurs, 2021. **20**(6): p. 604-617.

72. Islam, S.J., et al., *Cardiovascular risk and resilience among Black adults: Rationale and design of the MECA Study.* Journal of the American Heart Association, 2020. **9**(9): p. e015247.

73. Kim, J.H., et al., *Individual Psychosocial Resilience, Neighborhood Context, and Cardiovascular Health in Black Adults: A Multilevel Investigation From the Morehouse-Emory Cardiovascular Center for Health Equity Study.* Circ Cardiovasc Qual Outcomes, 2020. **13**(10): p. e006638.

74. Lloyd, C.M., et al., *Reimagining Black families’ cultural assets can inform policies and practices that enhance their well-being.* Child Trends, 2022.

75. Duke, M.P., et al., *Of ketchup and kin: Dinnertime conversations as a major source of family knowledge, family adjustment, and family resilience.* The Emory Center for Myth and Ritual in American Life, Working Paper, 2003(26).

76. Black, K. and M. Lobo, *A conceptual review of family resilience factors.* J Fam Nurs, 2008. **14**(1): p. 33-55.

77. Reece, C.D., *Separated By Geographical Location And Lineage: A Case Study Design Using Qualitative Methodology In Research On Hope, Love, And Resilience During A Family Reunion.* 2023.

78. Wattick, R.A., R.L. Hagedorn, and M.D. Olfert, *Enhancing college student recovery outcomes through nutrition and culinary therapy: mountaineers for recovery and resilience.* Journal of nutrition education and behavior, 2020. **52**(3): p. 326-329.

79. Sia, A., et al., *The impact of gardening on mental resilience in times of stress: A case study during the COVID-19 pandemic in Singapore.* Urban For Urban Green, 2022. **68**: p. 127448.

80. Fenn, N., et al., *Examining the relationship between civic engagement and mental health in young adults: a systematic review of the literature.* Journal of Youth Studies, 2022: p. 1-30.

81. Galvez, Z. and B. Crouch, *Developing resilience with the improviser’s mindset: Getting people out of their stuck places.* Play and Creativity in Psychotherapy (Norton Series on Interpersonal Neurobiology), 2017: p. 309-337.

82. Lombardi, S., E.C.M. Pina, and L. Giustiniano, *Improvising resilience: The unfolding of resilient leadership in COVID-19 times.* Int J Hosp Manag, 2021. **95**: p. 102904.

83. Kang, J., A. Scholp, and J.J. Jiang, *A Review of the Physiological Effects and Mechanisms of Singing.* J Voice, 2018. **32**(4): p. 390-395.

84. Monteiro, N.M. and D.J. Wall, *African dance as healing modality throughout the diaspora: The use of ritual and movement to work through trauma.* The Journal of Pan African Studies, 2011. **4**(6): p. 234-252.

85. Hope, E.C., et al., *Political activism and mental health among Black and Latinx college students.* Cultural Diversity and Ethnic Minority Psychology, 2018. **24**(1): p. 26.

86. Ross, B.Z., et al., *Behind Black women’s passion: An examination of activism among Black women in America.* Journal of Black Psychology, 2022. **48**(3-4): p. 428-447.

87. Hall, S., *□ Cultural Identity and Diaspora*, in *Colonial discourse and post-colonial theory*. 2015, Routledge. p. 392-403.

88. McCutcheon, P., L.E. Best, and T.A. Rajack-Talley, *Beyond the kitchen table: Black women and global food systems*. 2023: UNC Press Books.

89. Gasman, M., D. Spencer, and C. Orphan, *“Building bridges, not fences”: A history of civic engagement at private Black colleges and universities, 1944–1965.* History of Education Quarterly, 2015. **55**(3): p. 346-379.

90. Springfield, S., et al., *The WELL diet score correlates with the alternative healthy eating index-2010.* Food Sci Nutr, 2020. **8**(6): p. 2710-2718.

91. Cal, S.F., et al., *Resilience in chronic diseases: A systematic review.* Cogent Psychology, 2015. **2**(1): p. 1024928.

92. Anyiwo, N., D.C. Watkins, and S.J. Rowley, *“They can’t take away the light”: Hip-Hop culture and black youth’s racial resistance.* Youth & Society, 2022. **54**(4): p. 611-634.

93. Lu, J.H. and C.K. Steele, *‘Joy is resistance’: Cross-platform resilience and (re) invention of Black oral culture online.* Information, Communication & Society, 2019. **22**(6): p. 823-837.

94. Millender, E., et al., *The cumulative influence of perceived discrimination, stress, and coping responses on symptoms of depression among young African American mothers.* Journal of the American Psychiatric Nurses Association, 2024. **30**(2): p. 322-332.

95. Allen, A.M., et al., *Racial discrimination, the superwoman schema, and allostatic load: exploring an integrative stress‐coping model among African American women.* Annals of the New York Academy of Sciences, 2019. **1457**(1): p. 104-127.

96. Polish, J., *Decolonizing veganism: On resisting vegan whiteness and racism.* Critical perspectives on veganism, 2016: p. 373-391.

97. Tabrizi, R. and K.J. Rudrow, *Black vegan rhetoric: race, healing, and conflict in Black women’s blog posts.* Critical Studies in Media Communication, 2024: p. 1-14.

98. Goodkind, S., B.G. Brinkman, and K. Elliott, *Redefining Resilience and Reframing Resistance: Empowerment Programming with Black Girls to Address Societal Inequities.* Behav Med, 2020. **46**(3-4): p. 317-329.

99. Castelin, S. and G. White, *“I’ma strong independent Black woman”: The strong Black woman schema and mental health in college-aged Black women.* Psychology of Women Quarterly, 2022. **46**(2): p. 196-208.

100. Jones, M.K., K.J. Harris, and A.A. Reynolds, *In their own words: The meaning of the strong Black woman schema among Black US college women.* Sex Roles, 2021. **84**(5): p. 347-359.

101. Teo, T., *What is a white epistemology in psychological science? A critical race-theoretical analysis.* Frontiers in psychology, 2022. **13**: p. 861584.

102. Airhihenbuwa, C.O., et al., *Cultural identity and health lifestyles among African Americans: a new direction for health intervention research?* Ethnicity & disease, 2000. **10**(2): p. 148-164.

103. Gallou, E., *Heritage and pathways to wellbeing: From personal to social benefits, between experience identity and capability shaping.* Wellbeing, Space and Society, 2022. **3**: p. 100084.

104. Kumanyika, S., *Moving from silos to systems in Black women’s health research.* Meridians, 2018. **16**(2): p. 238-252.

105. Springfield, S., et al., *Modifiable Resources and Resilience in Racially and Ethnically Diverse Older Women: Implications for Health Outcomes and Interventions.* Int J Environ Res Public Health, 2022. **19**(12): p. 7089.

106. Catabay, C.J., et al., *Perceived stress and mental health: The mediating roles of social support and resilience among black women exposed to sexual violence.* Journal of affective disorders, 2019. **259**: p. 143-149.

107. Kumanyika, S.K., et al., *Expanding the obesity research paradigm to reach African American communities.* Prev Chronic Dis, 2007. **4**(4): p. A112.

108. Staudinger, U.M. and W. Greve, *Resilience and Aging.* Encyclopedia of Geropsychology, 2015: p. 1-9.

109. Zou, H. and T. Hastie, *Regularization and variable selection via the elastic net.* Journal of the Royal Statistical Society Series B: Statistical Methodology, 2005. **67**(2): p. 301-320.

110. Schomaker, M. and C. Heumann, *Model selection and model averaging after multiple imputation.* Computational Statistics & Data Analysis, 2014. **71**: p. 758-770.

111. Bonaccio, M., et al., *Mediterranean-type diet is associated with higher psychological resilience in a general adult population: findings from the Moli-sani study.* European journal of clinical nutrition, 2018. **72**(1): p. 154-160.

112. Breslow, A.S., et al., *Resilience and collective action: Exploring buffers against minority stress for transgender individuals.* Psychology of Sexual Orientation and Gender Diversity, 2015. **2**(3): p. 253.

113. Brown, D.L. and T.L. Tylka, *Racial discrimination and resilience in African American young adults: Examining racial socialization as a moderator.* Journal of Black Psychology, 2011. **37**(3): p. 259-285.

114. Joyce, S., et al., *Road to resilience: a systematic review and meta-analysis of resilience training programmes and interventions.* BMJ Open, 2018. **8**(6): p. e017858.

115. Springfield, S., et al., *Resilience and CVD-protective health behaviors in older women: examining racial and ethnic differences in a cross-sectional analysis of the Women’s Health Initiative.* Nutrients, 2020. **12**(7): p. 2107.

116. Springfield-Trice, S., et al., *Diet Quality and Resilience through Adulthood: A Cross-Sectional Analysis of the WELL for Life Study.* Nutrients, 2024. **16**(11): p. 1724.

117. Hall, J.C., *It is tough being a Black woman: Intergenerational stress and coping.* Journal of Black studies, 2018. **49**(5): p. 481-501.

118. Kondo, A., et al., *Relationship between resilience and perceived control after acute coronary syndrome: a prospective study.* Journal of Cardiovascular Nursing, 2023. **38**(1): p. E20-E30.

119. Ajzen, I., *Perceived behavioral control, self‐efficacy, locus of control, and the theory of planned behavior 1.* Journal of applied social psychology, 2002. **32**(4): p. 665-683.

120. Lachman, M., et al., *Handbook of the psychology of aging*. 2011, Academic Press, San Diego, CA.

121. Jacob, G., et al., *A systematic review of Black People coping with racism: Approaches, analysis, and empowerment.* Perspectives on Psychological Science, 2023. **18**(2): p. 392-415.

122. Polanco-Roman, L., A. Danies, and D.M. Anglin, *Racial discrimination as race-based trauma, coping strategies, and dissociative symptoms among emerging adults.* Psychological Trauma: Theory, Research, Practice, and Policy, 2016. **8**(5): p. 609.

123. Hankerson, S.H., et al., *The intergenerational impact of structural racism and cumulative trauma on depression.* American Journal of Psychiatry, 2022. **179**(6): p. 434-440.

124. Lambert, S.F., et al., *Perceptions of racism and depressive symptoms in African American adolescents: The role of perceived academic and social control.* Journal of youth and adolescence, 2009. **38**: p. 519-531.

125. Moody, A.T., J.A. Lewis, and G.P. Owens, *Gendered racism, coping, and traumatic stress among Black women: the moderating roles of the strong Black woman schema and womanist attitudes.* Psychology of women quarterly, 2023. **47**(2): p. 197-212.

126. Becker, C.B., et al., *Traumatic event exposure associated with increased food insecurity and eating disorder pathology.* Public health nutrition, 2018. **21**(16): p. 3058-3066.

127. Barlow, J.N., *Restoring optimal black mental health and reversing intergenerational trauma in an era of Black Lives Matter.* Biography, 2018. **41**(4): p. 895-908.

128. Graff, G., *The intergenerational trauma of slavery and its aftermath.* The Journal of psychohistory, 2014. **41**(3): p. 181.

129. Douglas, J., M. Perlstein, and L. Polanco-Roman, *Toward an understanding of intergenerational trauma and storytelling in Black families.* Psychological trauma: theory, research, practice, and policy, 2024.

130. Oshio, A., et al., *Resilience and Big Five personality traits: A meta-analysis.* Personality and individual differences, 2018. **127**: p. 54-60.

131. Pearson, M.R., et al., *Role of neuroticism and coping strategies in psychological reactions to a racist incident among African American university students.* Journal of Black Psychology, 2014. **40**(1): p. 81-111.

132. Shanahan, M.J., et al., *Conscientiousness, health, and aging: the life course of personality model.* Developmental psychology, 2014. **50**(5): p. 1407.

133. Park, H.M., et al., *When conscientiousness differentially pays off: The role of incongruence between conscientiousness and black stereotypes in pay inequality.* Personnel Psychology, 2023.

134. Kwate, N.O.A. and I.H. Meyer, *The myth of meritocracy and African American health.* American journal of public health, 2010. **100**(10): p. 1831-1834.

135. Lui, F., A. Espinosa, and D.M. Anglin, *Latent class analysis of racial microaggressions and institution-specific racial discrimination at a US minority-serving university: Implications for mental health and coping.* American Journal of Orthopsychiatry, 2022. **92**(6): p. 657.

136. Orelus, P.W., *The cost of being professors and administrators of color in predominantly white institutions: unpacking microagression, isolation, exclusion, and unfairness through a critical race lens.* Diaspora, Indigenous, and Minority Education, 2020. **14**(2): p. 117-132.

137. Johnson, S., A. Konopasky, and T. Wyatt, *In Their Own Voices: A Critical Narrative Review of Black Women Faculty Members’ First-Person Accounts of Racial Trauma Across Higher Education.* Teaching and Learning in Medicine, 2024: p. 1-11.

138. Jackson Preston, P., et al., *“I Am Never Enough”: Factors Contributing to Secondary Traumatic Stress and Burnout among Black Student Services Professionals in Higher Education.* Trauma Care, 2023. **3**(2): p. 93-107.

139. Rhodes, S.L., *Physical and psychological health of African American women caregivers: Unmasking the paradox.* Issues in Mental Health Nursing, 2021. **42**(6): p. 523-540.

140. Smith, B.W., et al., *The brief resilience scale: assessing the ability to bounce back.* International journal of behavioral medicine, 2008. **15**(3): p. 194-200.

141. VanKim, N.A., Corliss, H. L., Jun, H. J., Calzo, J. P., AlAwadhi, M., & Austin, S. B., *Gender expression and sexual orientation differences in diet quality and eating habits from adolescence to young adulthood.* Journal of the Academy of Nutrition and Dietetics, 2019. **119**(12 ): p. 2028-2040.

142. Cohen, S., T. Kamarck, and R. Mermelstein, *A global measure of perceived stress.* Journal of health and social behavior, 1983: p. 385-396.

143. Sternthal, M.J., N. Slopen, and D.R. Williams, *RACIAL DISPARITIES IN HEALTH: How Much Does Stress Really Matter? 1.* Du Bois review: social science research on race, 2011. **8**(1): p. 95.

144. Cozier, Y., et al., *Racial discrimination and the incidence of hypertension in US black women.* Annals of epidemiology, 2006. **16**(9): p. 681-687.

145. Bailey, T.-K.M., et al., *Development and validation of the Internalized Racial Oppression Scale for Black individuals.* Journal of Counseling Psychology, 2011. **58**(4): p. 481.

146. Felitti, V.J., et al., *Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study.* American journal of preventive medicine, 1998. **14**(4): p. 245-258.

147. Nikolaus, C.J., B. Ellison, and S.M. Nickols-Richardson, *Are estimates of food insecurity among college students accurate? Comparison of assessment protocols.* PloS one, 2019. **14**(4): p. e0215161.

148. Levis, B., et al., *Accuracy of the PHQ-2 alone and in combination with the PHQ-9 for screening to detect major depression: systematic review and meta-analysis.* Jama, 2020. **323**(22): p. 2290-2300.

149. Godin, G. and R. Shephard, *A simple method to assess exercise behavior in the community.* Can J Appl Sport Sci, 1985. **10**(3): p. 141-146.

150. Carter-Nolan, P.L., et al., *Validation of physical activity instruments: Black Women's Health Study.* Ethnicity and Disease, 2006. **16**(4): p. 943.

151. Adams-Campbell, L.L., et al., *Descriptive epidemiology of physical activity in African-American women.* Preventive Medicine, 2000. **30**(1): p. 43-50.

152. Ainsworth, B.E., et al., *Compendium of physical activities: classification of energy costs of human physical activities.* Medicine and science in sports and exercise, 1993. **25**(1): p. 71-80.

153. Tasali, E., et al., *The effects of extended bedtimes on sleep duration and food desire in overweight young adults: a home-based intervention.* Appetite, 2014. **80**: p. 220-224.

154. Cuttler, C. and A. Spradlin, *Measuring cannabis consumption: Psychometric properties of the daily sessions, frequency, age of onset, and quantity of cannabis use inventory (DFAQ-CU).* PLoS One, 2017. **12**(5): p. e0178194.

155. Springfield, S., et al., *The WELL diet score correlates with the alternative healthy eating index‐2010.* Food Science & Nutrition, 2020.

156. Nick, E.A., et al., *The Online Social Support Scale: Measure development and validation.* Psychological assessment, 2018. **30**(9): p. 1127.

157. Hunter, B.A., L.A. Jason, and C.B. Keys, *Factors of empowerment for women in recovery from substance use.* American journal of community psychology, 2013. **51**(1-2): p. 91-102.

158. Monsivais, P., A. Aggarwal, and A. Drewnowski, *Are socio-economic disparities in diet quality explained by diet cost?* J Epidemiol Community Health, 2012. **66**(6): p. 530-535.

159. Grinstein-Weiss, M., et al., *Racial disparities in education debt burden among low-and moderate-income households.* Children and Youth Services Review, 2016. **65**: p. 166-174.

160. Hossain, S., et al., *Caregiver Status and Diet Quality in Community-Dwelling Adults.* Nutrients, 2021. **13**(6): p. 1803.

161. Koenig, H., G.R. Parkerson Jr, and K.G. Meador, *Religion index for psychiatric research.* 1997.

162. Cozier, Y.C., et al., *Religious and spiritual coping and risk of incident hypertension in the black women's health study.* Annals of Behavioral Medicine, 2018. **52**(12): p. 989-998.

163. Pettigrew, S., et al., *Evaluation outcomes of a long-running adult nutrition education programme.* Public health nutrition, 2016. **19**(4): p. 743-752.

164. Oney, C., et al., *Eating behaviors and related cultural attitudes of African American men and women.* Health Psychology Open, 2015. **2**(2): p. 2055102915605974.

165. Jones, J.M., *TRIOS: A psychological theory of the African legacy in American culture.* Journal of Social Issues, 2003. **59**(1): p. 217-242.

166. Machida, D., *Relationship between community or home gardening and health of the elderly: A web-based cross-sectional survey in Japan.* International journal of environmental research and public health, 2019. **16**(8): p. 1389.

167. Kistler, M.E., and Moon J. Lee. . *Does exposure to sexual hip-hop music videos influence the sexual attitudes of college students?* Mass Communication and Society 2009. **13.1** p. 67-86.

168. Condrasky, M.D., et al., *Development of psychosocial scales for evaluating the impact of a culinary nutrition education program on cooking and healthful eating.* Journal of nutrition education and behavior, 2011. **43**(6): p. 511-516.

169. Lavelle, F., et al., *The development and validation of measures to assess cooking skills and food skills.* International Journal of Behavioral Nutrition and Physical Activity, 2017. **14**(1): p. 1-13.

170. Rammstedt, B., et al., *A short scale for assessing the big five dimensions of personality: 10 item big five inventory (BFI-10).* methods, data, analyses, 2013. **7**(2): p. 17.

171. Limonero, J.T., et al., *Evidence for validity of the brief resilient coping scale in a young Spanish sample.* The Spanish journal of psychology, 2014. **17**.

172. Krieger, N., et al., *Experiences of discrimination: validity and reliability of a self-report measure for population health research on racism and health.* Social science & medicine, 2005. **61**(7): p. 1576-1596.

173. Forde, A.T., et al., *Discrimination and hypertension risk among African Americans in the Jackson heart study.* Hypertension, 2020. **76**(3): p. 715-723.

174. Resnicow, K., Rachel Davis, Nanhua Zhang, Victor Strecher, Dennis Tolsma, Josephine Calvi, Gwen Alexander, Julia P. Anderson, Cheryl Wiese, and William E. Cross Jr., *Tailoring a fruit and vegetable intervention on ethnic identity: results of a randomized study.* Health Psychology 2009. **28**(4): p. 394.

175. Narayan, A.J., et al., *Positive childhood experiences predict less psychopathology and stress in pregnant women with childhood adversity: A pilot study of the benevolent childhood experiences (BCEs) scale.* Child abuse & neglect, 2018. **78**: p. 19-30.

176. Crandall, A., et al., *ACEs and counter-ACEs: How positive and negative childhood experiences influence adult health.* Child abuse & neglect, 2019. **96**: p. 104089.

177. Hall, R.R., Shani Francis, Melicia Whitt-Glover, Kismet Loftin-Bell, Katrina Swett, and Amy J. McMichael. , *Hair care practices as a barrier to physical activity in African American women.* JAMA, 2013. **149**(3): p. 310-314.

178. Haskin, A. and C. Aguh, *All hairstyles are not created equal: what the dermatologist needs to know about black hairstyling practices and the risk of traction alopecia (TA).* Journal of the American Academy of Dermatology, 2016. **75**(3): p. 606-611.

179. Laganà, L., Maria L. Bratly, and Ioakim Boutakidis., *The validation of a new measure quantifying the social quality of life of ethnically diverse older women: two cross-sectional studies..* BMC geriatrics 2011. **11**(1): p. 1-13.

180. Blake, R.L., and David A. McKay. . *A single-item measure of social supports as a predictor of morbidity.* J Fam Pract, 1986. **22**( 22): p. 82-84.

181. Hope, E.C., Pender, K. N., & Riddick, K. N. (2019). Development and validation of the Black community activism orientation scale. Journal of Black Psychology, 45(3), 185-214., *Development and validation of the Black community activism orientation scale. .* Journal of Black Psychology, 2019. **45**(3): p. 185-214.

**Supplementation:**

**Supplementary Table 1**. Constructs and data sources for developing a survey focused on stressors, resilience, and diet quality in young African American women

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables organized by theoretical constructs and domains** | **Data Source** | **Measure Description** | **Sample Item** | **Response Options** | **Interpretation**  **(Item Range)** |
| **OUTCOMES** | | | | | |
| Resilience | Brief Resilience Scale (BRS) | 6 questions asking participants about their ability to bounce back or recover from stress. | I tend to bounce back quickly after hard times. | Strongly Disagree = 1  Disagree = 2  Neutral = 3  Agree = 4  Strongly Agree = 5 | A higher score indicated higher resilience  (1-5) |
| **POTENTIAL MODIFIERS** | | | | | |
| Age | Self-reported, open-ended | 1 question asking participants their age. | What is your current age? | Open-ended |  |
| Sexual orientation | Sexual Orientation | 1 question asking participants how they identify their sexual orientation. | Whether or not you are currently sexually active, what is your sexual orientation or identity? | Heterosexual  lesbian, gay, or homosexual,  bisexual,  None of these  Prefer not to answer |  |
| College enrollment | Self-reported, open-ended | 1 question asking participants if they are currently enrolled in a college or university. | Are you currently enrolled in a college or university? | Yes  No |  |
| **STRESSORS NONPSYCHOLOGICAL/PSYCHOLOGICAL** | | | | | |
| Perceived stress | Perceived Stress Scale (PSS-4) | 4 questions assessing how often respondents have felt psychological stress in the last month | In the last month how often have you felt that you were unable to control the important things in your life? | Never  Almost never  Sometimes  Fairly often  Very often | A higher score indicated greater perceived stress  (0-16)  A score of 6 or higher indicated high stress in this cohort. |
| Perceived racism: everyday discrimination | Everyday Discrimination Scale | 5 questions were asked to gauge the frequency with which participants experienced discrimination | People act as if they were afraid of you. | Never = 0  <1 per year = .5  A few times per year = 3  A few times per month = 36  At least once a week = 104  Almost every day = 260 | A higher score indicated more instances of experienced discrimination  chronicity-based scoring: (0-1300) |
| Perceived Racism: Lifetime discrimination | Major Experience of Discrimination scale | 3 questions were asked to assess participants’ discrimination experiences in their lifetime. | Have you ever been unfairly discouraged by a teacher or advisor from continuing your education? | Never = 0  Only one time = 1  2-3 times = 2  3-4 times = 3  6 or more times = 4 | A higher score indicated more experiences of significant acts of discrimination in the participants’ lifetime  (0-12) |
| Early stressors | Adverse childhood experiences (ACEs) | 8 questions were administered asking participants about their household and personal childhood experiences prior to age 18 | Did a parent or other adult in the household often (or very often) push, grab, slap, or throw something at you? Hit you so hard that you had marks or were injured? | Yes = 1  No = 0  Don’t know/refuse | A higher score indicated more adverse childhood experiences  (0-8) |
| Internalized racism | Internalized Racism Scale (IRS) | 5 questions were assessed asking participants about their beliefs and biases about African American and African culture. | I do not tend to associate myself with an African heritage | Strongly Disagree = 1  Disagree = 2  Neutral = 3  Agree = 4  Strongly Agree = 5 | Higher scores indicated greater internalized racism  (1-5) |
| Community stressors | Community Stressors: Violence (5-item subscale) | 5 questions were assessed asking participants about their community violence in the last six months. | Were there any gang fights between neighbors in the last 6 months? | Yes = 1  No = 0 | A higher score indicated greater community violence  (0-5) |
| Food insecurity | Food security screener | 2 questions were assessed asking participants about how frequently their household ran short of money for food and if there was enough food for their household in the last 12 months. | Within the past 12 months we worried whether our food would run out before we got the money to buy more | Often true = 2  Sometimes true = 1  Never true = 0 | A score ≥ 1 indicated food insecurity  (0-4) |
| **NON-PSYCHOLOGICAL** | | | | | |
| **Biological** | | | | | |
| CVD risk factors | Self-reported | Participants were asked whether they were diagnosed with hypertension, high cholesterol, diabetes, or cancer, and if they received the COVID-19 vaccination. | Have you ever been diagnosed with hypertension? | Yes  No |  |
| COVID-19 and vaccine  prevalence | Self-reported | Participants were asked whether they were diagnosed with COVID-19 and if they received the COVID-19 vaccination. | Have you ever been diagnosed with COVID-19? | Yes  No |  |
| Depression | Patient Health Questionnaire-2 (PHQ-2) | 2 questions assessing participants’ mood in a 2-week period | Over the last 2 weeks, how often have you been bothered by the following problems: Feeling down, depressed, or hopeless? | Not at all = 0  Several days = 1  More than half the days = 2  Nearly every day = 3 | A score of ≥ 3 indicated that major depressive disorder is likely and that the patient should be further evaluated  (0-6) |
| Diet quality | Well Diet Score | 12 questions asking participants about their frequency of consumption during the last year for breakfast, lunch, dinner, snacks, and eating out. | How often did you eat vegetables? | 0=Never  1=1x month  2=2-3x month  3=1-2x week  4=3-4x week  5=5-6x week  6=1x day  7=2-3x day  8=4-5x day  9=>6 day | A higher score indicated better diet quality  (0-120) |
| Adherence to diet-related CVD-prevention guidelines | Physical activity questionnaire (PAQ) | 3 questions assessed participants’ frequency of participating in leisure, moderate, or strenuous activity. | During the past year, how many hours per week (on average) did you spend walking for exercise? | None  Less than 1 hour  1 hour  2 hours  3-4 hours  5-6 hours  7-9 hours  10 or more hours | A multiplier was applied to the hours spent on each activity type accordingly:  Leisure = 3x  Moderate = 3.5x  Vigorous = 7x  A score of 150 minutes per week meets national physical activity guidelines |
| Smoking | 1 question gauged whether participants smoke. | Do you currently smoke cigarettes? | Yes  No |  |
| Inadequate sleep | 1 question was assessed asking participants how many hours of sleep they received on average in the last 4 weeks. | About how many hours of sleep did you get on a typical night during the past 4 weeks? | Less than 6 hours or more than 9 hours | Inadequate sleep is associated with heart disease in AA women |
| BMI | 2 questions were assessed asking participants their height and weight.  Responses were used to calculate BMI kg/m2 | How much do you weigh in pounds (example: 195)? | Open-ended |  |
| Alcohol Use Disorder Identification Test (AUDIT) | 1 question was assessed asking participants how many times, during the last 12 months, they consumed alcohol. | How many times, during the last 12 months, did you drink alcohol (beer, liquor, wine, etc.) | Never = 1  Less than once a month = 1  About once a month = 1  Several times a week = 1  Once a day = 1  More than once a day = 2 | Responses were dichotomized as “more than once a day” vs. the other response options.  A score of 2 indicated that the participant used alcohol more than once a day |
| Employment status | Self-reported, open-ended | 1 question assessing participants’ employment status (full-time, part-time, self-employed, unemployed, retired, student) | What is your employment status? | Employed full-time  Employed part- time  Self-employed  Unemployed  Retired  Student |  |
| **Physical** |  |  |  |  |  |
| Access to technology | Self-reported | 1 question asking whether participants own a smartphone, tablet, or laptop | Which of the following, if any, do you currently own? | Smartphone  Tablet  Laptop |  |
| Social media use | Self-reported | 1 question | Are you on social media | Yes  No |  |
| Cannabis use | Daily sessions, frequency, age of onset, and quantity of cannabis use inventory (DFAQ-CU) | 1 question assessing how often (if at all) participants use cannabis. | Which of the following best captures the average frequency of your current cannabis use (i.e., weed, flowers, and edibles)? | I do not use cannabis = 0  Less than once a year = 1  Once a year = 1  Once every 3-6 months (2-4 times/yr.) = 1  Once every 2 months  (6 times/yr.) = 1  Once a month (12 times/yr.) = 1  2-3 times a month = 1  Once a week = 1  Twice a week = 1  3-4 times a week = 1  5-6 times a week = 1  Once a day = 1  More than once a day = 1 | A score > 0 indicated that the participant uses cannabis |
| Knowledge of community resources | Adapted from the *Personal Progress Scale-Revised* (PPS-R) | 5 questions assessing participants’ awareness of resources within their community to help with the following: job search, housing, childcare, continuing education, and substance misuse treatments | I am aware of places in my community that will help me find jobs | Almost never true = 1  Usually not true = 2  Rarely true = 3  Occasionally true = 4  Often true = 5  Usually true = 6  Almost always true = 7 | Higher score indicated greater empowerment  (1-7) |
| **Socio-economic status** | | | | | |
| Education | Self-reported, open-ended | 1 question assessing participants’ level of education | What is the highest level of education that you completed? | Less than high school  High school graduate  Some college  4-year college degree  Graduate or professional degree |  |
| Marital status | Self-reported, open-ended | 1 question assessing participants’ relationship status (single, married or living as married, divorced, or widowed) | Which of the following best describes your relationship status? | Single  Married or living as married  Divorced  Widowed |  |
| Educational debt | Self-reported, open-ended | 1 question assessing how much money participants owe to student debt | Please indicate your level of educational debt as of 2021? | None  1-49,999  50,000-99,999  100,000-149,999  150,000-200,000  >200,000 |  |
| Children | Self-reported, open-ended | 1 question assessing how many of the participants’ biological children (if any) live in their household | How many biological children (under 18 years of age) do you have living in your household? | None  1  2  3  4+ |  |
| Government assistance program | Self-reported, open-ended | 5 questions assessing whether participants are involved in government programs (SNAP, WIC, Section 8, Unemployment Insurance, COVID Rent Relief Program) | Are you currently participating in any of the following government programs? | Yes  No |  |
| Unpaid caregiving status | Self-reported, open-ended | 1 question assessing how often participants provide unpaid care for others, excluding their own biological children | Excluding your biological children, how often  do you provide unpaid care for others? | Never  Daily  Weekly  Monthly  Yearly | Higher score means less unpaid care |
| **PSYCHOLOGICAL RESOURCES** | | | | | |
| **Cognition** | | | | | |
| Spirituality | Duke University Religion Index | 2 questions assessing how often participants were involved in religious/spiritual activity (e.g., praying and going to a religious service) | How often do you engage in prayer or meditation? | Rarely or never  One time a week or less  Several times per week  1-2 times a day  Several times per day | A higher score indicated greater spirituality |
| Knowledge of link between diet and disease | Diet-disease link | 3 questions assessing participants’ perceptions of the strength of the diet-disease link | How strong do you think the link is between diet and each of these diseases: heart disease? | Very weak = 0  Weak = 2  Neutral = 3  Strong = 4  Very strong = 5 | A higher score indicated that the participant perceived a stronger link between diet and the given disease  (0-12) |
| Improvisation | Adapted from Jones’s *TRIOS* Scale | 6 questions assessing participants’ ability to improvise (goal-directed creative problem solving under time pressure; a distinctive style) | Please indicate your level of agreement with each of the following statements: When a situation arises, I usually know 2-3 different ways to handle it | Very untrue = 1  Untrue = 2  Somewhat untrue = 3  Neutral = 4  Somewhat true = 5  True = 6  Very true = 7 | A higher score indicated greater endorsement of improvisation. Improvisation is linked to a greater appreciation of creative style rather than a fixation on rigid standards of physical appearance (1-7) |
| Gardening | Self-reported, open-ended | 1 question assessing how often participants garden | How many days have you been gardening each week during the past month? | 0 day/week = 0  1 day/week = 1  2 days/week = 2  3 days/week = 3  4 days/week = 4  5 days/week = 5  6 days/week = 6  7 days/week = 7 | A higher score indicated greater endorsement of gardening.  (0-7) |
| Hip-hop | Hip-hop Fandom | 5 questions assessing participants’ attitude towards hip-hop | I listen mostly to hip-hop music | Strongly disagree = 1  Disagree = 2  Somewhat disagree = 3  Neutral = 4  Agree = 5  Somewhat agree = 6  Strongly agree = 7 | A higher score indicated greater endorsement of hip-hop music  (1-7) |
| **Self and Personality** | | | | | |
| Self-efficacy for healthy eating | Cooking techniques and meal prep SE | 4 questions assessing participants’ ability to eat healthy foods | Indicate the extent to which you feel confident about performing each of the following activities. - Eating the recommended 9 1/2 servings of fruits and vegetables each day. | Not at all confident = 1  Not very confident = 2  Neutral = 3  Confident = 4  Extremely confident = 5 | A higher score indicated greater self-efficacy for healthy eating  (1-5) |
| Self-efficacy for cooking techniques/meal prep | Cooking techniques and meal prep SE | 15 questions assessing participants’ ability to perform various cooking techniques | Indicate to the extent to which you feel confident about performing each of the following activities. - Using knife skills in the kitchen. | Not at all confident = 1  Not very confident = 2  Neutral = 3  Confident = 4  Extremely confident = 5 | A higher score indicated greater food preparation skills  (1-5) |
| Big five personality | Big Five Personality (10-item version) | 10 questions assessing participants on personality traits (Extravert, Agreeable, Conscientious, Neurotic, Openness to experience) | I see myself as someone who is reserved | Disagree strongly =1  Disagree a little = 2  Neither agree nor = 3  Agree a little = 4  Agree strongly = 5 | The personality traits are represented by the items accordingly:  Extravert: 1, 6  Agreeable: 2, 7  Conscientious: 3, 8  Neurotic: 4, 9  Openness to experience: 5, 10  Items 1, 3, 4, 5, & 7 are reverse-coded |
| Resilient coping | Brief Resilience Coping Scale (BRCS) | 10 questions assessing participants’ ability to cope with stress | I tend to take a long time to get over setbacks in my life. [R] | Strongly Disagree = 1  Disagree = 2  Neutral = 3  Agree = 4  Strongly Agree = 5 | Total sum scores range from 4 to 20. Scores of 4-13 indicate low resilient coping, 14-16 indicate medium resilient coping and 17-20 indicate high resilient coping. |
| Response to unfair treatment | Experience of discrimination (coping with discrimination) | 7 questions assessing how participants reacted to being treated unfairly. | How did you respond to this/these experience(s)? Did you do each of the following things? I tried to do something about it. | Yes  No |  |
| Black identity classification | Black Identity Classification Scale (BICS) | 1 question assessing how valuable the participants’ Black identity is to them | Think of a number between 0 and 10, with 0 meaning ‘Not at all important’ and 10 meaning ‘‘Very important.’ By choosing any number between 0 and 10, how important is being Black to your overall identity? | 0 = not at all important  1  2  3  4  5  6  7  8  9  10 = very important | A higher score indicated greater endorsement of the participant’s identity as Black  (0-10) |
| Benevolent childhood experiences | Benevolent Childhood Experiences Scale (BCEs) | 10 questions assessing participants’ positive experiences between ages 0–18 years. Items pertained to perceived safety and security, positive and predictable quality of life, and interpersonal support. | Did you have at least one caregiver with whom you felt safe? | Yes = 1  No = 0  Don’t know/refuse | a higher score indicated a greater number of favorable childhood experiences  (0-10) |
| Hairstyle | Hair preference and maintenance | 2 questions assessing participants’ chosen hairstyle | Which of the following describes your current hairstyle? | Relaxed or chemically curled (perm)  Hair weaves or wigs  Hot combed/flat ironed  Braided  Locked  Natural |  |
| Control of beliefs | Perceived Stress Scale | First 2 items of Perceived Stress Scale. | In the last month, how often have you felt that you were unable to control the important things in your life? | Never  Almost never  Sometimes  Fairly often  Very often | 0-8 with higher scores being worse. |
| **Social relations** | | | | | |
| Social support | Single Item Measure of Social Support (SIMSS) | 1 question assessing participants’ social support resources | How many people do you have near you that you can readily count on for help in times of difficulty, such as watching over children or pets, giving rides to the hospital or store, or help when you are sick? | 0=0  1=1  2=2-5  3=6-10  4= More than 10 | Responses of 0 or 1 indicate low tangible assistance; 2 indicates moderate and 3 or more indicates high  tangible assistance. |
| Online Social Support Scale | 2 questions assessing participants’ social support resources from online sources | Now, think about the online spaces you use  above. Rate how often the following things  have happened for you while you interacted  with others online over the last two months.  How often "People show that they care  about me online." | Never = 1  Rarely = 2  Sometimes = 3  Pretty often = 4  A lot = 5 | A higher score indicated greater online social support  (1-5) |
| Black community activism | Black Community Activism Orientation Scale | 8 questions assessing participants’ orientation towards Black community activism (sociopolitical action for the specific benefit of positive social change, eradication of oppression, and promotion of justice for the Black community) | It is important to be involved in the Black community | Strongly agree = 1  Agree = 2  Somewhat agree = 3  Neither agree nor disagree = 4  Somewhat disagree = 5  Disagree = 6  Strongly disagree = 7 | A lower score indicates endorsement of Black Community Activism while a higher score indicates less propensity towards Black Community Activism  (1-7) |

|  |  |
| --- | --- |
| **Outcomes** | |
| **Resilience** | Brief Resilience Scale (BRS) was used to assess the participant’s ability to bounce back, developed by Smith and colleagues 2008. The psychometric properties were validated in four samples of adults and the authors concluded that the scale is a reliable means of assessing the degree of resilience, or the ability to bounce back or recover from stress [[140](#_ENREF_140)]. We assessed six BRS questions. Responses were (1 “Strongly disagree”; 2 “Disagree”; 3 “Neutral”; 4 “Agree”; 5 “Agree” ; 6 “Strongly agree”). Example: “I tend to bounce back quickly after hard times” [[140](#_ENREF_140)]. |
| **Potential modifiers** | |
| **Age** | Age at the time of screening. Participants were asked, “Please select your age group”. Responses included 18-35 years, 35-49 years, and 50+ years. Only women who selected the first response were included in our study. |
| **Sexual orientation** | Sexual orientation or identity. Participants were asked their current sexual orientation/identity. Response options were (1 “Heterosexual” ; 2 “Lesbian, gay, or homosexual” ; 3 “Bisexual” ; 4 “None of these” ; 5 “Prefer not to answer”) [[141](#_ENREF_141)]. |
| **College enrollment** | College enrollment status. Participants were asked whether or not they are currently enrolled in a college or university. Reponses were “yes” or “no”. |
| **Stressors**  **Non psychological/psychological** | |
| **Perceived stress** | The Perceived Stress Scale-4 (PSS-4). This scale assessed the degree to which respondents find their lives unpredictable, uncontrollable, and overloaded [[142](#_ENREF_142)]. It includes four items that measure self-appraised stress during the last month. The PSS is psychometrically valid in samples of African American women and has shown negative associations with overall health status and well-being. Participants were asked how often you felt or thought a certain way during the past month. Response options were (1 “Never”; 2 “Almost never” ; 3 “Sometimes” ; 4 “Fairly often” ; 5 “Very often”). Example: You were unable to control the important things in your life? |
| **Perceived racism: every day and lifetime** | Everyday Discrimination Scale (five items) and Major Experiences of Discrimination (three items) to measure multi-level racism [[143](#_ENREF_143), [144](#_ENREF_144)]. Response options were (1 = never, 5 = at least once a week) for the Everyday Discrimination and response option were (1 = never, 5 = 6 or more times) for the Major Experiences of Discrimination. Examples: In your day-to-day life how often have any of the following things happened to you based on your race/ethnicity or skin color? “People act as if they think you are not smart”. In your lifetime have any of the following things happened to you based on your race/ethnicity or skin color? “Have you ever been unfairly stopped, searched, questioned, physically threatened or abused by the police?” These measures were positively associated with hypertension in the Black Women’s Health Study [[144](#_ENREF_144)]. |
| **Internalized Racism** | Internalized Racism scale original had 36 – items. We assessed five items asking participants about belief biases, alternation of physical appearance, internalized negative stereotypes, hair change and African worldview and motifs. Response options ranged (1=strongly disagree to 5=strongly agree). Example: There are no institutions of higher learning in Africa [[145](#_ENREF_145)]. |
| **Early stressors** | Adverse Childhood Experiences (ACEs). We assessed original eight ACEs questions published by Felitti et al. 1997. Response options were “yes” and “no”. Example: “During the time period before you were 18 years of age…Did a household member go to prison?” [[146](#_ENREF_146)]. |
| **Community stressors** | Violence (five- item subscale). Participants were asked, “In the past 6 months, has there been (1) a neighborhood fight involving a weapon; (2) a violent argument between neighbors; (3) gang fights; (4) sexual assault or rape; (5) robbery or mugging. Response options were (1 = Never, 5 = Very often) This was one of three subscales in an assessment focused on community stressors [[143](#_ENREF_143)]. |
| **Food security** | Food security screener (two-items). Participants were asked, “In the past 12 months, did you ever run short of money and try to make your food, or your food money go further? Response options “yes” or no”. They were also asked. “Which of these statements best describes the food eaten in your household? “Response options : Enough but not always the kinds of food we want to eat, Sometimes not enough to eat, Often not enough to eat [[147](#_ENREF_147)]. |
| **Non-Psychological Resources** | |
| **Biological** | |
| **General health**  **Cancer – cancer report**  **AHA**  **Covid 19 – CDC fact sheets** | General Health.Participants were asked five questions to assess their general health. These include the following items. Have you received a Covid-19 vaccination? Have you ever been diagnosed with COVID-19? Have you ever been diagnosed with diabetes? hypertension? high cholesterol? Cancer? Responses were “yes” or “no”. |
| **Depression** | Patient Health Questionnaire (PHQ-2). Two-item screener. Participants were asked if they experienced “little interest or pleasure in doing things” and “feeling down, depressed, or hopeless” in the past two weeks (PHQ-2). Responses options were “0=Not at all to 3= Nearly every day”. [[148](#_ENREF_148)] |
| **CVD**  **Well Diet Score** | Self-administered physical activity questionnaire (PAQ) for Black women. These items were guided by the Godin Leisure-Time Exercise Questionnaire (short version) and validated in a large prospective study of African American women in the United States against an accelerometer (actigraph), an objective assessment of movement, and a seven-day activity diary.  The women were asked how many hours per week on average were Both 742 (1.2) spent during the past year in “walking for exercise,” in “moderate activity (such as housework, gardening, bowling),” and in “strenuous physical activity (such as basketball, swimming, running, aerobics).” Response categories were the same for all three items: “Noneless than 1 hour, 1 hour, 2 hours, 3–4 hours, 5–6 hours,7–9 hours, 10 or more hours.”[[149-152](#_ENREF_149)]. |
| Smoke now. Participants were asked, “Do you smoke cigarettes now? Response options were “yes” or “no”. |
| Adequate sleep. Participants were asked about how many hours of sleep did you get a night during the past 4 weeks? Response options were (1 “5 or less hours” ; 2 “6 hours” ; 3 “7 hours” ; 4 “8 hours” ; 5 “9 hours” ; 6 “10 or more hours.”). Getting 7-9 hours of sleep has been positively associated with high resilience levels among older women enrolled in the WHI cohort [[115](#_ENREF_115), [153](#_ENREF_153)]. |
| Height and weight. Participants were asked what is your height in ft and inches? What is your weight in pounds? Open ended. |
| Participants were asked how many times, during the last 12 months, did you drink alcohol (beer, liquor, wine, etc.). Response options were ( 1 “never” ; 2 “less than once a month” ; 3 “about once a month” : 4 “several times a week” ; 4 “once a day” ; 5 “more than once a day”) [[154](#_ENREF_154)]. |
| WELL Diet Score. For the 12 diet‐related items, the team of nutrition professionals working on the project agreed, by consensus, how to distribute points across the different frequencies of consumption. Participants were asked about their frequency of consumptions during the last year during breakfast, lunch dinner, snacks and eating out. Response options were (1 “Never” ; 2 “1x/month” ; 3 “2‐3x/months” ; 4 “1‐2x/weeks” ; 5 “3‐4x/weeks” ; 6 “5‐6x/weeks” ; 7 “1x/day, 2–3x/days” ; 8 “4–5x/days” ; 9 “>6/days”). Example: “How often do you eat fish?” [[155](#_ENREF_155)]. |
| **Cannabis use** | Frequency use of cannabis. Participants were asked the average frequency they currently use cannabis?” Response options were (1 “I do not use cannabis” ; 2 “less than once a year” ; 3 “once a year” ; 4 “once every 3-6 months (2-4 times/yr.)” ; 4 “once every 2 months (6 times/yr.)” ; 5 “once a month (12 times/yr.)” ; 6 “2-3 times a month” ; 7 “once a week” ; 8 “twice a week” ; 9 “3-4 times a week” ; 10 “5-6 times a week” ; 11 “once a day” ; 12 “more than once a day” ; 13 “No” [[154](#_ENREF_154)]. |
| **Employment status** | Employment status. Participants were asked about their employment status. Response options were Employed full-time, employed part-time, Self-employed, Unemployed, Retired, Student, Homemaker, Disabled. Participants were able select more than one item. |
| **Physical** | |
| **Smart phone access** | Smart phone access. Participants were asked if they have a smart phone? Response options were “yes” or “no”. |
| **Social media access** | Participants were asked if they were on social media? Response options were “yes” or “no”. |
| **Social media use** | Social media use. Participants were asked how much they use the following sites, apps, services or games to connect or interact with people (Texting, Facebook, Instagram, Twitter, YouTube, Snap Chat, Tik Tok, Pinterest, and Dating sites/apps (e.g., Hinge, Tinder)). Response options ranged from (1 “Never” ; 2 “Sometimes” ; 3 “About half the time” ; 4 “Most of the time” ; 5 “Always” ; 6 “Disagree”)[[156](#_ENREF_156)]. |
| **Knowledge of community resources** | Knowledge of community resources (five-items). Participants were asked if they were aware about certain resources in their community. Response options ranged from “Almost never true” to “Almost always true.” Example: “I am aware of places in my community that will help me find jobs.” I am aware of how to get help with parenting or childcare costs in my community [[157](#_ENREF_157)]. This is a subscale of the Women Empowerment Scale [[157](#_ENREF_157)]. |
| **Socioeconomics** | |
| **Education** | Highest level of education. Participants were asked what is the highest level of education that you completed? Response options were (1 “Having attained less than a high school diploma”; 2 “only having obtained a high school diploma or GED” ; 3 “completing some college-level courses and obtaining a college degree” ; 4 “Graduate or professional degree”) [[158](#_ENREF_158)]. |
| **Marital status** | Marital status. Participants were asked what best describes their relationship status? Response options were (1 “Single”; 2 “Married”; 3 “Living as married” ; 4 “widowed” ; 5 “Divorced”). |
| **Income** | Household annual income. Participants were asked what is your annual income? Responses options were (1 “less than $35,000” ; 2 “$35,000 to $49,999” ; 3 “$50,000 to $74,999” 4 ; “$75,000+”) [[158](#_ENREF_158)]. |
| **Educational debt** | Participants were asked to indicate their level of educational debt as of 2021. Responses options were (1 “1 to $49,999” ; 2 “from $50,000 to $99,999” ; 3 “$100,000 -149,999” ; 4 “$150,000-200,000” ; 5 “$>200,000+” ) [[159](#_ENREF_159)]. |
| **Parity** | Participants were asked how many biological children (under 18 years of age) they had. Responses options were ( 1 “None” ; 2 “one” ; 3 “two” ; 4 “three” ; 5 “4+”). |
| **Government assistance program** | Participation in government assistance program. Participants were asked, “Are you currently participating in any of the following government assistance programs?” These programs included the supplemental nutrition program (SNAP), Women Infant and Children (WIC), the Housing Choice Voucher program (Section 8), and Covid Relief Rental Assistance. Response options were “yes” or “no”. |
| **Caregiving status** | Participants were asked excluding your biological children, how often do you provide unpaid care for others? Response options were (1 “never” ; 2 “daily” ; 3 “weekly” ; 4 “monthly” ; 5 “yearly”).Participants were asked do you provide regular care for an elder in your home. Response options were (1 “yes” ; 2 “no”).  Evidence suggest caregiving is associated with diet quality [[160](#_ENREF_160)]. |
| **Psychological Resource** | |
| **Cognition** | |
| **Spirituality** | Frequency of prayer (single item). Participants were asked, “How often do you pray?” Response options ranging from “1=rarely or never” to “5=several times a day.” Derived from the Duke University Religion Index [[161](#_ENREF_161)]. More frequent prayer was associated with increased risk of hypertension in AA women [[162](#_ENREF_162)]. |
| Participants were asked how often do you take part in religious services? Response options ranging from “1=rarely or never” to “5=several times a day.” |
| **Knowledge of**  **Diet and disease link** | Knowledge of diet–disease link. Participants were asked, “How strong do you think the link is between diet and each of these diseases: heart disease, type 2 diabetes, and cancer.” Response options were on a five-point Likert-type scale with 1=‘very strong’ and 5=‘very weak’ [[163](#_ENREF_163)]. |
| **Improvise** | Improvisation subscale. Six-items were used to assess participants level of agreement to their ability to improvise. Response options were (1 “very untrue”; 2 “untrue”; 3 “somewhat untrue”; 4 “neutral”; 5 “somewhat true” ; 6 “true” ; 7 “very true”). Example: When a situation arises, I usually know 2-3 different ways to handle it [[164](#_ENREF_164)].  Improvisation is a subscale of TRIOS, a 28-item measure of dimensions of African American cultural attitudes and identity. African American culture has a unique worldview that reflects the attitudes, cognitions, values, and behaviors of African American experiences in five dimensions: time, rhythm, improvisation, orality, and spirituality (TRIOS) [[164](#_ENREF_164), [165](#_ENREF_165)]. |
| **Gardening** | Frequency of Gardening. Participants were asked participants how many days have you been gardening each week in the past month? Response options were (1 “0/day” ; 2 “1/day” ; 3 “2days/week” ; 4 “3days/week” ; 5 “4days/week” ; 6 “5days/week” ; 7 “6days/week” ; 8 “7days/week”) [[166](#_ENREF_166)]. |
| **Hip-Hop** | Hip-Hop Fandom (five items). Response options were (1 “Strongly agree”; 2 “agree” ; 3 “somewhat agree” ; 4 “neither agree nor disagree” ; 5 “somewhat disagree” ; 6 “disagree” ; 7 “strongly disagree”). Example: “I listen to mostly hip-hop music.” [[167](#_ENREF_167)]. |
| **Self and Personality** | |
| **Self-Efficacy** | Self-efficacy for Eating/Cooking Fruits and Vegetables subscale. Four items were used to assess participants’ level of confidence in eating fruit or vegetables in various situations as well as their ability to cook from basic ingredients. Response options were (1 “Not at all confident”; 2 “not very confident” ; 3 “neutral” ; 4 “confident” ; 5 “extremely confident”) Example: “Eating fruits or vegetables as a snack even if everybody were eating other snacks. |
| Self-efficacy for cooking techniques and meal prep subscale. Fifteen items were used to assess participants’ level of confidence in cooking techniques and meal preparation. Response options were (1 “Not at all confident”; 2 “not very confident”; 3 “neutral” ; 4 “confident” ; 5 “extremely confident”). Example: Preparing fresh or frozen green vegetables (e.g., broccoli, spinach) [[168](#_ENREF_168), [169](#_ENREF_169)]. |
| **Big five personality** | Big Five personality (short version, ten items). Participants were asked how they would describe their personality. Response options were (1 “disagree strongly”; 2 “disagree a little” ; 3 “neither agree nor disagree” ; 4 “agree a little” ; 5 “agree strongly). Example: “ I see myself as someone who is reserved.” [[170](#_ENREF_170)]. |
| **Resilient Coping** | The Brief Resilience Coping Scale (BRCS)(four-items). Response options were (1 “Strongly agree” ; 2 “Agree” ; 3 “Neutral” ; 4 “Disagree” ; 5 “Strongly Disagree”). Example: “I believe that I can grow in positive ways by dealing with difficult situations?” [[171](#_ENREF_171)]. |
| **Response to unfair treatment** | Participants who reported experiencing everyday discrimination were asked to identify the strategy that they most commonly used to cope with discrimination from a list of 7 strategies [[172](#_ENREF_172), [173](#_ENREF_173)]. |
| **Black Identity Classification Scale** | The Revised Black Identity Classification Scale (BICS). Participants were asked ten items to assess their perceived importance of African culture in African American participants. Response options were (1 “Strongly agree” ; 2 “Agree” ; 3 “Somewhat Agree” ; 4 “Neither agree nor disagree” ; 5 “Somewhat disagree” ; 6 “Disagree” ; 7 “Strongly Disagree”). Example: “It is important to me to celebrate Kwanzaa?” [[174](#_ENREF_174)] |
| **Benevolent childhood experiences (BCEs) scale** | Benevolent childhood experiences (BCEs) scale [[175](#_ENREF_175), [176](#_ENREF_176)]. Ten questions addressing (BCEs). Response options were (1 “yes”; 2 “no”) Example: “Did you have a predictable home routine, like regular meals and regular bedtime?” Benevolent Childhood Experiences (BCEs) scale, a new instrument designed to assess positive early life experiences in adults with histories of childhood maltreatment and other adversities. A counterpart to the Adverse Childhood Experiences (ACEs) questionnaire. Higher levels of BCEs were hypothesized to predict lower levels of psycho- pathology and stress beyond the effects of ACES in a sample of ethnically diverse, low-income pregnant women [[175](#_ENREF_175), [176](#_ENREF_176)]. |
| **Hairstyle –** | Hairstyle. Participants were asked to select the hairstyle you were most often. Response options were (1 “Relaxed” ; 2 “Hair weaves or wigs” ; 3 “Hot combed/flat ironed” ; 4 “Braided” ; 5 “Locked” ; 6 “Natural” ) [[177](#_ENREF_177)]. |
| If participants indicated that they wore hair extensions, they were asked if they have a medical condition that negatively affects your hair health such as alopecia. Response options were “yes”; “no”. [[178](#_ENREF_178)] |
| **Social Relations** | |
| **Social Support**  **(in-person and online)** | Single Item Measure of Social Support (SIMSS). This single item is comprised of the question “How many people do you have near you that you can readily count on for help in times of difficulty such as watch over children or pets, give rides to hospital or store, or help when you are sick?” Response options are 0, 1, 2-5, 6-10, or more than 10. Responses of 0 or 1 indicate low tangible assistance; 6-10 or more indicate high tangible assistance[[179](#_ENREF_179)].  Although extremely short, this instrument is a strong predictor of morbidity and has good psychometric properties [[180](#_ENREF_180)]. Use of this short measure allowed us to avoid utilizing one of the much longer questionnaires on social support, thus rendering the assessment process less burdensome for our population. |
| Participants were asked which of the following, if any, do you currently own? Please select all that apply. Response options were (1 “smartphone”; 2 “tablet”; 3 “laptop”). |
| Online social support scale. Participants were asked to think about their interactions online and if any of the following has happened to them in the last two months. Response options were (1 “never”; 2 “rarely”; 3 “sometimes”; 4 “pretty often ; 5 “a lot”). Example: “People show that they care about me online”) [[156](#_ENREF_156)]. |
| **Black community activism orientation scale** | Formal political activism orientation. Eight items assess participants engagement in formal political activism. Response options were 5-point Likert-type response scale (1 “extremely unlikely”; 2 “unlikely”; 3 “equally likely and unlikely”; 4 “likely”; 5 “extremely likely”). Example: “a political even (e.g., talk, march specific to the Black Community).” This is a subscale of the Black Community Activism Orientation Scale [[181](#_ENREF_181)]. The full measure was validated in a sample of Black adolescents and emerging adults. An exploratory factor analysis (n = 446) was conducted [[181](#_ENREF_181)]. |