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I, Stephanie Castelin, hereby submit this original work as part of the requirements for the degree of Master of Arts in Psychology.

It is entitled:

Race-Related COVID Stress and Mental Health Outcomes in Black Individuals: Risk and Protective Factors

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Race-Related COVID Stress and Mental Health Outcomes in Black Individuals: Risk and Protective Factors

A thesis submitted to the
Graduate School
of the University of Cincinnati
in partial fulfillment of the
requirements for the degree of

Master of Arts

in the Department of Psychology
of the College of Arts and Sciences
by

Stephanie Castelin, B.S.

University of Cincinnati
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Abstract

The mental health of Black individuals has been disproportionately affected by the COVID-19 pandemic, likely due in part to historically-rooted stressors that lie at the intersection of the COVID-19 pandemic and racism. In this study, we examined the link between race-related COVID stress and mental health outcomes, as well as the buffering and enhancing roles of everyday discrimination, cultural mistrust, Black activism, Black identity, and spirituality/religiosity in these associations. We used data from the Alliance of National Psychological Associations for Racial and Ethnic Equity and the Association of Black Psychology's multi-state needs assessment of 2480 Black adults in the US. T-tests revealed that age, previous HBCU attendance, essential worker status, spirituality/religiosity during COVID, cultural mistrust, everyday discrimination, racial centrality, and engagement in activism are associated with race-related COVID stress endorsement. A series of regression analyses showed that endorsement of race-related COVID stress is associated with higher psychological distress and lower well-being, above and beyond several sociodemographic characteristics. Traditional culturally-specific protective factors did not buffer against the effects of race-related COVID stress on mental health. However, cultural mistrust moderated the association between race-related COVID stress and psychological distress, such that it strengthened the association. We provide recommendations for policymakers, clinicians, and researchers to consider the impact of race-related COVID stress when addressing Black mental health and well-being in the age of COVID-19.

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Table of Contents

Race-Related COVID Stress and Mental Health Outcomes in Black Individuals: Risk and Protective Factors

It is well-known that Black individuals have disproportionately suffered from the COVID-19 pandemic due to higher risk, mortality, and inequitable treatment (National Center for Immunization and Respiratory Diseases, 2021). Emerging research suggests that the disparate health impact is not only physical, but mental as well. Kujawa and colleagues (2020) have found that Black people have significantly higher pandemic-related stress than any other demographic group and that this pandemic-related stress is positively associated with anxiety and depression. African Americans are more fearful of contracting COVID-19 than White Americans, likely due to disproportionate exposure to the virus (Pew Research, 2020). Researchers have speculated that repeated and persistent exposure to the suffering of other Black individuals, by means of the pandemic, may lead to a vicarious trauma response and secondary emotional and physical symptoms (Sneed et al., 2020). Communities of color are known to experience secondary trauma during times of national distress (Liu & Modir, 2020; Novaceck et al., 2020) and COVID-19 appears to be no exception. African Americans are more likely to experience COVID-related post-traumatic stress symptoms (Shigemoto, 2021).

The disproportionate impact of COVID on the mental health of Black individuals within the U.S may be attributed to the preexisting pandemic of racism (Laurencin & Walker, 2020; Liu & Modir, 2020). The Black community has faced historical racial injustices and trauma, which has led to heightened awareness of racism's interaction with the existing pandemic (Loeb et al., 2021). Events such as the Tuskegee Syphilis Study and the HIV/AIDs epidemic, both examples of systemic failure to provide proper treatment to Black individuals with ailments due to underlying medical racism, have resulted in lingering cultural mistrust of American institutions

and historically-rooted worry regarding the treatment of Black people during the COVID-19 pandemic (Thompkins et al., 2020). As a result, African Americans fear racial bias in disease testing and treatment (Sneed et al., 2020). To date, only one study has empirically examined the intersecting effect of racism in the context of COVID on mental health. Cokley and colleagues (2021) found that race-related concerns about COVID-19 are associated with increased depression and anxiety, and that this association is partially mediated by perceived discrimination. Additional research is needed on this topic to inform policy and prevention efforts addressing vaccination outreach, healthcare services, and racial healing efforts for the betterment of the Black community. In this study, we investigated the link between mental health and stressors at the intersection of racism and COVID-19. To do so, we operationalized race-related COVID stress as stressors faced by Black individuals specifically due to being Black during the COVID-19 pandemic; such stressors include things like discrimination and reminders of historical trauma. Specifically, we hypothesized that higher levels of race-related COVID stress would be associated with greater psychological distress and decreased subjective well-being. Although racism in America is pervasive, each Black individual has had varying levels of exposure to chronic forms of racism that may alter their sensitivity to race-related COVID stress and its impact on mental health. Thus, we also hypothesized that one's personal experience with everyday discrimination and endorsement of cultural mistrust would serve as a risk factor to exacerbate the association between race-related COVID stress and mental health.

Despite the stressors Black individuals face, the Black community has shown great resilience regarding their mental health (Keyes, 2009). Physical morbidity and mortality rates among Black individuals suggest that their mental health should be far worse than what has been shown within the literature (Williams & Earl, 2007). Black people not only have lower rates of

mental disorders such as major depressive disorder, but they also demonstrate many signs of flourishing (Keyes, 2009; Williams et al., 2007). Thus, there may also be protective factors at play that are able to mitigate the effects of racism on mental health. Previous research has found that Black identity, Black activism, and spirituality/religiosity have all been shown to buffer the effects of racism and/or discrimination on mental health (Bierman, 2006; Sellers & Shelton, 2003; Watson-Singleton et al., 2020). We suspected that likewise, these factors would also buffer the association between race-related COVID stress and Black mental health. With the identification of these factors, researchers and clinicians may direct their attention to mitigating the impact of such stressors on mental health.

Risk Factors

In addition to race-related COVID stress, an acute stressor, Black individuals continue to face other forms of individual, cultural, and structural racism that have contributed to mental health disparities seen prior to the COVID-19 pandemic (Liu & Modir, 2020). Research has shown that chronic racial stressors may exacerbate the impact of acute stressors (Williams et al., 2003). However, further research examining the intersection of chronic and acute racial stressors is needed (Williams et al., 2003), and this is true especially within the context of COVID-19. Therefore, we examined how chronic manifestations of racism- everyday discrimination and cultural mistrust- impact associations between race-related COVID stress and mental health.

Everyday Discrimination

Black individuals face persistent everyday injustices, due to their race, known as everyday discrimination (Williams et al., 1997). Everyday discrimination has consistently been shown to have negative impacts on both positive and negative aspects of well-being across the lifespan (Paradies et al., 2015; Priest et al., 2013; Schmitt et al., 2014; Williams et al., 2003).

Specifically, racial discrimination has been most frequently associated with increased anxiety, depression, and distress, as well as lowered self-esteem and life satisfaction (Paradies et al., 2015). Whereas everyday discrimination is a chronic stressor, these associations may further extend to the acute context of COVID-19 . Everyday discrimination is particularly relevant in the context of COVID-19 due to recent increased awareness of racial discrimination brought on by national coverage of the murders of George Floyd, Breonna Taylor, Rayshard Brooks, and hundreds of other Black individuals in 2020 (Lipscomb & Ashley, 2020). Thus, everyday discrimination's salience during the COVID-19 pandemic makes it likely to have worsened the already negative impact of race-related COVID stress on mental health. In this study, we examined whether increased everyday discrimination exacerbates the association between race-related COVID stress and psychological distress and well-being.

Cultural Mistrust

Unlike everyday discrimination which captures direct experiences of racism, cultural mistrust is a byproduct of historical racism. Cultural mistrust refers to the mistrust an individual holds towards societal institutions (e.g., healthcare, criminal justice) due to historical and continuous mistreatment (Grier & Cobbs, 1968; White, 1980). Generally, Black individuals endorse high levels of mistrust towards the medical system due to historic harm (Alang et al., 2020). Outside of the context of COVID-19, cultural mistrust has been shown to have significant impacts on Black health, including reduced mental health seeking behaviors (Dean et al., 2018), engagement in routine healthcare (Brenick et al., 2017), non-clinical paranoia (Whaley, 2002), and psychological well-being (Bell & Tracey, 2006). Thus, as general cultural mistrust outside of the context of COVID-19 has impacts on one's mental health and well-being, it may also exacerbate the impacts of acute race-related COVID stress (Williams et al., 2003). Further

adding to our rationale, cultural mistrust is associated with increased perceived racism (Terrell & Terrell, 1981). Thus, increased levels of cultural mistrust may further increase awareness of the ways in which racism has impacted the COVID-19 pandemic and magnify resulting distress. Therefore, we hypothesized that cultural mistrust would exacerbate the negative impacts of race-related COVID stress on mental health outcomes.

Protective Factors

Despite increased stressors due to racism, Black individuals are known to be very resilient (Keyes, 2009). Traditional resilience factors such as social support, cognitive abilities, and familial factors are known to contribute to the resilience of Black indiviudals (Utsey et al., 2007). Culturally-specific factors, such as spiritual coping, contribute to the resilience of Black individuals even more so (Utsey et al., 2007). The resilience of Black individuals has remained steadfast as they have been shown to have relatively high levels of resilience during the pandemic, as compared to Whites (Riehm et al., 2021). Religion, physical activity, and hope have been cited as facilitators to coping during the COVID-19 pandemic (Bateman et al., 2021); however, there is little research that has examined additional protective factors for the Black community during COVID-19. To our knowledge, there is also no research that has examined protective factors against the syndemic effect of race-related COVID stress on the mental health of Black individuals during COVID-19. Therefore, we also examined the impact of known culture-specific protective factors, namely Black identity, Black activism, and spirituality/religiosity, on the relation between race-related COVID stress and mental health.

Black Identity

The Multidimensional Model for Racial Identity states that Black racial identity is characterized by the quality and quantity of meaning a Black individual gives to their

membership in their racial group (Sellers et al., 1998). Research has found that Black identity is a useful cultural coping tool in that it is often associated with favorable mental health outcomes. Black identity is predictive of decreased psychological distress, and other indicators of psychopathology, such as substance abuse (Banks et al., 2021; Chae et al., 2011). It has also been shown to be associated with indicators of positive mental health, such as psychological and emotional well-being (Mushonga & Henneberger, 2020; Smith & Silva, 2011).

The relation between Black identity and mental health is shown to be complex when subsequently considering the role of discrimination and racism. Ashburn-Nardo and colleagues (2007) found that there are three conflicting models of the role racial identity may play in the relation between discrimination and mental health- (1) Black identity as an antecedent to discrimination, and later leading to distress, (2) Increased Black identity as a consequence of discrimination, and later leading to distress or (3) Black identity as a buffer against the psychological distress occurring with discrimination. Ashburn-Nardo and colleagues (2007) found support for all three models, however they note that the benefits of Black identity outweigh the negatives. For example, Black identity is associated with increased discrimination, likely due to greater awareness of discrimination (Chae et al., 2017; Sellers & Shelton, 2003; Sellers et al., 2006). However, there is overwhelming support that Black identity is also a protective factor against the effects of discrimination and other race-related stressors on psychological distress, anxiety, depression (Banks & Kohn-Wood, 2007; Bynum et al., 2008; Chae 2007; Chae, 2011; Jones et al., 2007; Sellers & Shelton, 2003; Sellers et al., 2006). Thus, we suspected that stronger Black identity would serve as a protective factor against reduced psychological distress and increased well-being associated with race-related COVID stress.

Black Activism

Black activism is seldom studied within the field of mental health (Hope et al., 2018). Of the research that is available, most of the evidence supports that Black activism may be a protective factor against the effects of racism (Al'Uqdah & Adomako, 2017; Grayman-Simpson, 2021; Mekawi et al., 2021). Several researchers have found that race-related stress predicts Black activism, likely as a natural active coping response (Krueger et al., 2021; Prosper et al., 2021; Szymanski & Lewis, 2014). 50 qualitative interviews completed by Grayman-Simpson (2012) revealed that Black community involvement is associated with higher subjective well-being, including social, psychological, and emotional well-being. More specifically, activism can provide empowerment, gather social support, and increase well-being in times of grief and pain (Al'Uqdah & Adomako, 2017).

Activism has historically been a response to years of race-related discrimination and injustice that has assisted in bringing both individual and community healing (Al'Uqdah & Adomako, 2017). Watson-Singleton and colleagues (2020) found that racial discrimination was only associated with depressive symptoms at low levels of Black Lives Matter support, indicating a buffering effect of activism. Their findings are likely explained by race-based coping's ability to buffer discrimination's negative impacts on mental health (Mekawi et al., 2021). In contradiction, one group of researchers found that higher activism exacerbates the association between microaggressions and resulting anxiety and stress (Hope et al., 2018). However, the generalizability of their study is limited as it only applies to college students experiencing microaggressions at a Predominately White Institution (Hope et al., 2018). Being that there are very few studies examining the buffering effects of activism on race-related stressors, and no studies examining this in the context of COVID-19, we aimed to clarify the role

of activism as a protective factor. We hypothesized that activism would moderate the relation between race-related COVID stress and mental health, such that there would be a buffering effect against high psychological distress and low well-being.

Religiosity and Spirituality

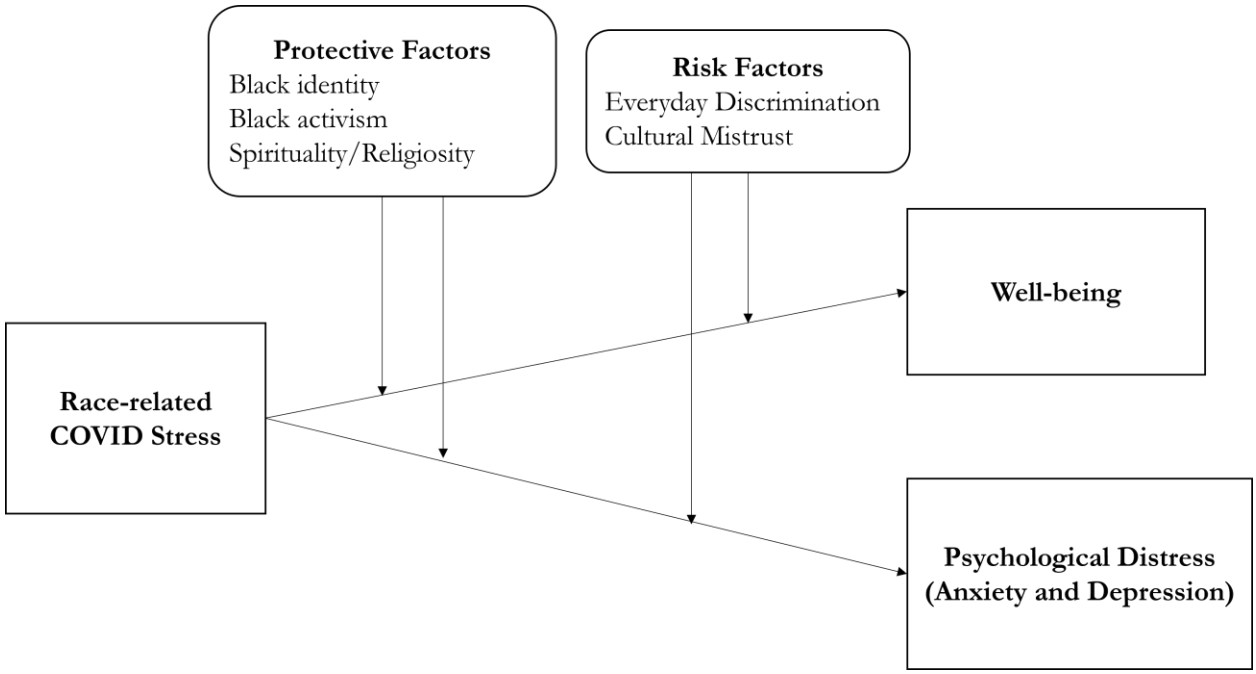
Religiosity/spirituality is a well-known protective factor from psychological distress in Black individuals. A large meta-analysis has shown that religiosity has strong associations with positive indicators of mental health, and that this effect is even larger in Black populations compared to other demographics (Hackney & Sanders, 2003). Religiosity and spirituality have been directly linked to psychological well-being in Black women (Reed & Neville, 2014). Religion has shown positive outcomes on physical health, mental health, well-being, and social functioning for Black individuals (Taylor et al., 2003). Religious service attendance has also been found to buffer the effects of discrimination on negative affect (Bierman, 2006). The impact of religious service attendance is likely due to the historical value of the Black church in providing resources to cope with and fight against discrimination (Bierman, 2006). Some spiritual/religious factors associated with coping with racial discrimination within the Black community include prayer, working harder, and use of support systems available (Hayward & Krause, 2015). Due to the support for spirituality and religiosity as protective factors against other forms of race-related stress, we investigated the buffering role of spirituality/religiosity during COVID-19 in the hypothesized relation between race-related COVID stress and mental health outcomes. Spirituality/religiosity was expected to moderate the relation between race-related COVID stress and mental health, such that there would be a buffering effect against high psychological distress and low well-being.

The Current Study

In sum, the purpose of this study was to examine the impact of race-related COVID stress on the mental health of Black individuals. Moreover, we also examined the role of culturally-specific risk (i.e., everyday discrimination) and protective factors (e.g., religious involvement, Black identity, and Black activism) in this relation. We proposed the following model:

Figure 1

Proposed Model



We hypothesized:

1. Endorsement of race-related COVID stress would be associated with increased psychological distress and lower well-being.
2. Everyday discrimination and cultural mistrust would moderate the relation between race-related COVID stress and mental health, such that they would strengthen this association (i.e., even greater psychological distress and lower well-being).

3. Black identity, Black activism, and spirituality/religiosity would moderate the relation between race-related COVID stress and mental health, such that they would weaken this association (i.e., less psychological distress and greater well-being).

Through this research, we aimed to fill a gap in the literature by examining how COVID-19 interacts with racism, thereby resulting in the increased psychological distress and lower well-being seen within the Black community during the pandemic (Kujawa et al., 2020; Shigemoto, 2020). We also further examined the role of suspected risk and protective factors in this relation. Racial trauma has been proposed to be a critical factor facing communities of color during the pandemic (Liu & Modir, 2020). Thus, we aim to provide empirical support for the importance of considering racism, and its moderating factors, in the disproportionate impact of COVID-19 on Black mental health.

Methods

Study Design

Data were collected from The Association of Black Psychologists' (ABPsi) COVID-19 Needs Assessment of the Mental Health Impact of COVID-19 on Blacks Living in the U.S. The association surveyed a cross-sectional sample of Black/Africana adults drawn from a multi-state Qualtrics panel.

Participants

The total sample consisted of 2480 participants that self-identified as Black/Africana (i.e., Black, Black American, African American, African, Afro-Caribbean, Afro-Latinx, etc.) who were participants in a multi-state online survey. However, the sample size varied by analysis due to missing data among covariates, which is specified in the results. All participants were 18 years

or older and had been living in the U.S. at least since the last quarter of 2019. Of the participants who reported their gender identity, there were 763 men (30.8%), 1698 women (68.5%), nine non-binary/gender fluid individuals (<1%), and five transgender individuals (<1%). Participants lived in the primary study states/regions of California, the District of Columbia, Louisiana, Maryland, Michigan, the Mississippi Delta, and Texas. The aforementioned states/regions were selected for their inclusion of cities/counties containing COVID-19 hotspots, a high concentration of Black residents, and/or to diversify the types of regions chosen (e.g., rural, urban), based on location and population size. Respondents were also sampled from three convenience states: Georgia, Florida, and Ohio.

Measures

Race-Related COVID Stress

Race-related COVID stress was measured using 8 conceptually similar items that examined participants worries and stressors at the intersection of COVID-19 and racism. Participants were given a checklist of several stressors and asked to indicate which items they have worried, stressed, or thought about during the COVID-19 pandemic. Race-related COVID stress included items like "COVID-19 was like the Tuskegee (syphilis) Experiment" and "Discrimination due to my race [from the COVID-19 outbreak]". See Appendix A for the full set of items. Each item captured a different source of race-related COVID stress experienced during the pandemic and was coded as 1. We computed the race-related COVID stress variable in 2 different ways. A dichotomous version of the variable was used to conduct all the main analyses, such that participants were coded to either have endorsed at least 1 race-related COVID stressor or not. The dichotomous measure was dummy coded so that no endorsement of race-related COVID stress was coded as 0 and endorsement of race-related COVID stress was coded as a 1.

We also computed a continuous measure of the scale such that all the items were summed to produce scores ranging from 0 to 8, with higher scores indicating greater race-related COVID stress. The continuous measure was only used to examine whether the number of sources of race-related COVID stress was a significant predictor of the outcome variables in a post-hoc exploratory analysis. The scale showed adequate internal reliability, with a Cronbach's alpha of .63.

Psychological Distress

The 4-item version of the Patient Health Questionnaire (PHQ-4) was used to measure psychological distress (Kroenke et al., 2009). The PHQ-4 combines the Patient Health Questionnaire-2 (PHQ-2) and the Generalized Anxiety Disorder-2 (GAD-2) to screen for symptoms of anxiety (2-items) and depression (2 items). Participants were asked how often they have been bothered by specific symptoms within the past 2 weeks. Response options were 0- Not at all, 1- Several days, 2- More than half the days, and 3- Nearly every day, such that higher scores indicate more frequently occurring symptoms. The PHQ-4 is a well-validated measure of depression and anxiety with good construct validity and factorial validity of its subscales and overall scale (Kroenke et al., 2009; Löwe et al., 2010). It also has good internal consistency for anxiety (α=.82), depression (α=.75), and the overall scale (α=.78) (Löwe et al., 2010). Overall scale scores were calculated by summing all 4 items, resulting in an overall range of 0-12. In this study, the Cronbach's alpha for this scale was .88, indicating good internal consistency.

Subjective Well-Being

Subjective well-being was measured using 2 items from the Medical Outcomes Study (MOS) 20-Item Short Form Health Survey (SF-20) (Ware et al., 1992). Participants were asked how much of the time they felt like (1) a happy person and (2) calm and peaceful since COVID-

19 began. Participants were asked to choose from one of the following answer choices: 1- All of the time, 2- Most of the time, 3- A good bit of the time, 4- Some of the time, 5- A little of the time, or 6- None of the time. Items were reverse coded and rescaled to range from 0-100 so that higher scores indicated greater well-being. Both items were averaged so that the overall scale score ranged from 0-100. In this study, we interchangeably use subjective well-being and well-being. The scale was internally consistent with a Cronbach alpha of .82 in this study.

Everyday Discrimination

Everyday discrimination was measured using the 10-item expanded version of the Everyday Discrimination Scale (Williams et al., 1997). The scale measures experiences of everyday discrimination by asking participants to indicate how often they have experienced various examples of discrimination in their day-to-day life (e.g., being followed in stores). Responses options were: 0- Never, 1- Less than once a year, 2- A few times a year, 3- A few times a month, 4- At least once a week, or 5- Almost everyday. Responses were averaged across the scale so that overall scale scores range from 0 to 5, with higher scores indicating more frequent experiences of discrimination. The everyday discrimination scale has been shown to demonstrate good internal consistency (α=.93) and construct validity (Kessler et al., 1999; Taylor et al., 2004). In this analysis, the everyday discrimination scale showed high internal consistency (α=.92).

Cultural Mistrust

Cultural Mistrust was measured using the Revised Cultural Mistrust Inventory (CMI; Irving, 2002). The scale consisted of 10 items assessing participants' beliefs, opinions, and attitudes regarding mistrust towards the dominant culture (i.e., White individuals) in a variety of domains. Sample items included "White teachers teach subjects so that it favors whites" and

"Whites deliberately pass laws designed to block the progress of Blacks." Participants indicated the extent to which they agree or disagree with each statement, with responses ranging from 1- Strongly Disagree to 7- Strongly Agree. Participant responses were summed so overall scale scores ranged from 10 to 70, with higher scores indicating higher levels of mistrust. The developers of the revised CMI demonstrated the scale's internal reliability ($\alpha = .91$) and factorial validity (Irving, 2002). In this study, the Cronbach's alpha for this scale was .81, indicating good reliability.

Black Identity

The Multidimensional Inventory of Black Identity was used to measure Black identity (Sellers et al., 1998). Specifically, the 8-item centrality subscale and a shortened 3-item private regard subscale were used. Participants were asked to identify the extent to which they agree or disagree with a variety of statements regarding Black identity. The centrality subscale measures the extent to which an individual holds their race as a strong part of their self-concept. Sample items include: "In general, being Black is an important part of my self-image" and "I have a strong attachment to other Black people." Private regard measures how favorably an individual views their race, specifically, other Black individuals and their own membership. Sample items include: "I feel good about Black people," and "I am proud to be Black." Each subscale will be used individually. Responses ranged from 1-Strongly disagree to 7- Strongly agree, such that higher scores indicate higher levels of centrality or private regard. Responses were averaged across items for both the centrality and private regard subscales. The MIBI has been shown to have good reliability with original Cronbach alpha reliability being .77 for centrality and .60 for private regard. In this study, the internal consistency is adequate with a Cronbach alpha of .70 for Centrality and .84 for Private Regard.

Black Activism

Black activism was measured using 4 items adapted from the Multidimensional Measure of Black Activism scale (MMBA; Thomas, 2001). Participants were asked to what extent they were involved in a variety of activities related to involvement in the Black community and issues within the past year). Activities included items such as "Been involved in a program, project, group, and/or organization geared towards helping or uplifting the Black community?" Response options were 1- Frequently, 2-Occasionally, 3- Once in a while, and 4- Never. Responses were subsequently reverse coded so that higher responses indicate more Black involvement. All items were averaged to determine the overall scale score. The Cronbach alpha was .83 in this study, indicating good internal reliability.

Spirituality/Religiosity

Spirituality/Religiosity was measured using 5 conceptually similar items that examined engagement in spiritual/religious practices during COVID-19. Participants responded to a checklist of items assessing coping strategies, thoughts, and activities engaged in during the COVID-19 pandemic. Items included "Religious or spiritual practices (praying, reading religious texts) [to cope with COVID-19]" and "I smudged or cleaned myself spiritually to help me or my family through the stress caused by coronavirus." Each stressor endorsed was coded as 1 for a maximum total score of 5 and minimum score of 0. The variable was then dichotomized so that those who endorsed at least 1 stressor was considered to have engaged in spiritual/religious practices and those with a score of 0 was considered to have not engaged in spiritual/religious practices. Cronbach's alpha was .63, demonstrating adequate reliability.

Procedures

The University of Cincinnati's IRB deemed this study non-human subjects research due to our use of deidentified secondary data. The original study protocol was approved by The MayaTech Corporation's IRB, Protocol No. 2020-001. Participants were recruited through Qualtrics LLC's survey panel. After receiving the survey link, participants completed the survey using Qualtrics. The survey was conducted from February 1, 2021- March 31, 2021. All participants consented to be a part of the study after reading a digital consent form and confirmed that they met all eligibility requirements before beginning the survey. The survey collected information regarding a large variety of indicators. For the purpose of this study, we extracted data regarding race-related COVID stress, perceived discrimination, cultural mistrust, spirituality/religiosity, Black activism, Black identity, subjective well-being, psychological distress, and participant demographics. The original research team ensured quality control of the data and participant eligibility by applying industry standards for use of Qualtrics panels. The data was analyzed using the Statistical Package for the Social Sciences (SPSS), version 28.

Results

Data Management

We screened the data for missing cases and normality. Analysis of missing data indicated that 2.25% of all items for all participants were missing, and 25% of the variables were not missing data for any participant. 86.53% of participants had no missing data. Little's MCAR Test was significant, indicating the data was not missing completely at random, $\chi 2(238) = 432.26$, $p<.001$. No single item within a scale had a level of missingness over 5.9%, indicating minimal missingness (Montelpare, n.d.). Monotone patterns of missingness were also observed, indicating missingness is dependent upon other observed variables within the dataset (Schafer &

Graham, 2002). Due to the low level of missingness and our ability to explain the missingness with observed variables in the dataset, we determined the data to be missing at random and used mean imputation to account for the missingness (Peugh & Enders, 2004, p. 526). We did not impute any categorical variables or sociodemographic covariates, such as age and income since these were single-item measures. We did, however, use imputation to compute the continuous race-related COVID stress score, and then converted it to a dichotomous measure.

Assumptions of univariate normality were met for skewness and kurtosis (skewness < 3, kurtosis < 10). The data met the assumption of independent residuals (Durbin-Watson values: 1.95 (psychological distress model) and 2.02 (well-being model). Assumptions of multivariate normality, linearity and homoscedasticity were met by examining normal P-P, residual, and scatter plots. We detected the presence of outliers using criteria set forth in the work of Barbara and colleagues (2001). Overall, less than 0.5% of the data was indicative of further evaluation as an outlier when examining Cook's Distance, Mahalanobis distance, and studentized deleted residuals. Due to desired response variability, caution to the removal of outliers (Gress et al., 2018), and the tolerability of minimal outliers within large sample sizes (Pallant, 2016), we decided to retain all cases. None of the variables were correlated with one another above the threshold of .8, indicating no multicollinearity.

Sample Characteristics and Associations with Race-Related COVID Stress

40.9% and 40.2% of the participants met criteria for a clinically significant level of depression and anxiety symptoms, respectively. 24.3% of participants had been previously diagnosed with a depression, anxiety, or substance use disorder. 63.1% of the sample endorsed at least one race-related COVID stressor. The remaining statistics regarding sample characteristics may be found in Table 1. Additional analyses were also conducted to determine differences in

participant characteristics of those who endorsed race-related COVID stress as compared to those who did not endorse this stress. An independent samples T-test determined that those who endorsed race-related COVID stress tended to be older in age and had higher levels of cultural mistrust, everyday discrimination, racial centrality, and participation in activism (see Table 2). A Pearson chi-square test also found that they were more likely to be essential workers (X^2 [1, N = 2480] = 7.04, $p < .01$), to have previously attended an HBCU (X^2 [1, N = 2448] = 45.84, $p < .001$), and to have engaged in spiritual/religious practices during the pandemic (X^2 [1, N = 2480] = 64.41, $p < .001$).

Table 1

Characteristics of the study sample (n=2480)

Variable	**n (%) or mean ± SD**	**Variable**	**n (%) or mean ± SD**
Age (n=2467)	36.4 ± 14.84	Education Level	
Gender		Less than 9th grade	8 (0.3%)
Men	763 (30.8%)	Some high school	127 (5.1%)
Women	1698 (68.5%)	High school graduate or GED	608 (24.5%)
Nonbinary/Gender fluid	9 (0.4%)	Technical, trade, or vocational	112 (4.5%)
Transgender	5 (0.2%)	Some college, but degree not received or is in progress	570 (23.0%)
Prefer not to answer	5 (0.2%)	Associate degree	293 (11.8%)
Partner Status		Bachelor's degree	417 (16.8%)
Married/ domestic partnership	748 (30.2%)	Some graduate school, but no degree earned	49 (2.0%)
Not currently partnered	1718 (69.3%)	Graduate degree	289 (11.7%)
Prefer not to answer	14 (0.6%)	Missing	7 (0.3%)
Household Income		Essential Worker	

Variable	n (%) or mean ± SD	Variable	n (%) or mean ± SD
Less than $5,000	307 (12.4%)	Yes	657 (26.5%)
$5,001-$12,000	248 (10.0%)	No	1823 (73.5%)
$12,001-$24,999	336 (13.5%)	HBCU Attendance	
$25,000-$34,999	308 (12.4%)	Attended	516 (20.8%)
$35,000-$49,999	274 (11.0%)	Did not attend	1932 (77.9%)
$50,000-$74,999	364 (14.7%)	Missing	32 (1.3%)
$75,000-$99,999	226 (9.1%)		
$100,000-$149,999	147 (5.9%)		
$150,000-$199,999	86 (3.5%)		
$200,000+	64 (2.6%)		
Missing	120 (4.8%)		

Table 2

Independent Samples T-Test of Cultural Factors by Race-Related COVID Stress Endorsement

	No Race-related COVID Stress		Race-related COVID Stress		
	M	SD	M	SD	*t*(2478)
Cultural Mistrust[a]	4.31	1.00	4.69	1.02	-9.09**
Everyday Discrimination	1.39	1.22	2.00	1.25	-11.83**
Racial Centrality	4.63	1.15	4.87	1.06	-5.40**
Activism	1.80	0.78	2.21	0.83	-12.02**

***p*<.001.

[a] Welsch test is reported because Levene's test indicated that the homogeneity of variances assumption was not met for this variable.

Race-Related COVID Stress, Psychological Distress, and Subjective Well-Being

We hypothesized that race-related COVID stress would be positively associated with psychological distress and negatively associated with subjective well-being. To test this hypothesis, we conducted independent regression analyses between (1) race-related COVID stress and psychological distress and (2) race-related COVID stress and subjective well-being. Age, gender, household income, education level, essential worker status, and partner status were included as covariates in both analyses at the second step. Due to missing data within the covariates, the sample size for this analysis was 2320.

Race-related COIVD stress (coded as 0-did not endorse race-related COVID stress, 1=endorsed race-related COVID stress) was positively associated with psychological distress, β= .18, t(2312)=9.10, p<.001, such that those who experienced stressors at the intersection of racism and COVID (M=5.17, SD=3.86) had higher levels of psychological distress than those who did not (M=3.47, SD=4.01). The total model (race-related COVID stress and all the covariates entered) accounted for 14% of the variance in psychological distress, with race-related COVID stress accounting for 4% of the variance in psychological distress alone. Further analyses showed that this effect was also significant for both depression, β= .15, t(2312)=7.57, p<.001, and anxiety, β= .18, t(2312)=9.22, p<.001. Significant covariates in the relation between race-related COVID stress and psychological distress were age, β= -.28, t(2312)=-14.25, p<.001, gender, β=.06, t(2312)=3.10, p<.01, education, β= -.06, t(2312)=-2.79, p<.01, and income level, β= -.07, t(2312)=-3.08, p<.01. Essential worker status was only a significant covariate in the depression subscale of psychological distress β= -.04, t(2312)=-2.43, p<.05.

Race-related COVID stress (coded as 0-did not endorse race-related COVID stress, 1=endorsed race-related COVID stress) was negatively associated with well-being, β= -.05,

t(2312)=-2.31, p<.05. Participants who endorsed race-related COVID stress (M=55.49, SD=26.55) had significantly lower levels of well-being than those who did not endorse race-related COVID stress (M=57.87, SD= 27.09). The total model (race-related COVID stress and all the covariates entered) accounted for 1% of the variance in well-being. Race-related COVID stress accounted for 0.2% of the variance in well-being alone. Gender was the only significant covariate in this analysis.

After establishing that race-related COVID stress significantly contributes to mental health outcomes, we conducted additional post-hoc analyses to determine whether the number of sources of race-related COVID stress was uniquely predictive of mental health outcomes. We used linear regression to examine the relation between a continuous measure of race-related COVID stress and the mental health outcomes (psychological distress and well-being) for those who had experienced at least 1 race-related COVID stressor. Age, gender, household income, education level, essential worker status, and partner status were included as covariates in the analysis. Higher endorsement of race-related COVID stress was associated with higher levels of psychological distress for those who experienced at least 1 race-related COVID stressor, B =0.31 (SE = 0.07), β = .12, t(1459) = 4.74, p <.001. However, this relation was not significant when well-being was used as the outcome variable, B =-0.11 (SE = 0.48), β = -.006, t(1459) =-0.25, p =.81.

Moderators of Race-Related COVID Stress

We conducted moderation analyses using the PROCESS Macro by Hayes (2018) to detect whether the proposed moderators (centrality, private regard, spirituality/religiosity, activism, everyday discrimination, and cultural mistrust) moderate the relation between race-related COVID stress and mental health outcomes (psychological distress and well-being). We

conducted our moderation analyses using a 95% confidence interval and 5,000 bootstrap resamples. We entered race-related COVID stress as the independent variable (X), the proposed moderator as the moderator (W), and psychological distress or well-being as the dependent variable (Y). We entered significant covariates in the direct relation between race-related COVID stress and the outcome variable observed in the analyses of main effects. For psychological distress, the significant covariates were race, gender, education, and income, reducing the sample size to 2328 (due to missing data in the covariates). For well-being, the significant covariate was gender, reducing the sample size to 2461. To test for moderation, we examined the interaction term (X*M) such that significance would indicate moderation had occurred. If the test supported evidence for moderation, we then probed the interaction term by examining the conditional effects of the moderator on the outcomes at both levels of race-related COVID-stress endorsement. We hypothesized that racial identity (racial centrality and private regard), spirituality/religiosity, and activism would buffer the impact of race-related COVID stress on negative mental health outcomes (reduce psychological distress and increase psychological well-being). We also hypothesized that everyday discrimination and cultural mistrust would enhance the impact of race-related COVID stress on mental health outcomes (increase psychological distress and reduce psychological well-being).

As indicated by insignificant interaction terms, none of the proposed moderators significantly moderated the association between race-related COVID stress and well-being, including racial centrality, B =0.31 (SE = 1.00), t(2456) = 0.31, p=.31, private regard, B =0.37 (SE = 0.88), t(2456),= 0.43, p=.67, activism, B =1.86 (SE = 1.39), t(2456) = 1.33, p=.18, spirituality/religiosity, B =1.47 (SE = 2.26), t(2456) = 0.65, p=.52, everyday discrimination, B =0.58 (SE = 0.91), t(2456) = 0.63, p=.52, and cultural mistrust, B =0.44 (SE = 1.11), t(2456) =

0.40, *p*=.69. Most of the proposed moderators in the association between race-related COVID stress and psychological distress were insignificant, including racial centrality, *B* =-.006 (*SE* = 0.14), *t*(2320) = -0.04, *p*=.97, private regard, *B* =0.006 (*SE* = 0.12), *t*(2320) = 0.05, *p*=.96, activism, *B* =0.11 (*SE* = 0.20), *t*(2320) = 0.55, *p*=.58, spirituality/religiosity, *B* =0.28 (*SE* = 0.32), *t*(2320) = 0.87, *p*=.39, and everyday discrimination, *B* =0.18 (*SE* = 0.12), *t*(2320) = 1.45, *p*=.15.

However, cultural mistrust significantly moderated the association between race-related COVID stress and psychological distress, R^2 = .15, *F*(7, 2320) = 56.89, *p*<.001, as indicated by a significant interaction term, B =0.37 (SE = 0.16), t(2320) =-2.35, *p*< .05. All the model coefficients, including covariates can be found in table 3. The interaction term significantly accounts for an additional 0.2% of the variance in psychological distress, R^2 Δ=.002, p<.05. Simple slope analyses showed that there is a significant positive relation between cultural mistrust and psychological distress for those who endorsed race-related COVID stress, B =0.294 (SE = 0.094), β = .079, t(1465) = 3.13, *p*<.01. However, there is no significant association between cultural mistrust and psychological distress for those who did not endorse race-related COVID stress, B =-0.083 (SE = 0.128), β = -.021, t(851) = -0.652, *p*=.52. Thus, higher levels of cultural mistrust significantly increased one's level of psychological distress only for those with high levels of race-related COVID stress, as seen in figure 2.

Table 3

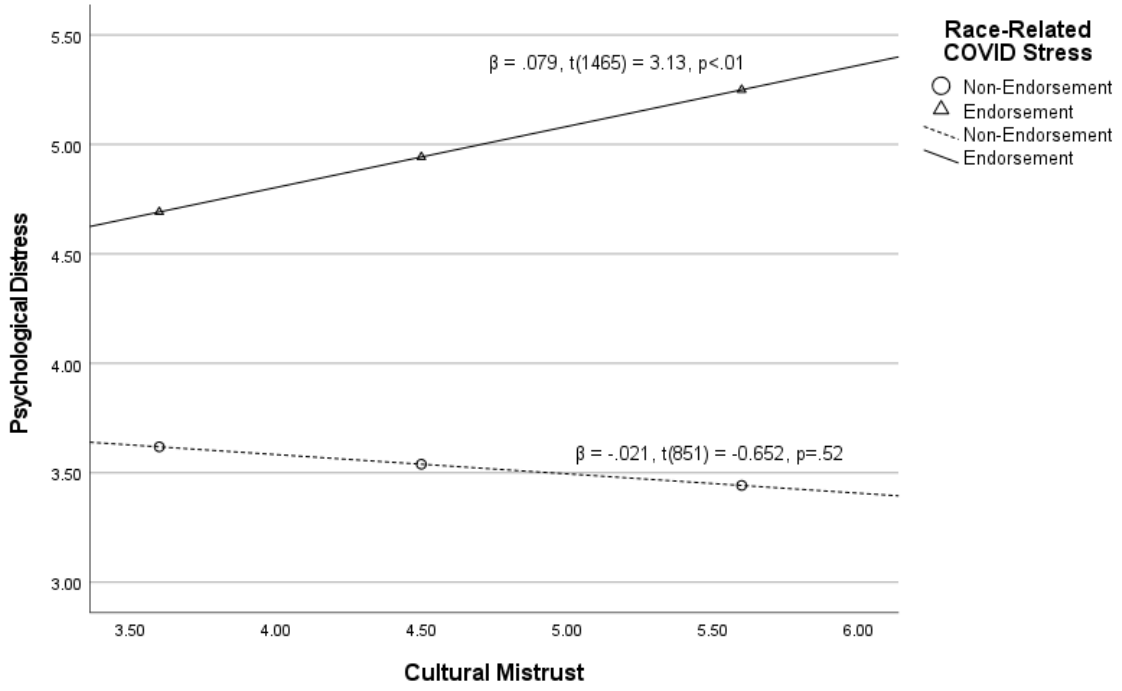
Regression Coefficients for Moderation of Race-Related COVID Stress and Psychological Distress by Cultural Mistrust

Predictor Variable	B	*SE B*	*t*	*p*
Constant	7.59	.62	12.25	<.001**
Gender	0.46	.17	2.79	<.01**
Age	-0.08	.01	-14.55	<.001**
Education	-0.13	.04	-3.05	<.01**
Income	-0.11	.04	-3.16	<.01**
Race-Related COVID Stress	-0.25	.72	-0.35	.73
Cultural Mistrust	-0.09	.13	-0.70	.48
Race Related COVID Stress X Cultural Mistrust	.0.37	.16	2.35	.02*
		R^2 = .15, F(7, 2320) = 56.89, p<.001		

*p<.05, **p<.001.

Figure 2

Simple Slope Graph of the Cultural Mistrust Moderation



Discussion

The COVID-19 pandemic has been shown to widen physical and mental health inequities affecting Black individuals. Researchers have theorized that stress from the COVID-19 pandemic may interact with historical and present-day race-related stressors facing the Black community to present a unique experience of stress fueling health disparities (Liu & Modir 2020; Novaceck et al., 2020). In this study, we examined how stress at the intersection of racism and COVID impacted the mental health of Black individuals during the pandemic. Preliminary analyses of race-related COVID stress' associations with demographic and cultural variables showed that greater age, cultural mistrust, everyday discrimination, racial centrality, and engagement in activism were associated with race-related COVID stress endorsement. Endorsement of previous HBCU attendance, spirituality/religiosity during COVID, and essential worker status were also associated with endorsement of race-related COVID stress. Our first hypothesis was supported as results showed that positive endorsement of race-related COVID stress was predictive of higher psychological distress and lower well-being, above and beyond significant sociodemographic characteristics (gender, race, education, and income for psychological distress; gender for well-being). We also examined how the *amount* of stress sources impacts mental health, beyond binary endorsement, by testing these associations only for those who endorsed at least one stressor. In this subsample, race-related COVID stress was still positively associated with psychological distress, but not well-being. Finally, we examined the impact of traditional culturally-relevant risk and protective factors in the direct associations between race-related COVID stress and mental health outcomes. We hypothesized that everyday discrimination and cultural mistrust would enhance one's risk of exhibiting greater psychological distress and lower well-being when endorsing race-related COVID stress, and that

Black activism, Black identity, and spirituality/religiosity would mitigate this risk. Cultural mistrust was the only risk factor identified as mistrust strengthened the existing association between race-related COVID stress and mental health outcomes. Greater cultural mistrust was associated with increased psychological distress only in those who endorsed race-related COVID stress. Everyday discrimination, Black activism, Black identity, and spirituality/religiosity did not exacerbate nor buffer these associations.

As one of the first studies to empirically examine race-related COVID stress' associations with mental health, our findings demonstrate the importance of considering how the dual pandemics of racism and COVID-19 interact to create a unique form of stress (beyond racism or COVID-19 alone) that may impact mental health. Furthermore, race-related COVID stress' associations with psychological distress and well-being above and beyond sociodemographic characteristics demonstrate that mental health inequities during COVID-19 extend beyond socioeconomic lines. Therefore, in order to fully improve mental health outcomes within the Black community during COVID-19 pandemic and its aftermath, mental health professionals must address race-related COVID stress. Race-related COVID stress may be attributed to a combination of a longstanding history of racism in the U.S and a recent increase in its awareness along with the simultaneous rise of the COVID-19 pandemic (Cokley et al., 2021; Lipscomb & Ashley, 2020). Our results are consistent with theory that describes race-related stress as a significant factor in the mental health of Black individuals during times of national distress, including the COVID-19 pandemic (Liu & Modir, 2020; Novaceck et al., 2020).

Our findings showed that for those who endorsed at least one stressor, race-related COVID stress was still positively associated with psychological distress, but not well-being. These findings indicate that in addition to whether one endorses race-related COVID stress or

not, the number of sources of race-related COVID stress is also predictive of psychological distress, suggesting a potential compounding effect as the number of sources of race-related COVID stress experienced rises. However, the amount of stress sources does not play a role in impacting well-being, only whether one endorses race-related COVID stress or not. Our observation of race-related COVID stress' differential associations with psychological well-being and psychological distress is consistent with existing literature examining the constructs of psychological well-being and distress. Well-being and psychological distress have been shown to have unique drivers and differential consequences (Huppert, 2009). Tests of discriminant validity have also shown that psychological well-being and psychological distress are two distinct indicators of mental health, rather than opposite ends of a spectrum, as the absence of psychopathology does not indicate positive feelings and optimal functioning and vice versa (Lamers et al., 2011). Though race-related COVID stress was associated with overall mental health (both well-being and distress), it had the greatest impacts on psychological distress.

Whereas majority of the sample endorsed at least one race-related COVID stressor, there is still a large group of individuals that did not endorse any race related COVID stress (36.9%). As indicated in the sample variability and our analysis of sample characteristics, older individuals, individuals who have previously attended an HBCU, and essential workers are more likely to experience race-related COVID stress, and hence its associated mental health outcomes. In addition, a variety of culturally-specific factors seem to be associated with race-related COVID stress endorsement. Specifically, positive endorsement of race-related COVID stress was seen in individuals who have engaged in spirituality/religiosity during the pandemic and those with higher levels of cultural mistrust, everyday discrimination, racial centrality, and participation in activism. One reason for this association may be that individuals who endorse

these culturally-specific factors (e.g., private regard, spirituality/religiosity, HBCU attendance) tend to engage more with their community and value their race as central to their identity. We infer that these individuals' investment in their racial identity increases their propensity to experience concern for their community and distress due to the racism the Black community faces. Previous research has found that ethnic group membership is predictive of higher race-related stress (Utsey et al., 2002). Similarly, immersion in Black culture, public regard, private regard, and racial centrality are all associated with racial discrimination and psychological distress (Lee & Ahn, 2013), likely due to a greater ability to perceive discrimination (Sellers & Shelton, 2003).

Contrary to our hypotheses, racial centrality, private regard, Black activism, and spirituality/religiosity did not buffer the associations between race-related COVID stress and psychological distress or well-being. Given our previous findings that these cultural factors are actually associated with increased race-related COVID stress, these results are not surprising. There have been mixed results as to whether the discrimination-distress relation is buffered by Black identity (Banks & Kohn-Wood, 2007; Sellers & Shelton, 2003) and activism (Hope et al., 2018; Mekawi et al., 2021). Our findings show that traditional protective factors may not have the same buffering impact against racism's effects in the context COVID-19.

In sum, greater endorsement of the cultural factors examined here was associated with a greater likelihood to experience race-related COVID stress and was not supported to buffer race-related COVID stress' impact on mental health. At first glance, it may seem that our research is suggesting that these "culturally-specific buffers" have a deleterious impact on mental health and should be reduced. However, these culturally-specific buffers have an extensive amount of literature supporting their utility for positive outcomes, including self-esteem, well-being, and

social functioning (Grayman-Simpson, 2012; Taylor et al., 2003). We believe that these factors simply represent the distress that accompany being Black in America where systematic racism and injustice are ever-present. As the majority of our sample has experienced at least some form of race-related COVID stress, results have implications for a wide range of individuals and do not suggest individual pathology but rather a systemic issue affecting the Black community. Mental health professionals must move beyond solely encouraging Black individuals to adopt protective factors to buffer the harmful associations of race-related COVID stress. Instead, researchers, clinicians, and policymakers should advocate for systemic change to address the root of the issue- systemic racism.

When examining how everyday discrimination and cultural mistrust might exacerbate the association between race-related COVID stress and mental health outcomes, cultural mistrust was the only significant risk factor. Cultural mistrust moderated the association between race-related COVID stress and psychological distress, such that cultural mistrust was associated with higher levels of psychological distress, only for those who experienced race-related COVID stress. Thus, cultural mistrust exacerbates the deleterious associations between race-related COVID stress and psychological distress. Cultural mistrust has been shown to be associated with perceived racism (Thompson et al., 1990). Therefore, one could infer that persistent cultural mistrust may elevate awareness of the race-related COVID stressors towards the point of symptom exacerbation. Our findings of cultural mistrust as risk factor for greater distress also demonstrate that chronic forms of racism may exacerbate the impact of acute manifestations of racism (Williams et al., 2003).

Of note, cultural mistrust was not associated with psychological distress at low levels of race-related COVID stress. Despite a mass of research examining the associations between

cultural mistrust and reduced help-seeking behaviors and health, cultural mistrust was originally purported by theorists to be a healthy "cultural paranoia" as a result of historical and continuous mistreatment within a variety of societal institutions and interpersonal contexts (Grier & Cobbs, 1968; White, 1980). One study found that cultural mistrust holds a curvilinear relation with psychological well-being, such that both low and high levels were associated with lower well-being and moderate levels were deemed to be optimal (Bell & Tracey, 2006). Our findings suggest that cultural mistrust's impacts are nuanced and not always harmful to one's mental health. In this case, whether one experiences race-related COVID stress is the defining factor to whether cultural mistrust results in psychological distress. Further, though they are correlated and share some conceptual similarities (e.g., fear/distrust of healthcare due to historical racial injustice), cultural mistrust and race-related COVID stress are distinct constructs, as indicated by the moderating relation they have with one another. This highlights the unique nature of race-related COVID stress and warrants further research into its impact on Black individuals during COVID-19.

Limitations

There are several limitations to acknowledge within this study. First, our findings are correlational, which does not imply causation. Further, these data were collected one year into the COVID-19 pandemic, prior to wide distribution of the vaccine, yet after the early stages of the pandemic in which there was greater uncertainty about COVID. Thus, these results represent a time-limited snapshot of the potential impact of race-related COVID stress on mental health, as there may have been other points of the pandemic in which this stress may have had greater or lesser impacts on mental health. Future studies should examine how the mental health of Black individuals has progressed throughout the COVID-19 pandemic using longitudinal data, and if

available, how it relates to race-related COVID stressors.

The data used in the study was also taken from a multi-state needs assessment, which was created primarily for the purpose of understanding the impact of the COVID-19 pandemic on Black individuals in the U.S. Therefore, the survey was not constructed with a-priori hypotheses in mind, limiting the utility of some measures. Also, the questions surveyed aim to cover a wide variety of topics and many measures were limited to a few items in order not to exhaust the participant. For example, the well-being measure assessed how calm, peaceful, and happy an individual felt during COVID-19 using 2 items adapted from a longer measure assessing well-being. The measure was limited as it did not account for other aspects of well-being, such as life satisfaction (Diener et al., 1984).

Finally, our findings should be interpreted with caution as our measurement of race-related COVID stress was limited. Although significant, race-related COVID stress only accounted for 4% of the variance of psychological distress and 1% of well-being alone. Thus, there are likely other racism-related and non-racism-related factors that contribute to mental health. Other aspects of structural racism in relation to COVID, such as residential segregation which puts Black individuals at higher risk of environmental hazards (Williams, et al., 2019), were not included in our measure. Researchers should develop expanded measures of race-related COVID stress. Also, we primarily used dichotomous scoring to define race-related COVID stress. However, future studies using this measure should examine whether the dichotomous or continuous measure has better utility in examining the impact of such stress on mental health and other outcomes. Though we established face validity and internal reliability, the full psychometric properties of this scale are unknown. Lastly, the ABPsi COVID-19 Needs Assessment team did not originally develop these items for the specific purpose of measuring

race-related COVID stress. Thus, future studies aiming to examine associations such as these should strengthen these findings by first validating a robust measure of race-related COVID stress.

Conclusions and Implications

Overall, our research demonstrates that stress at the intersection of racism and COVID-19 has negative implications for the mental health of Black individuals. In the early stages of COVID-19, COVID was described as a "great equalizer" in that it was thought to equally impact individuals beyond sociodemographic characteristics such as race and class (Mein, 2020). Since then, an aggregation of research has shown that this is not the case, and in fact, COVID-19 seems to widen existing disparities (Saltzman et al., 2021; Mein 2020; National Center for Immunization and Respiratory Diseases, 2021). Our results show that race-related COVID stress is associated with negative impacts on mental health and thus may contribute to these disparities. Though the landscape of COVID-19 is continuously changing, these results will continue to bear relevance well-beyond the end of the pandemic. COVID-19 is projected to have long-term impacts on physical and mental health due to both the biological impacts of COVID and stressors experienced during the pandemic (Higgins et al., 2020). Thus, race-related COVID stress experienced during the pandemic will likely impact Black mental health for years to come. In addition, our results provide further support that Black mental health is at risk during times of national distress, due to the preexisting pandemic of racism (Laurencin & Walker, 2020; Liu & Modir, 2020; Novaceck et al., 2020). Therefore, our examination of race-related COVID stress provides a framework for how racism may interact with future pandemics or national stressful events. Further, our finding that the association between cultural mistrust was associated with mental health only for those who endorsed race-related COVID stress shows that cultural

mistrust is more nuanced than the existing empirical literature has suggested. There may in fact be an adaptive "healthy paranoia" that only has negative impacts when it is associated with stress.

Our results bear implications for how researchers, clinicians, and policymakers should approach Black mental health in the age of COVID-19 and beyond. Policymakers should continue to address structural racism, which lies at the core of race-related COVID stress. Greater funding for public health research examining structural racism and its manifestations as social determinants of health is needed (Churchwell et al., 2020; Williams et al., 2019). Policymakers should also support policies that expand access to mental health services, such as by expanding financial supports for community-level programing, insurance coverage, and school-based services (Shim & Starks, 2021). Further, organizations involved in health research should uphold an antiracist stance through commitment to examine and ameliorate the intersection of racism and chronic and acute stressors (Churchwell et al., 2020).

Future research should explore the associations between race-related COVID stress and physical health. Being that psychological distress and well-being are both indicative of other outcomes, such as physical health, productivity, and pro-social behavior (Huppert et al., 2009), the negative implications of race-related COVID stress may very well go beyond the constructs measured in this study. In particular, individuals with lower psychological well-being are more likely to contract viral infection, less likely to develop antibodies from a vaccine, and less likely to survive overall (Huppert et al., 2009). It is possible that the impact of race-related COVID stress may extend to physical health and play a role in the COVID-19 morbidity and mortality disparities impacting Black individuals. Researchers should also examine other protective factors not assessed in this study (e.g., formal and informal support) in order to identify mutable

factors that may help to buffer race-related COVID stress. Although our findings suggest that race-related COVID stress must be addressed on a systemic level, mechanisms to foster Black resilience in the present-day are still needed. Finally, as the literature on cultural mistrust is sparse, researchers should further explore its associations with both positive and negative aspects of mental health.

Mental health practitioners must consider race-related COVID stress within their case conceptualization for Black clients and should also be open to discussion about racism (Liu & Modir, 2020; Novaceck et al., 2020). Given how cultural mistrust exacerbated the impacts of race-related COVID stress, clinicians must recognize that they are a part of an institution of healthcare that has historically marginalized and harmed the Black community; thus, mistrust may be present (Novaceck et al., 2020). Therefore, if a client is expressing mistrust, clinicians should refrain from simply invalidating this "healthy paranoia" and openly discuss how the client and clinician can collaborate to build trust (Novaceck et al., 2020). They should also take a culturally-informed approach by relying on the use of cultural humility and applying culturally-adapted treatments, when necessary (Liu & Modir, 2020; Novaceck et al., 2020). Finally, clinicians should also aim to foster individual client strengths to help the client manage their race-related COVID stress (Liu & Modir, 2020). By employing these recommendations, mental health professionals and advocates may begin to challenge race-related COVID stress and its impacts on mental health, which is necessary to fully improve Black mental health outcomes in the age of COVID-19.

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Appendix

Race-Related COVID Stress Measure

Only the 8 items bolded below make up the "Race-Related COVID Stress" measure.

***AQ15:** What have been your greatest sources of stress from the COVID-19 outbreak? **Please check all that apply.**

- ☐ Physical health concerns (1)
- ☐ Mental health concerns (2)
- ☐ Financial concerns (running out of money, lack of savings, paying for medicine out of pocket) (3)
- ☐ Housing concerns (not being able to pay rent, mortgage) (4)
- ☐ Transportation concerns (going to work, to the hospital, grocery shopping) (5)
- ☐ Caregiving responsibilities (for example: caring for children, family members) (6)
- ☐ Impact on work (losing my job, reduced hours of work) (7)
- ☐ Impact on your child (8)
- ☐ Impact on your community (9)
- ☐ Impact on family members (10)
- ☐ Access to food (not having enough food for the home) (11)
- ☐ Access to baby supplies (formula, diapers, wipes) (12)
- ☐ Access to clean water for hand washing, etc. (13)
- ☐ Access to personal care products or household supplies (14)
- ☐ Access to masks, sanitizers, wipes, or other protective supplies (15)
- ☐ Access to medical care, including mental health care (16)
- ☐ Access to bereavement, grief, and loss services (17)
- ☐ Access to internet and technology (18)
- ☐ Social distancing or quarantined (19)
- ☐ **Discrimination due to my race/ethnicity (20)**
- ☐ I am not stressed about the COVID-19 outbreak (21)
- ☐ Being stressed because others are not wearing their masks or social distancing (22)
- ☐ Dental health concerns (skipped cleaning, lost adult tooth, toothache, etc.) (23)
- ☐ Concerned about being evicted because could not pay rent or mortgage (24)
- ☐ Concerned about someone I know who had thoughts of suicide (25)
- ☐ Being alone (26)
- ☐ Other (27). **Please specify**: _____
- ☐ Prefer not to answer (28)

***AQ16:** What have been some of your thoughts or activities during the COVID-19 outbreak? **Select all that apply.**

- ☐ **I thought a lot about past historically traumatic events in our tribal history/my people's history that are like the COVID-19 outbreak (e.g., past pandemics – smallpox, TB, flu) (1)**
- ☐ I had lots of vivid dreams that have disturbed my sleep. (2)

☐ I used alcohol or drugs to help me cope with the stress related to being triggered by historical trauma events. (3)

☐ I used traditional medicine or sought traditional healing practices to help me cope with the stress of COVID-19 outbreak. (4)

☐ I reached out to elders, respected community members, or tribal health to help me cope with the stress caused by coronavirus. (5)

☐ My spirituality or spiritual practices has/have helped me through the stress caused by coronavirus. (6)

☐ I smudged or cleaned myself spiritually to help me or my family through the stress caused by coronavirus. (7)

☐ I prayed for the spiritual support of the Creator and/or of my ancestors to help us get through the COVID-19 outbreak. (8)

☐ **I worried about historical traumas and stressors of our elders during this COVID-19 outbreak. (9)**

☐ I had thoughts that made me feel like reaching out for professional help. (10)

☐ Prefer not to answer (11)

☐ None of the above (12)

***A18.** Please indicate whether you have been worried about any of the following during the COVID-19 pandemic. (**Check all that apply**). I have been worried:

☐ **a. COVID-19 was related to racism.**

☐ **b. COVID-19 was like the Tuskegee (syphilis) Experiment.**

☐ c. I would get the virus.

☐ **d. I am Black and would get the virus.**

☐ **e. my family members or friends who are Black would get the virus.**

☐ f. my family members or friends who have a health condition would get the virus.

☐ g. other people I know would get the virus.

☐ h. I or my family members might not be able to get good care if we tested positive.

☐ i. I would die from the virus.

☐ j. someone in my family would die from the virus

☐ k. I or someone in my household would lose my job.

☐ l. I or someone in my household would have my salary/wages cut.

☐ m. my children would fall behind in school because of the COVID restrictions.

☐ n. I would never see my loved one(s) again.

☐ **o. COVID-19 was started to destroy the Black race like HIV/AIDS.**

☐ p. I/we would lose our home or get evicted because of problems paying mortgage or rent.

☐ q. I/someone else close to me would need help such as a suicide hotline.

☐ r. where I/my family would stay in the event of a disaster (storm, flood, wildfire, etc.)

☐ s. None of these have worried me.

☐ t. Prefer not to answer