

Anti-racism activism among Black adolescents and emerging adults: Understanding the roles of racism and anticipatory racism-related stress

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Abstract

This study examines associations between individual racism, anticipatory racism-related stress, and anti-racism activism among Black adolescents ($n = 443$; $M_{\text{age}} = 15.6$; 57.4% female) and emerging adults ($n = 447$; $M_{\text{age}} = 23.8$; 77.6% female). The authors tested competing hypotheses about associations between individual racism and anti-racism activism on anticipatory racism-related stress. Findings indicated anticipatory racism-related stress may be both a catalyst and consequence of engagement in anti-racism activism for Black adolescents and emerging adults. Results for each age group varied by type of stress (physiological; psychological) and activism (low-risk; high-risk). Supporting youth engagement in anti-racism activism without increasing anticipatory racism-related stress is a key priority for meaningfully advancing scholarship on the development of anti-racism and pursuit of racial justice.

In the United States, racism is an important developmental context to consider (García Coll et al., 1996; Seaton, 2020) given the negative effects of racism and racial discrimination on development during adolescence (Benner et al., 2018) and emerging adulthood (Hope et al., 2015). Racism is a sociopolitically constructed system consisting of a hierarchical categorization of people, which prioritizes white individuals over non-white individuals through differential allocation of resources and power (Bonilla-Silva, 1997; Roberts, 2012). Racism operates through individuals (e.g., interpersonal interactions), institutions (e.g., schools), and culture (e.g., media, laws; Jones, 1997). Black adolescents (generally from puberty until age 17; Lerner, 2002) and emerging adults (ages

18–29; Arnett et al., 2014) are agentic and seek to dismantle racism through anti-racism activism (Anyiwo et al., 2020). Anti-racism activism is any action toward meaningful and systemic change to redress racism and racial injustice (Pieterse et al., 2016). Engagement in anti-racism activism can be catalyzed by experiences of racism. For instance, scholars have found that more frequent and more stressful experiences of racism are related to greater engagement in anti-racism action for Black adolescents and emerging adults (Hope, Cryer-Coupet, et al., 2020; Hope, Gugwor, et al., 2019; Szymanski & Lewis, 2015).

What is still unknown, however, is how the *stress* of anticipating future racism is related to engagement in

Abbreviations: CFI, comparative fit index; PVEST, Phenomenological Variants of Ecological Systems Theory; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual; TLI, Tucker Lewis Index.

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anti-racism activism. Two possibilities are suggested by the current body of literature. First, anti-racism activism can serve as an adaptive coping mechanism to reduce anticipatory stress (Hope & Spencer, 2017). Second, engagement in anti-racism activism, in and of itself, can engender stress for Black adolescents and emerging adults (Hope et al., 2018). In the current study, we examine competing hypotheses: if anti-racism activism may be a reaction to racial stress or if racial stress may result from anti-racism activism (see Figure 1). We test these hypotheses to understand whether the association between experiences of racism and anti-racism activism is facilitated by anticipatory racism-related stress or whether experiences of racism are associated with the stress of anticipating future racism through anti-racism activism. We also test potential differences in these processes for adolescents and emerging adults, as the catalysts and consequences of activism may look different during these developmental periods. Below, we provide an overview of the literature on racism, racism-related stress, and activism as a coping strategy for Black adolescents and emerging adults to situate these hypotheses and the current study.

Racism and anti-racism activism during adolescence and emerging adulthood

Black adolescents and emerging adults in the U.S. experience civic development in the context of racism (Hope et al., 2015), and the developmental competencies of each period may govern the ways they understand racism and decide to engage in anti-racism activism. Civic

development during adolescence includes advanced sociocognitive skills (e.g., abstract thinking; perspective taking) and exploration of political and social identities, especially in relation to social responsibility and justice (Flanagan, 2003; Wray-Lake et al., 2014). During emerging adulthood, as young people transition from adolescence to adulthood, they continue identity exploration, take on new social roles and increase social responsibility (Arnett, 2000; Katsiaficas, 2017; Syed & Mitchell, 2013). Given the potential developmental differences in how adolescents and emerging adults process experiences of racism and engage with their local communities and politics, we consider associations between racism, racism-related stress, and anti-racism activism for both Black adolescents and emerging adults.

Stress in anticipation of racism

At the individual level, racism manifests as actions and ideologies held by dominant racial group members that have differential and negative effects on subordinate racial group members (Williams et al., 2003), which includes bigotry, racial prejudice, racial microaggressions, and racial discrimination (Jones, 1997). Individual racism experiences are typical for Black adolescents and emerging adults. In studies of racism, researchers find that up to 88% of Black adolescents report experiencing individual racism in their lifetime (Hope et al., 2021) and that they can witness or experience racism up to five times per day (English et al., 2020). For Black emerging adults, the regularity of experiencing racism is similar, with up to 80% of Black emerging adults reporting

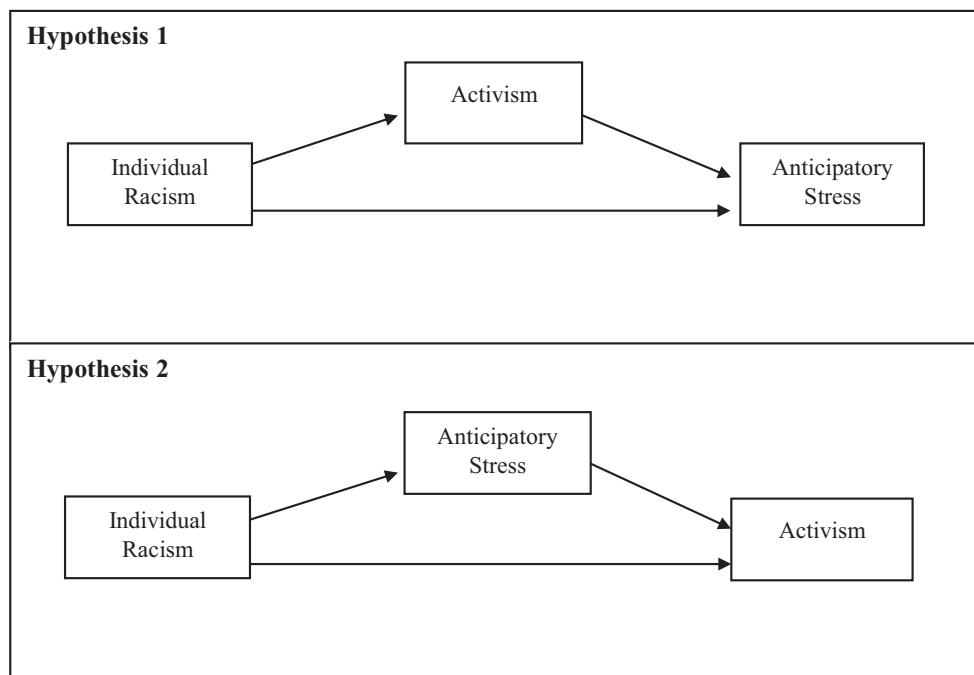


FIGURE 1 Hypothesized mediation pathways for racism, racism-related stress, and anti-racism activism

experiences of individual racism within the past year, and 30% reporting that an experience of individual racism was the worst they had experienced in their life (Volpe et al., 2020). Furthermore, Black adolescents and emerging adults are vulnerable to the negative effects of being targets of individual racism including psychological distress (Benner et al., 2018; Keels et al., 2017), and physical health consequences (Brody et al., 2014; Goodsby et al., 2015; Volpe et al., 2019).

Racism-related stress occurs when a person experiences race-related threats to their well-being, like an experience of racism, and cannot access resources to cope with those race-related threats (Harrell, 2000). Black people in the U.S. experience racism-related stress chronically, which leads to short- and long-term health consequences (Williams & Mohammed, 2013; Williams et al., 2019). In addition to the stress of previous experiences of racism, anticipation of future instances of racism can extend stress responses beyond the initial race-related threat (Brosschot et al., 2006; Utsey et al., 2013). This anticipatory stress may be experienced in two ways: the psychological arousal of worrying about and expecting racism in future interactions and physiological arousal (e.g., sweaty palms, increased heart rate) at the thought of navigating a future encounter with racism. Anticipatory stress responses are especially concerning due to anticipatory sensitization, which is a process by which individuals become more aware of and responsive to the stress of race-related threats and have more anticipatory stress responses to future exposure (Turan et al., 2015). Although anticipatory sensitization may be adaptive in a hostile environment, these anticipatory stress responses may also pose a health risk.

The Biopsychosocial Model of Racism (Clark et al., 1999) suggests that chronic bodily overactivation or underactivation in response to the stress of racism will condition future responses to acute racial stressors, which will erode health over time. Empirical findings support this theoretical perspective. In studies of Black adults, researchers found that more racism-related vigilance, a form of anticipatory racism-related stress, was related to more difficulty sleeping (Hicken et al., 2013) and more depression (Watson-Singleton et al., 2019). Similarly, for African American women college students, more racism-related vigilance was associated with more depression directly, and indirectly through rumination (repetitive focus on the racial stressor; Hill & Hoggard, 2018). Furthermore, stress from the anticipation of racism compromises the autonomic nervous system, which leads to cardiovascular disease (Brosschot et al., 2006; Utsey et al., 2013). In one study with Black emerging adults, past year experiences of individual racism were associated with autonomic nervous system functioning in response to an acute racial stressor for those who felt that being Black was not a central part of their identity (Volpe et al., 2019). In another emerging adult sample, lifetime exposure to racial discrimination was associated

with less optimal nervous system functioning (Hill et al., 2017). Given the health risks associated with anticipatory racism-related stress, it is important to understand mechanisms that can help Black adolescents and emerging adults cope with racism and reduce anticipatory racism-related stress.

Anti-racism activism as a coping strategy

Anti-racism includes actions and beliefs that support the reduction of racism as it manifests through societal structures and systems, such as policy (Kendi, 2019). In this study, we focus on engagement in anti-racism activism specific to remediating anti-Black racism and supporting Black communities (Hope, Pender, et al., 2019). Anti-racism activism in support of Black communities can be low-risk, which includes relatively safe types of activism like confronting family or friends who make racist jokes or comments, or wearing clothing that promotes anti-racism and conveys positive messages about Black communities. Low-risk activism is not completely void of risk, but the risks are generally less threatening to one's life and livelihood. Activism to address anti-Black racism can also be high-risk. High-risk activism is more likely to result in physical harm, arrest, or distress, and includes protesting and demonstrating in spaces where the potential for harm and arrest are high (Hope, Pender, et al., 2019). In previous studies, researchers found that engaging in low-risk anti-racism activism is more common than high-risk anti-racism activism among Black adolescents and emerging adults (Hope, Gugwor, et al., 2019). It is important to note that risk is also dependent on context. Factors including, but certainly not limited to, geographic location, time of day, gender presentation, and age can change the relative risk of both low- and high-risk anti-racism activism.

Anti-racism activism may be a particularly meaningful way for Black adolescents and emerging adults to cope with experiences of racism and reduce the negative health effects of racism-related stress (Ginwright, 2010; Hope & Spencer, 2017). Anti-racism activism has two proposed levers by which it functions in relation to racism and racism-related stress. First, anti-racism activism is an adaptive coping mechanism (Hope & Spencer, 2017). According to the Phenomenological Variants of Ecological Systems Theory (PVEST; Spencer et al., 1997), adolescents and emerging adults develop with varying levels of vulnerability due to stressors in their environments (e.g., racism), and use adaptive and reactive coping strategies to cope with and thrive in those environments. As an adaptive coping strategy, activism can buffer stress associated with experiencing racism-related threats, and over time can become an acquired response to racial stressors and resulting vulnerabilities. Second, the goal of anti-racism activism, by definition, is to eradicate systems that create and sustain racism (Kendi,

2019). Therefore, anti-racism activism has the potential to provide Black adolescents and emerging adults with a space to take an active role in changing the sociopolitical conditions that contribute to their vulnerability. In this way, anti-racism activism can be leveraged to navigate the racist structural conditions that create risk and alter these conditions to mitigate future risk.

Researchers have found empirical support for the associations between racism and activism among Black adolescents and emerging adults. For instance, more stress from experiences of racial discrimination (Hope, Smith, et al., 2020; Szymanski & Lewis, 2015) are related to more activism among Black emerging adults. Furthermore, among Black emerging adults, racial discrimination was associated with more depressive symptoms, but this association was not significant for those who reported high levels of support for Black Lives Matter (Watson-Singleton et al., 2020). Conversely, researchers found that Black college students who experienced more racial microaggressions on campus reported more stress and anxiety by the end of freshman year and this association was worse for students involved in more political activism (Hope et al., 2018). These seemingly contradictory findings suggest there may be more to understand about the associations between racism, anticipatory racism-related stress, and anti-racism activism.

Previous research has examined activism as a moderator in the association between racism and mental health. Less is known about whether and how activism functions as a possible mediator that connects experiences of racism to anticipatory racism-related stress. In line with the PVEST conceptualization of activism as coping (Hope & Spencer, 2017), it is possible that racism causes more racism-related stress, and that more racism-related stress is then associated with more anti-racism activism. On the other hand, given recent theory and empirical research (Ballard & Ozer, 2016; Hope et al., 2018), it may be that more experiences of racism relate to more anti-racism activism and engaging in anti-racism activism is related to more racism-related stress. Furthermore, these associations may vary for adolescents and emerging adults. In a study of Black adolescent boys and emerging adult men, the association between anticipatory racism-related stress and low-risk activism varied by age (Hope, Cryer-Coupet, et al., 2020).

The current study

Grounded in the Biopsychosocial Model of Racism (Clark et al., 1999) and PVEST (Hope & Spencer, 2017; Spencer et al., 1997), we investigated the associations between individual racism, racism-related stress, and anti-racism activism among Black adolescents and emerging adults. The Biopsychosocial Model of Racism contends that racism is stressful and that stress causes deterioration in health over time, while PVEST posits that activism

may be one strategy to cope with and guard against the negative effects of racism. Furthermore, the universal benefit of civic development on health and well-being is currently called into question (Ballard et al., 2019), and we add to this literature by considering if and how anti-racism activism is a part of well-being and positive development for Black youth. In this study, we examine low-risk and high-risk anti-racism activism that is specific to Black communities and build on previous research to understand how racism, racism-related stress, and anti-racism activism are related for Black adolescents and emerging adults. In confirmatory analyses, we investigated two competing hypotheses to determine the relative directionality of individual racism, racism-related stress, and anti-racism activism. To test competing hypothesis one, we examined whether anticipatory racism-related stress is a potential catalyst for anti-racism activism, in line with Hope and Spencer (2017). We used mediation to determine whether experiences of racism were associated with psychological and physiological anticipatory racism-related stress and whether either or both forms of anticipatory stress were associated with low- or high-risk anti-racism activism. To test competing hypothesis two, we investigated whether engaging in anti-racism activism is a conduit for racism-related stress (see Ballard & Ozer, 2016; Hope et al., 2018). As such, we tested whether experiences of individual racism were associated with low- and high-risk anti-racism activism and whether anti-racism activism was in turn associated with more psychological and physiological anticipatory racism-related stress. We do not make a priori hypotheses regarding low- versus high-risk activism, as the distinction between these forms of activism is relatively new. Finally, in exploratory analyses, we used multigroup models to examine whether these processes differ for adolescents and emerging adults. Given the complex associations in the empirical and theoretical literature, we do not offer specific hypotheses regarding developmental differences.

METHOD

Participants

Data for the current study came from an investigation of a community sample of self-identified Black adolescents and emerging adults from across the United States. Data were collected in Spring 2016. The analytic sample for the current investigation comprises 443 Black adolescents (14–17 years old; $M = 15.6$, $SD = 1.06$) and 447 emerging adults (18–29 years old; $M = 23.8$, $SD = 3.31$) who resided in 43 different states in the United States, mostly from urban (45.8%) or suburban (44.1%) settings. Approximately 44% of participants were high school students, 19.3% were college students, 26.5% indicated that they were not currently a student, 5.6% identified

as middle school students, and 4.3% identified as graduate school students. Among emerging adults, 50.8% were not currently students and, of those that were students, 76.36% were college students. Participants described themselves as Black or African American (87.7%), Afro-Latinx (3.1%), and Bi-/Multi-racial (9.2%). Many participants identified their gender as female (67.6%), with 32.0% of the sample identifying as male and 0.3% as non-binary/fluid. Most participants did not identify as lesbian, gay, bisexual, transgender, queer/questioning (LGBTQ) (84.3%). Most participants indicated that they were currently unemployed, with 28.4% looking for work and 28.7% not currently looking for work. The remaining 42.9% of the sample were employed (21.1% full time, 18.5% part time, and 3.3% temporary job). Among emerging adults, a majority reported being employed full time (37.8%), with 21.5% employed part time, 23.9% unemployed but looking for work, 13.0% unemployed but not looking for work, and 3.8% having a temporary job. Participants reported median household income was between \$35,000 and \$39,000 per year. On average, participants volunteered 1–2 h a month to help other people or to make their community a better place.

Procedure

Participants were recruited using Qualtrics Panels, a service that recruits participants and administers online surveys. Emerging adults were recruited through an email invitation which included the expected duration of the study and the general topic. Adolescent participants were recruited through an email to their parent and participated with parental consent. To reduce self-selection bias, the survey invitation did not include specific details about the content of the survey. The recruitment window was open for approximately 4 weeks. Eligibility included identification as Black or African American and being between 14 and 29 years old. The survey took roughly 30 min to complete. Participants who completed the survey received an incentive, as determined by Qualtrics Panels. Study protocols were approved by the Institutional Review Board (IRB) at the host university.

Measures

Individual racism

Individual experiences of racism were measured using the individual subscale of the adolescent version of the Index of Race-Related Stress (Seaton, 2003). Participants reported whether they had experienced each instance of racism in their lifetime (e.g., “Whites/non-Blacks have stared at you as if you didn’t belong in the same place with them, whether it was in a store, restaurant, or other types of business”) and the extent to which the

experience was bothersome or upsetting using a 5-point scale: “this event never happened to me” (0) to “this event happened to me and I was extremely upset” (4). To assess the breadth of experiences, item responses were recoded to indicate experience of racism (1) and to indicate no racism experience (0), and a count score was computed. Scores ranged from 0 (no individual racism) to 10 (all possible individual racism experiences). Sample internal reliability was high ($\alpha = .89$; $\alpha = .89$ emerging adults; $\alpha = .89$ adolescents).

Anti-racism activism

Anti-racism activism was measured using two subscales from the Black Community Activism Orientation Scale (Hope, Pender, et al., 2019). Participants self-reported whether they engaged in specific actions in the past year by indicating “no” (0) or “yes” (1). The low-risk activism subscale measured engagement in sociopolitical, community, and social justice actions in and for the Black community that are passive, less risky, and sometimes interpersonal (e.g., “Sign a petition for a political cause specific to the Black community” and “Confronted jokes, statements, or innuendos that opposed the Black community”) using 11 items. The high-risk activism subscale measured engagement in high visibility, assertive, and relatively more risky social justice actions in and for the Black community (e.g., “Engage in a political activity specific to the Black community in which you suspect there would be a confrontation with the police or possible arrest” and “Blocked access to a building or public area with your body for a cause related to Black community”) using seven items. Subscale scores were calculated by creating a count of all affirmative responses. The final subscale scores ranged from 0 to 11 and from 0 to 7, respectively, with higher scores indicating more engagement in that type of anti-racism activism. Both subscales had high internal consistency (low-risk anti-racism activism, $\alpha = .84$; $\alpha = .84$ emerging adults; $\alpha = .84$ adolescents; high-risk anti-racism activism, $\alpha = .89$; $\alpha = .89$ emerging adults; $\alpha = .88$ adolescents).

Racism-related stress

Two subscales from The Prolonged Activation and Anticipatory Race-Related Stress Scale (Utsey et al., 2013) were used to assess anticipatory racism-related stress. In the first subscale, participants self-reported their psychological responses to future expectations of racism via four items (e.g., “When I am around White people, I expect them to say or do something racist”). In the second subscale, participants self-reported their physiological responses to expected racism (e.g., “I can feel my hands start to shake whenever I think I am about to experience racism”) via four items. Items

were rated on a 7-point scale, from “strongly disagree” (1) to “strongly agree” (7). A sum score was computed for each subscale, with higher scores indicating higher anticipatory racism-related stress responses. Both subscales had high internal consistency (psychological, $\alpha = .79$; $\alpha = .82$ emerging adults; $\alpha = .76$ adolescents; physiological, $\alpha = .89$; $\alpha = .90$ emerging adults; $\alpha = .88$ adolescents).

Control variables

Demographic variables included gender, LGBTQ identity, income, and employment. We also controlled for volunteering as an important source of individual variation in activism. Participants indicated their gender; male was coded as “1”, female was coded as “2”, and non-binary/fluid was coded as “3”. Participants were asked if they identified as LGBTQ; no was coded as “0” and yes was coded as “1”. Student status was captured via a question that asked if participants were currently students, with response options being not currently a student, middle school student, high school student, college student, and graduate student. Participants reported their total household income from one of eight potential response options: under \$25,000, \$25,000–\$29,999, \$30,000–\$34,000, \$35,000–\$39,999, \$40,000–\$49,999, \$50,000–\$59,999, \$60,000–\$84,999, over \$85,000. Employment was reported using five response options: full time, part time, temporary job, unemployed but looking for work, unemployed but not looking for work. Participants reported how many hours in a typical month they spend volunteering to help other people or to help make their community a better place on a 7-point Likert scale from “I do not volunteer” (0) to “6 or more hours a month” (6).

Analytic strategy

Descriptive statistics and correlational analyses were first conducted to establish foundational support for our analytic strategy. Chi-square tests and independent samples *t*-tests were also run to determine if there were any significant differences in study variables by developmental period (adolescence and emerging adulthood). Study variables were mean centered in subsequent analyses. We then tested the two competing multigroup mediation models via path analysis conducted in MPlus 8.0 (Muthén & Muthén, 1998–2017) using full information maximum likelihood estimation. Model fit was established by examining absolute and relative unconstrained model fit indices (i.e., chi-square test, root mean square error of approximation [RMSEA], comparative fit index [CFI], Tucker Lewis Index [TLI], and standardized root mean square residual [SRMR]) according to established guidelines

(Hu & Bentler, 1999; Kline, 2005; Marsh et al., 2004). Invariance testing was used to determine if the mediation models significantly differed by developmental period, and we examined model path invariance sequentially. Finally, tests of mediation were performed via the model indirect command in MPlus using 95% bias-corrected bootstrap confidence intervals based on 10,000 samples. Covariances were modeled between both forms of anti-racism activism, and both types of anticipatory racism-related stress, as would be expected based on theory.

There was a small amount of missing data. Two participants did not report their gender identity (0.22% of sample), and one participant did not have a psychological anticipatory stress score (0.11% of sample) because they did not complete subscale items. Given the small amount of missing data, we utilized maximum likelihood estimation to handle missing data.

RESULTS

Preliminary descriptive results

Descriptive statistics (means, standard deviations, and bivariate correlations) for the entire sample can be found in Table 1. We also present descriptive statistics for adolescents and emerging adults separately in Tables S1 and S2, respectively. In the full sample, participants reported low to moderate engagement in low-risk activism ($M = 3.70$) and infrequent engagement in high-risk activism ($M = 0.77$). On average, they reported experiencing 5.65 types of individual racism during their lifetime. They also reported relatively high levels of psychological ($M = 19.40$) and physiological ($M = 13.38$) anticipatory racism-related stress. Bivariate correlations indicated that individual racism was associated with all anticipatory racism-related stress and activism variables. For emerging adults, low- and high-risk anti-racism activism was associated with physiological and psychological anticipatory racism-related stress. For adolescents, high-risk activism was not associated with psychological anticipatory racism-related stress. These analyses provided initial support for our path analysis models.

Results from chi-square and independent samples *t*-tests (see Table 2) indicated that there were more males in the adolescent sample and more females in the emerging adult sample. As would be expected to differ between these two developmental periods, emerging adults were more likely to be employed and to report lower household incomes compared to adolescents. Emerging adults were also more likely to engage in low-risk activism compared to adolescents. There were no significant differences between developmental periods in terms of LGBTQ identity, hours volunteering, individual racism, psychological anticipatory stress, physiological anticipatory stress, or engagement in high-risk activism.

TABLE 1 Means, standard deviations, and bivariate correlations among study variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Gender	—									
2. LGBTQ	.06	—								
3. Income	-.13***	.001	—							
4. Employment	-.02	-.09***	-.01	—						
5. Volunteer	-.05	.12***	.16***	-.16***	—					
7. Individual racism	-.03	.06	.001	-.11*	.16***	—				
8. Psychological anticipatory stress	-.02	-.01	.07*	-.01	.07*	.38***	—			
9. Physiological anticipatory stress	-.08*	.13***	-.01	-.11**	.16***	.28***	.40***	—		
10. Low-risk anti-racism activism	.10**	.10**	-.03	-.21***	.29***	.38***	.26***	.19***	—	
11. High-risk anti-racism activism	-.08*	.10**	-.03	-.15***	.25***	.25***	.09*	.29***	.54***	—
Mean or %	67.6% Female	15.7% LGBTQ	26.4% Under \$25,000	42.9% Employed	1.57	5.63	19.40	13.36	3.69	.77
SD	890	890	890	890	2.02	3.47	5.47	6.72	3.18	1.69
N	890	890	890	890	890	890	889	890	890	890

p* < .05; *p* < .01; ****p* < .001.

TABLE 2 Characteristics of adolescent and emerging adult subsamples

Variable	Age group		Difference
	Adolescent	Emerging adult	
	Count (%) or <i>M</i> (<i>SD</i>)	Count (%) or <i>M</i> (<i>SD</i>)	Chi-square test or independent samples <i>t</i> -test
Gender	255 (57.4%) Female	347 (77.6%) Female	$\chi^2(2) = 41.46, p < .001^*$
LGBT	383 (85.9%) No	368 (82.3%) No	$\chi^2(1) = 2.10, p = .147$
Income	110 (24.7%) Under \$25,000	126 (28.2%) Under \$25,000	$\chi^2(7) = 31.06, p < .001^*$
Employment	101 (22.6%) Yes	282 (63.1%) Yes	$\chi^2(1) = 149.07, p < .001^*$
Volunteer	1.56 (2.03)	1.58 (2.01)	$t(890) = 0.14, p = .889$
Individual racism	5.57 (3.50)	5.70 (3.45)	$t(890) = 0.58, p = .561$
Psychological anticipatory stress	19.62 (5.13)	19.18 (5.79)	$t(877.32) = -1.20, p = .231$
Physiological anticipatory stress	13.16 (6.57)	13.61 (6.88)	$t(890) = 0.97, p = .331$
Low-risk anti-racism activism	3.30 (3.06)	4.09 (3.25)	$t(890) = 3.69, p < .001^*$
High-risk anti-racism activism	0.70 (1.60)	0.85 (1.78)	$t(890) = 1.29, p = .197$

Note: Percent is based on non-missing responses.

* $p < .001$.

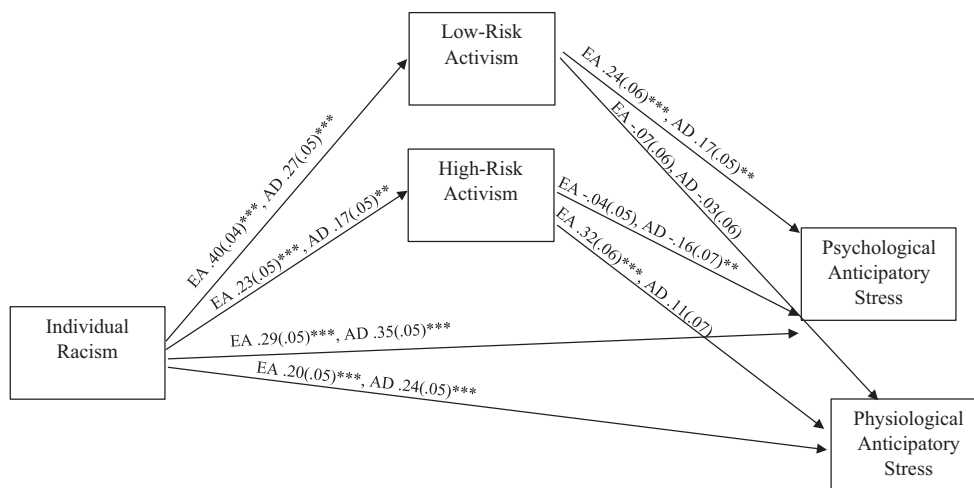


FIGURE 2 Competing multigroup mediation model 1: activism as a mediator. Note: AD, adolescent; EA, emerging adult. Standardized coefficients for each path are displayed, followed by standard errors in parentheses. Control variable path results are excluded for parsimony, but controls included gender, LGBTQ, income, employment, and volunteered. Covariances were modeled between both outcomes and both mediators, respectively. ** $p < .01$; *** $p < .001$

Competing multigroup mediation model 1: Activism as a mediator

The multigroup mediation model (Figure 2) to test our first competing hypothesis was a good fit to the data; $\chi^2(12) = 14.84$; RMSEA = .02, CFI = 1.00; TLI = .99; SRMR = .02.

Results of chi-square difference tests between constrained ($\chi^2(36) = 60.16$) and unconstrained ($\chi^2(12) = 14.84$) models by age group indicated overall invariance, such that models for adolescents and emerging adults differ

($\chi^2_{\text{difference}}(24) = 45.32, p = .005$). We constrained individual pathways sequentially to identify model pathways that were significantly different by age group (see Table 3). One specific path, the positive association between individual racism and engagement in low-risk activism was stronger for emerging adults ($\beta = .40, p < .001, 95\% \text{ CI } [.32, .47]$) compared to adolescents ($\beta = .28, p < .001, 95\% \text{ CI } [.20, .36]$), $\chi^2_{\text{difference}}(1) = 6.92, p = .009$. Invariance testing did not indicate that any other pathways were significantly different by age group. However, examining coefficients from pathways by group suggested that one

additional difference may be meaningful. The association between high-risk activism and psychological anticipatory stress was significant for adolescents ($\beta = -.13, p = .015, 95\% \text{ CI } [-.24, -.03]$), but not for emerging adults ($\beta = -.05, p = .278, 95\% \text{ CI } [-.15, .04]$).

Using results from the unconstrained model, we next assessed mediation for both the emerging adults and adolescents. For emerging adults, in support of our first competing hypothesis, a significant indirect effect of high-risk activism in the association between individual racism and physiological anticipatory stress was detected; $\beta = .07, p < .001, 95\% \text{ CI } [.04, .12]$. Model coefficients indicated that more exposure to individual racism was associated with more engagement in high-risk activism ($\beta = .23, p < .001, 95\% \text{ CI } [.14, .32]$) and more engagement in high-risk activism was in turn associated with more physiological anticipatory stress ($\beta = .32, p < .001, 95\% \text{ CI } [.20, .42]$). Additionally, low-risk activism was a significant mediator of the association between individual racism and psychological anticipatory stress ($\beta = .10, p < .001, 95\% \text{ CI } [.05, .15]$). Model coefficients indicated that more exposure to individual racism was associated with more engagement in low-risk activism ($\beta = .40, p < .001, 95\% \text{ CI } [.32, .48]$) and more engagement in low-risk activism was in turn associated with more psychological anticipatory stress ($\beta = .24, p < .001, 95\% \text{ CI } [.13, .35]$). Low-risk activism was not a significant mediator of the association between individual racism and physiological anticipatory stress ($\beta = -.03, p = .267, 95\% \text{ CI } [-.07, .02]$). High-risk activism was not a significant mediator of the association between individual racism and psychological anticipatory stress ($\beta = -.01, p = .521, 95\% \text{ CI } [-.04, .01]$).

For adolescents, in support of our first competing hypothesis, both high-risk ($\beta = -.03, p = .034, 95\% \text{ CI } [-.06, -.01]$) and low-risk ($\beta = .05, p = .004, 95\% \text{ CI } [.02, .08]$) activism were significant mediators of the associations between individual racism and psychological anticipatory stress. More exposure to individual racism was associated with more engagement in low-risk ($\beta = .27, p < .001, 95\% \text{ CI } [.18, .36]$) and high-risk activism ($\beta = .17,$

$p = .001, 95\% \text{ CI } [.07, .26]$). In turn, engagement in low-risk activism was associated with more psychological anticipatory stress ($\beta = .17, p = .001, 95\% \text{ CI } [.07, .27]$), and engagement in high-risk activism was associated with less psychological anticipatory stress ($\beta = -.16, p = .014, 95\% \text{ CI } [-.29, -.03]$). Neither high-risk ($\beta = .02, p = .173, 95\% \text{ CI } [.00, .05]$) nor low-risk ($\beta = -.01, p = .669, 95\% \text{ CI } [-.04, .02]$) activism were significant mediators of the associations between individual racism and physiological anticipatory stress.

Competing multigroup mediation model 2: Anticipatory racism-related stress as a mediator

The multigroup mediation model (Figure 3) to test our second competing hypothesis was a good fit to the data; $\chi^2(12) = 15.24; \text{RMSEA} = .03, \text{CFI} = 1.00; \text{TLI} = .98; \text{SRMR} = .02$.

Results of chi-square difference tests between constrained ($\chi^2(36) = 61.80$) and unconstrained ($\chi^2(12) = 15.24$) models by developmental period indicated overall invariance, such that models for adolescents and emerging adults differ ($\chi^2_{\text{difference}}(24) = 46.56, p = .004$). We constrained individual pathways sequentially to identify model pathways that were significantly different (see Table 3). Two specific paths were stronger for emerging adults compared to adolescents: the positive association between engagement in individual racism and engagement in low-risk activism ($\chi^2_{\text{difference}}(1) = 6.19, p = .013$), and the positive association between engagement in high-risk activism and physiological anticipatory stress ($\chi^2_{\text{difference}}(1) = 11.63, p = .001$). Invariance testing did not indicate that any other pathways were significantly different. However, examining coefficients from pathways by group suggested that one additional difference may be meaningful. The association between high-risk activism and psychological anticipatory stress was significant for adolescents ($\beta = -.13, p = .016, 95\% \text{ CI } [-.23, -.03]$) but not for emerging adults ($\beta = -.04, p = .341, 95\% \text{ CI } [-.14, .05]$).

TABLE 3 Results of multigroup path invariance testing for competing models

Competing model 1		Competing model 2	
Path	χ^2 difference	Path	χ^2 difference
Physiological stress on low-risk activism	$\chi^2(1) = 0.004$	Low-risk activism on physiological stress	$\chi^2(1) = 0.27$
Physiological stress on high-risk activism	$\chi^2(1) = 3.43$	High-risk activism on physiological stress	$\chi^2(1) = 11.63^{**}$
Physiological stress on individual racism	$\chi^2(1) = 0.01$	Physiological stress on individual racism	$\chi^2(1) = 0.004$
Psychological stress on low-risk activism	$\chi^2(1) = 2.83$	Low-risk activism on psychological stress	$\chi^2(1) = 1.78$
Psychological stress on high-risk activism	$\chi^2(1) = 2.00$	High-risk activism on psychological stress	$\chi^2(1) = 2.27$
Psychological stress on individual racism	$\chi^2(1) = 0.19$	Psychological stress on individual racism	$\chi^2(1) = 0.70$
Low-risk activism on individual racism	$\chi^2(1) = 6.92^{**}$	Low-risk activism on individual racism	$\chi^2(1) = 6.19^*$
High-risk activism on individual racism	$\chi^2(1) < 0.001$	High-risk activism on individual racism	$\chi^2(1) = 0.01$

* $p < .05$; ** $p < .01$.

Using results from the unconstrained model, we assessed mediation for emerging adults and adolescents. For emerging adults, in support of our second competing hypothesis, a significant indirect effect of psychological anticipatory stress in the association between individual racism and engagement in low-risk activism was detected; $\beta = .07, p < .001, 95\% \text{ CI } [.03, .11]$. Model coefficients indicated that more exposure to individual racism was associated with more psychological anticipatory stress ($\beta = .38, p < .001, 95\% \text{ CI } [.29, .46]$), and more psychological anticipatory stress was in turn associated with more engagement in low-risk activism ($\beta = .18, p < .001, 95\% \text{ CI } [.09, .27]$). Physiological anticipatory stress was a significant mediator of the association between individual racism and engagement in high-risk activism ($\beta = .08, p < .001, 95\% \text{ CI } [.04, .12]$). Model coefficients indicated that more exposure to individual racism was associated with more physiological anticipatory stress ($\beta = .25, p < .001, 95\% \text{ CI } [.16, .33]$) and more physiological anticipatory stress was in turn associated with more engagement in high-risk activism ($\beta = .30, p < .001, 95\% \text{ CI } [.20, .40]$). Physiological anticipatory stress was not a significant mediator of the association between individual racism and engagement in low-risk activism ($\beta = .002, p = .855, 95\% \text{ CI } [-.02, .03]$). Psychological anticipatory stress was not a significant mediator of the association between individual racism and engagement in high-risk activism ($\beta = -.02, p = .352, 95\% \text{ CI } [-.06, .02]$).

For adolescents, in support of our second competing hypothesis, both physiological anticipatory stress ($\beta = .04, p = .020, 95\% \text{ CI } [.01, .07]$) and psychological anticipatory stress ($\beta = -.05, p = .043, 95\% \text{ CI } [-.10, -.01]$) were significant mediators of the association between individual racism and engagement in high-risk activism. More exposure to individual racism was associated with more physiological ($\beta = .25, p < .001, 95\% \text{ CI } [.16, .34]$) and more psychological anticipatory stress ($\beta = .37, p < .001, 95\% \text{ CI } [.29, .45]$). In turn, more physiological anticipatory stress ($\beta = .14, p = .008, 95\% \text{ CI } [.04, .24]$) and less psychological anticipatory stress ($\beta = -.13, p = .036, 95\% \text{ CI } [-.24, -.01]$) were associated with more engagement in high-risk activism. Neither physiological anticipatory stress ($\beta = .003, p = .837, 95\% \text{ CI } [-.02, .03]$) nor psychological anticipatory stress ($\beta = .03, p = .153, 95\% \text{ CI } [-.01, .07]$) were significant mediators of the associations between individual racism and engagement in low-risk activism.

DISCUSSION

For Black adolescents and emerging adults, anti-racism activism can be one way to cope with stressful experiences of racism (Hope & Spencer, 2017). In the current study, we examined bidirectional associations between experiences of individual racism, racism-related anticipatory stress, and anti-racism activism. We found evidence for

both competing mediation models, as well as some differences in these associations for Black adolescents and emerging adults. Taken together, we find evidence to support a potential bidirectional and developmentally distinct model to understand how racism, anticipatory racism-related stress, and anti-racism activism are related. As we describe in more detail below, experiencing individual racism is stressful and related to more activism. At the same time, experiencing individual racism is related to more anti-racism activism, which also relates to more racism-related stress.

Both Black adolescents and emerging adults engaged in a moderate amount of low-risk anti-racism activism in support of Black communities, and the emerging adults in our sample engaged in more distinct types of low-risk anti-racism activism. High-risk anti-racism activism was less common among participants in this study, and we did not find a statistically or practically significant difference in rates of high-risk anti-racism activism for adolescents and emerging adults. These findings align with extant research which finds that adolescents and emerging adults become more civically engaged and develop more political interest over time (Wray-Lake & Shubert, 2019; Wray-Lake et al., 2014, 2020).

As hypothesized, we found that anti-racism activism and racism-related stress were both important mediators to consider in the associations between experiences of individual racism, racism-related stress, and anti-racism activism. Evidence supports the notion that racism-related stress and activism may be linked to individual racism experiences (Hope, Gugwor, et al., 2019; Szymanski & Lewis, 2015), but the role of anticipatory race-related stress was less clear in previous research. Anticipatory race-related stress is a prolonged and chronic psychological and physical response to racism that carries health risk (Turan et al., 2015) and that may shape decisions about whether or not it is safe, feasible, or desirable to engage in activism. In fact, adolescents and emerging adults often seek to engage in activism within social justice organizations that provide protected and affirming spaces to mitigate potential risk (Akiva et al., 2017).

However, notable differences emerged in the types of activism and the types of anticipatory stress that may be important for adolescents versus emerging adults. For adolescents, both high-risk and low-risk anti-racism activism was associated with *psychological* anticipatory racism-related stress. For emerging adults, *high-risk* anti-racism activism was connected to physiological stress and *low-risk* activism to psychological stress. These results align with previous research which finds that the associations between anticipatory racism-related stress, orientation toward future activism, and racial identity are different for adolescent boys and emerging adult men (Hope, Cryer-Coupet, et al., 2020). It may be that high-risk activism is especially physiologically stressful for Black emerging adults because high-risk actions

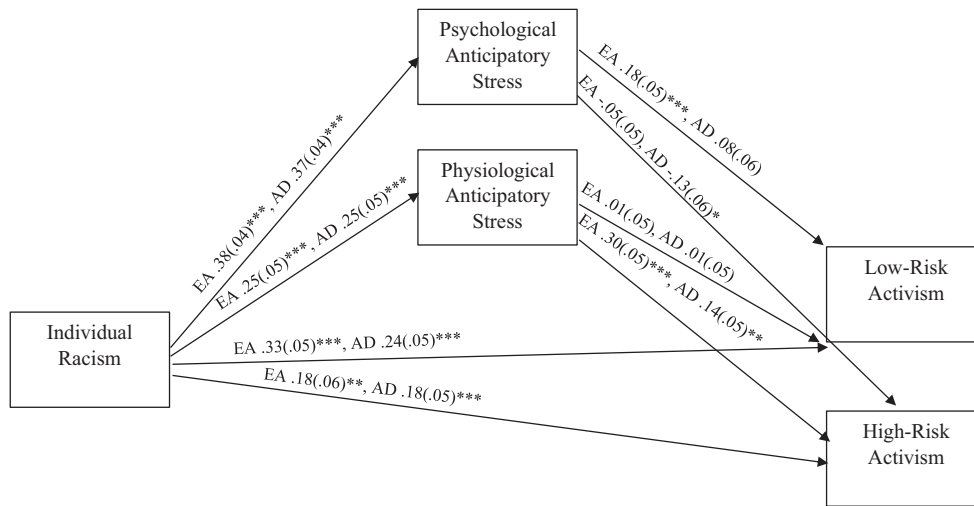


FIGURE 3 Competing multigroup mediation model 2: anticipatory racism-related stress as a mediator. *Note:* AD, adolescent; EA, emerging adult. Standardized coefficients for each path are displayed, followed by standard errors in parentheses. Control variable path results are excluded for parsimony, but controls included gender, LGBTQ, income, employment, and volunteered. Covariances were modeled between both outcomes and both mediators, respectively. * $p < .05$; ** $p < .01$; *** $p < .001$

may have distinct adult consequences (e.g., loss of employment, arrest), thus heightening the anticipatory stress and corresponding rumination and vigilance to more noticeable physiological levels. Activism of any kind may be connected to anticipation of future racism-related stress (i.e., psychological anticipatory stress) for Black adolescents, which may be an adaptive response in the context of the intractability of racism in their everyday lives. This anticipatory stress may be helpful if it catalyzes engagement in activism, but only if it does so without subsequently exacerbating stress after such engagement. Perhaps, only low-risk activism is connected to psychological anticipation of future racism-related stress for Black emerging adults because they are better able to differentiate the consequences of different forms of activism, due to more advanced sociocognitive development and the potential for more political and civic experience (Flanagan & Levine, 2010). These findings warrant further investigation into whether and how developmental periods and processes factor into the differential associations between anti-racism activism and anticipatory racism-related stress.

Results of competing mediation models also suggest some bidirectional associations between high-risk anti-racism activism and anticipatory racism-related stress. For emerging adults, more high-risk anti-racism activism was associated with more physiological anticipatory racism-related stress and vice versa. For adolescents, more high-risk anti-racism activism was related to more psychological anticipatory racism-related stress and vice versa. Despite differences in the types of anticipatory stress, overall, results support both proposed competing models. Anti-racism activism may engender anticipatory stress, but the stress that Black adolescents and emerging adults experience from racism may also be used as a catalyst for anti-racism activism.

In contrast, associations between low-risk anti-racism activism and anticipatory racism-related stress did not appear to be bidirectional for both emerging adults and adolescents. For emerging adults, more low-risk anti-racism activism was associated with more psychological anticipatory stress and vice versa. For adolescents, engagement in low-risk activism was related to psychological stress, but psychological stress did not appear to be a catalyst for engagement in low-risk anti-racism activism. These differences may be, in part, due to the potential regularity of low-risk versus high-risk anti-racism activism. Low-risk anti-racism activism can occur on a regular basis and in the context of everyday interactions (e.g., confronting someone you are already friends with about a racist comment) compared to high-risk anti-racism activism (e.g., joining a protest), which may be more episodic and irregular. Thus, it is possible that adolescents and emerging adults engage in low-risk anti-racism activism at safer albeit more frequent levels in their everyday lives. This regular engagement, and related thinking about racism, may cause vigilance about expecting another experience of racism in the future. Because low-risk activism typically involves engagement in less risky situations in everyday life, physiological anticipatory stress responses may not be immediately felt, as bodily responses to chronic stressors and lower intensity engagement may be blunted over time as the body preserves resources to mobilize in more dangerous and high-intensity situations (e.g., at a protest). This contention should be addressed in future research.

Limitations and future directions

This study is not without limitations. First, this study was cross-sectional. We cannot infer causality from our

findings or speak to the longitudinal developmental nature of how these processes co-occur over the lifespan. Although we examined two competing mediation models to begin to examine reciprocal associations, future studies should employ longitudinal methods to tease apart the directionality of the relation between experiences of racism, anticipatory racism-related stress, and anti-racism activism over time. Indeed, using cohort-sequential methodology could help determine whether cohort effects are responsible for the age group differences in our findings. Second, we relied on self-report of physiological anticipatory racism-related stress. Although a person's interpretation of their own anticipatory racism-related stress is meaningful, future studies should consider also collecting physiological data about anticipatory stress in experimental or ambulatory settings. It may be possible that self-reported physiological responses to racism and ambulatory- or laboratory-monitored physiological responses are differentially related to positive youth development outcomes (e.g., Volpe et al., 2019). Finally, it is important to note that we focused on anti-racism activism from a risk perspective, which is not inclusive of all types of activism or anti-racism action. Future research should carefully consider measurement and test these processes with other types of anti-racism action.

A strength of our study was the diversity of our Black sample in terms of geographic location, urbanicity, and economic status. However, our sample had relatively small percentages of non-African American (12.3%), rural (10.1%), and LGBTQ (15.7%) individuals, which may limit generalizability. Participants were also recruited through Qualtrics Panels, and results may not apply broadly to Black adolescents and emerging adults who have no or limited internet access. Another strength of this study is the measure of anti-racism activism that also considers relative risk of engagement. However, it should be noted that the consequences and perceived risk of engaging in anti-racism activism may not extend to other forms of activism or civic engagement. In addition to anti-racism activism at various risk levels, it may be worthwhile to examine how associations between experiences of racism and anticipatory racism-related stress extend to activism across other social justice domains (e.g., LGBTQ activism) and platforms (e.g., online vs. in-person engagement). The findings of the current study provide some clarity and some additional questions about how anti-racism activism may function as a coping strategy and a possible stressor for Black adolescents and emerging adults who experience racism. Anticipatory racism-related stress may be both a consequence and precipitator of engagement in anti-racism activism, for both emerging adults and adolescents, although the specific types of stress (psychological, physiological) and the types of activism (low-risk, high-risk) vary.

Implications and conclusion

Our findings have implications for the health of Black adolescents and emerging adults. Given the negative health outcomes associated with anticipatory racism-related stress (e.g., Hill & Hoggard, 2018; Utsey et al., 2013), it is important for mental and physical health professionals to discuss whether their Black adolescent and emerging adult clients engage in activism, whether such activism is high-risk or low-risk, and if it causes anticipatory racism-related stress. Concerns regarding the potential stress of anti-racism activism should be balanced with considerations for how the racism that adolescents and emerging adults are targeting via activism negatively affects individual and community health. Anti-racist activism is a viable option for Black adolescents and emerging adults to become involved in dismantling racist oppressive systems they encounter (Hope & Spencer, 2017). As such, it may be prudent for health professionals and researchers to investigate and suggest methods of engagement in anti-racism activism that reduce anticipatory racism-related stress, and to create interventions that help Black adolescents and emerging adults recover from the potential negative health ramifications of activism. These implications are especially important to consider within the current context where Black adolescents and emerging adults navigate continued anti-Black police brutality and the related resurgence of the Black Lives Matter movement (Sobo et al., 2020). Creating adaptive strategies for reducing anticipatory racism-related stress in preparation to engage in activism (e.g., safety plan for attending a protest) as well as strategies for dampening anticipatory racism-related stress after engagement in activism (e.g., social support and community affirmation) may be especially useful directions for practitioners' community-based programming. Programs focused on Black adolescents and emerging adults should seek to understand both the potential risks and opportunities of civic engagement, and incorporate these potential adaptive strategies. Future research should examine the efficacy of such strategies specifically for anticipatory racism-related stress before and in response to engagement in anti-racism activism.

Furthermore, our findings inform youth development by suggesting that strategies for supporting anti-racism activism and mitigating anticipatory racism-related stress may be different for adolescents and emerging adults. Mitigating physiological anticipatory racism-related stress may be a key avenue for improving the health of Black emerging adults, who face increased cardiovascular risk during this developmental period (Casagrande et al., 2016). For example, biofeedback and mindfulness techniques have been found to be associated with better physiological functioning during anticipatory stress, as a method of proactive coping with stress (Schlatter et al., 2021). Strategies for

reducing preservative cognition (e.g., worry, rumination) particularly may also be effective in reducing anticipatory stress (Kramer et al., 2021), consistent with Brosschot et al.'s (2006) preservative cognition hypothesis. Work with Black adolescents might focus on strategies for reducing psychological anticipatory stress that may help adolescents continue to feel prepared for racism, maintain their agency, and determine if, when, and how to pursue racial justice through activism.

The current study contributes to literature by revealing bidirectional and unidirectional associations between anticipatory racism-related stress and anti-racist activism, in response to experiences of individual racism. These associations appear to vary for Black adolescents and emerging adults. The current findings and future research can together inform intervention efforts and treatment methods that seek to promote health in Black adolescents and emerging adults as they navigate racism and take action to seek racial justice. Black adolescents and emerging adults are active and agentic in resisting racism through anti-racism activism. As developmental scientists, we can support them in seeking an anti-racist society by learning how Black adolescents and emerging adults can seek justice with minimal risk to their own health.

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