



# HHS Public Access

Author manuscript

*J Res Adolesc.* Author manuscript; available in PMC 2023 April 03.

Published in final edited form as:

*J Res Adolesc.* 2022 March ; 32(1): 270–289. doi:10.1111/jora.12733.

## Using Ecological Momentary Assessments to Understand Black Youths' Experiences of Racism, Stress, and Safety

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### Abstract

Anti-Black racism, both interpersonal and systemic, is pervasive. Individual- and neighborhood-level expressions of anti-Black racism have been explored in many studies; however, Black youths' experiences of racism across routine activity locations have not been examined as extensively. To address this gap, a Youth Research Advisory Board (YRAB) recruited 75 Black youths ( $M(SD) = 15.53(1.77)$ ), living in a segregated neighborhood (93% African American) with 42% of residents living below the poverty line, to participate in research on this topic. Participants in the study completed surveys three times a day for a month (ecological momentary assessment) about their positive and negative emotions and perceptions of racism and social

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Conflict of interest: The authors whose names are listed immediately below certify that they have no affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or nonfinancial interest (such as personal or professional relationships, affiliations, knowledge, or beliefs) in the subject matter or materials discussed in this manuscript.

support in routine activity locations ( $n = 2041$ ). Youths reported more racism when attending school and walking on the street. A relationship between perceptions of racism and social support in routine activity locations and positive and negative momentary emotions was found. This paper will present implications for supporting adolescent development and interrupting anti-Black racism at the level of routine activity locations, along with opportunities for engaging youth-led community-based solutions.

## Keywords

ecological momentary assessments; Black youth; racism

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Across the United States, there is a reckoning spreading about the pervasive interlocking nature of anti-Black racism, defined as interpersonal, institutional, systemic, and cultural violence targeting people of African descent (Fanon, 1963; Jones, 1972). For example, mourning and outrage spread across the country as news about the police murders of George Floyd (Bogel-Burroughs, 2020) in Minnesota and Breonna Taylor in Kentucky (Oppel & Taylor, 2020) went viral and sparked uprisings for justice. Black youth activists, at the forefront of these movements, are powerfully shifting public discourse to address social injustice more fully for all Black lives. They engage in this work while being at greater risk of dying of murder, especially if trans or gender nonbinary (Talusán, 2016), suicide (di Giacomo, Krausz, Colmegna, Aspesi, & Clerici, 2018), or losing loved ones to COVID-19 (Millett et al., 2020). Black youths also are more likely to be pushed out of schools (Shedd, 2015), racially profiled (Alexander, 2012; Smiley, 2019), or killed by police (Tolliver, Hadden, Snowden, & Brown-Manning, 2016).

Racism experienced by Black youths impacts adolescent development. The harm associated with discrimination and racial microaggressions, defined as “brief and commonplace daily verbal, behavioral, and environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults to the target person or group” (Sue et al., 2007, p. 273), have been well researched. Discrimination and microaggressions have been found to have an impact upon psychological distress in people who experience them—for example, leading to a decrease in sense of safety and an increase in hypervigilance (Bryant-Davis & Ocampo, 2005; Carter et al., 2013; Grills et al., 2016; Jackson et al., 2004; Pierce, Carew, Pierce-Gonzalez, & Wills, 1977; Tyner, 2002). In contrast, perceived social support has been related to decreases in distress and positive youth development among Black youths (Grills et al., 2016).

Morris Rosenberg (1986) stated that adolescents develop a narrative identity in interaction with their social environments. Specifically, a relationship between perceptions of neighborhood characteristics and expectations of racial discrimination among some Black youths has been found to last from adolescence to young adulthood, which has implications for well-being (Witherspoon, Seaton, & Rivas-Drake, 2016). In understanding the impact of anti-Black racism on Black youths, individual- and neighborhood-level factors are often explored; however, few studies have investigated where in adolescents’ ecological systems they experience racism and social support and its relation to youth momentary emotion.

Adolescence, an important developmental period, is often a time when youths increasingly interact with spaces outside of their home; therefore, it may be particularly important to consider the developmental impact of adolescent youths' perceptions of racism in different routine activity locations, defined as locations where youths routinely spend time over the course of their daily lives (Mennis, Mason, & Cao, 2013). While it is essential to consider interpersonal experiences of racism, it is also necessary to consider the context in which racism and social support take place. To fill this gap, a YRAB recruited 75 Black youths to complete brief surveys three times a day for a month about racism and social support in their current routine activity locations and their momentary negative and positive emotions.

## LITERATURE REVIEW

In order to explore Black youths' perception of racism in routine activity locations, we must define the nature and function of racism. In this section, we present historical and contemporary understandings of anti-Black racism. Additionally, we summarize what is known about the psychological and social impact of anti-Black racism and support within the ecological context Black youths encounter.

### Anti-Black Racism, Historical Trauma, and Black Youth Well-Being

Because I'm at a dis ease, dis advantage, dismantled, disability of your white knees killing me, been on our neck for centuries, knees or trees, either way you're still lynching me! And what did we ever do to you except for build and make America Great initially!

- Nick Cannon, I Can't Breathe... Again

Anti-Black racism in America is foundational. It is integral to the American ethos and seminal ideologies that shaped the Nation's founding constitution, formed its early economic systems, and governed its social interactions (Richards, 1994). Racism is racial prejudice exerted against "a racial group defined as inferior by individuals and institutions with the intentional or unintentional support of the entire culture" through the use of collective power (Jones, 1972, p. 117). Anti-Black racism, therefore, is racism that directly targets people of African descent and has been used to justify exploitation and harm by Whites.

Historical and contemporary accounts of Anti-Black racism in America are commonly associated with racial terrorism by Whites against Blacks, such as intergenerational enslavement and violent, bigoted, overt aggression by the Ku Klux Klan (Jones, 1972). However, aversion and racial and colorist microaggressions enacted at the level of policy are also expressions of anti-Black racism, such as legalized segregation excluding many Black people from vital resources needed for survival, long-term sustainability, or wealth building (Hall & Crutchfield, 2018; Jones, 1972; Pierce et al., 1977). Moreover, at the cultural level, anti-Black racism is maintained through white supremacist socialization (Jones, 1972). For example, culturally, anti-Black racism in America distorts, denies, and erases the historical contributions of Black youths while simultaneously dismissing, vilifying, and co-opting their creativity (Laybourn & Pine, 2020). Anti-Black racism is antithetical to Black youth well-being (Ortega-Williams & Harden, 2021).

Anti-Black racism at the environmental level harms Black youths and their families through disproportionate subjection to environmental harms and limited environmental benefits (Taylor, 2014, p. 2). For example, numerous studies have found that race [exposure to racism] is the strongest predictor of exposure and proximity to environmental hazards (see Asch & Seneca, 1978; Bullard, 1983; Commission for Racial Justice, 1987; Mohai & Bryant, 1992; Mohai et al., 2009). Redlining and other racist housing policies often restrict Black people, and other communities of color, to neighborhoods located near industrial sites, highways, and superfund sites that produce disproportionate amounts of pollution (Bell, 2016).

Anti-Black racism that Black youth encounter has historical roots. According to the historical trauma framework, harm from contemporary forms of violence directed at an ethnic or racial group compounds the pain from initial mass group-level harm (Brave Heart, 1998; DeGruy-Leary, 2005; Walls & Whitbeck, 2012). Historical traumas, defined as soul wounds, cumulative traumas, unresolved grief, and compounded losses for a racial or ethnic group, occur during subjugation (Brave Heart, 1998). Dr. Maria Yellow Horse Brave Heart (1998), a Lakota social worker, originated this framework, transforming how distal historical traumas like genocide and enslavement impact indigenous people contemporarily.

The historical trauma framework has been used among multiple racial and ethnic groups, including African Americans, to better understand the impact of racialized terrorism (Ortega-Williams, Crutchfield, & Hall, 2019; Williams-Washington, 2010). Black youths have drawn parallels between historical and contemporary attacks on Black lives, such as linking the murder of Emmett Till in 1955 to the murders of Trayvon Martin in 2008 and Ma'Khia Bryant in 2021 (Alvarez & Buckley, 2013; Sanchez, Morales, & Carroll, 2021; Smiley, 2019). Historical traumas are theorized to have an intergenerational impact, emotionally, physically, and spiritually, which is often compounded by current forms of targeted violence (DeGruy-Leary, 2005; Henderson, Stephens, Ortega-Williams, & Walton, 2021; Richards, 1994). Sotero (2006) conceptualized that the intergenerational trauma response, emanating from historical traumas, is maintained through segregation, systematic physical and psychological violence, economic destruction, and cultural dispossession. Historical trauma, as well as historical strengths (Smith Brice & McLane-Davison, 2020), is a vital context to consider when exploring the psychological and physiological impact of anti-Black racism upon youths.

### **Psychological Impact of Anti-Black Racism and Social Support Upon Youths**

Social stress theories have argued that racial discrimination, when perceived as stressful, is related to negative emotion and both psychological and physiological stress responses (Joseph, Jaing, & Zilioli, 2021). The literature on the impacts of racism and discrimination on the mental health of youths is plentiful; there are several systematic reviews, meta-analyses, and literature reviews on the topic (Benner et al., 2018; Lee & Ahn, 2013; Pachter & Coll, 2009; Priest, Paradies, Stevens, & Bailie, 2010). Unfortunately, a common theme among these large reviews is that experiences of racism and discrimination result in negative consequences for youth mental health. In a meta-analysis that included 314 separate samples and a total of 91,297 adolescents, 126 studies found a small to moderate correlation between

discrimination and socioemotional distress (Benner et al., 2018). The strongest correlations were between perceptions of discrimination and depression (smaller to moderate effect sizes) and between perceptions of discrimination, well-being, and self-esteem (Benner et al., 2018). These associations were stronger in studies that measured discrimination in the last year rather than in a lifetime (Benner et al., 2018). Another meta-analysis found that the relationship between perceptions of discrimination and psychological distress is stronger for adolescents than for adults (Lee & Ahn, 2013). After reviewing 121 studies, Priest et al. (2010) found that the mental health outcomes of anxiety and depression were commonly associated with experiences of racial discrimination. Stressful experiences, like discrimination, may impact adolescent mental health by increasing daily experiences of negative emotion and decreasing experiences of positive emotion (Schneiders et al., 2020).

Conversely, social support has been found to be used as a coping strategy by Black adolescents when faced with discrimination (Ayres & Leaper, 2013). Measures of social support often include enacted emotional and instrumental support and global appraisals of social support (SS-A; Vaux et al., 1986, p. 196). Studies have found the subjective appraisals of social support have a stronger relationship to distress and well-being than enacted social support in social networks (Vaux et al., 1986). Among Black adolescents perceived, social support is related to positive mental health (Cooper, Brown, Metzger, Clinton, & Guthrie, 2013) and less distress (Caldwell, Zimmerman, Bernat, Sellers, & Notaro, 2002; Gaylord-Harden, Ragsdale, Mandara, Richards, & Petersen, 2007). Social support may be particularly important for Black youths who are more likely to seek support from family and friends to deal with stressful situations (Carter & Forsyth, 2010). In addition to interpersonal social support, living in neighborhoods with more social cohesion and cumulative social support is related to less psychological distress among Black adolescents (Hurd, Stoddard, & Zimmerman, 2013). Lastly, some evidence suggests that both social support and perceptions of neighborhood social cohesion are related to experiencing less racial discrimination (Saleem, Busby & Lambert, 2018; Smith, Sun, & Gordon, 2019).

Studies of the relationship between experiences of racism, social support, and distress have typically asked respondents about their personal experiences of racism and social support retrospectively over a defined time period and assess limited information about the source (Benner & Wang, 2017; Benner et al., 2018; Stone et al., 1998). Studies of social support have found that participants reported using social support to cope more often in momentary reports they then did in retrospective reports (Stone et al., 1998). Daily diary studies of adolescents have found that, on days where they perceive more peer and parental support, they also report increases in happiness and social connectedness (Schacter & Margolin, 2019). Moreover, there have only been a handful of studies that used daily diary methodology to test the relationship between daily experiences of discrimination and psychological distress (Huynh & Fuligni, 2010; Rivas-Drake, Hughes & Way, 2009; Seaton & Douglass, 2014). One study that employed this method found that daily discrimination was associated with increased depression and a higher average number of days that participants reported experiencing distress (Huynh & Fuligni, 2010). Another study that used daily diary methods found that youths reported discriminatory events occurring on 2.44 of the 14-day study period, with 79% of the sample reporting at least one discriminatory event during the study. These events were related to increased depressive symptoms the

following day (Seaton & Douglass, 2014). While these studies demonstrate the frequency of racist encounters and social support, they do not address the routine activity locations where they occurred within neighborhoods or how perceived support as present or absent in that location relates to distress.

### **Neighborhood-Level Anti-Black Racism, Social Support, and Black Youth Safety**

Ecological system theory argues that contexts that are closer to an adolescent have the most consequence in their lived experience and outcomes (Bronfenbrenner, 1979). A distinction has been made between interpersonal and institutional racism; however, institutional racism is created and maintained through interpersonal interactions in all spaces in which youths spend time. Similarly, social support is typically discussed at the interpersonal-level, with little acknowledgment of collective social support. Studies that have attempted to understand the relationship between interpersonal and institutional racism and support have often focused on the neighborhood-level (Aneshensel & Sucoff, 1996; Elliot, 2000; Witherspoon et al., 2016). While adolescents certainly spend a significant amount of time in their home neighborhood, limiting investigation to aggregated characteristics of their residence fails to adequately describe the totality of youths' experiences (Browning & Soller, 2014)—especially as results have been mixed about the broad influence of one's neighborhood. For example, Martin et al. (2011) found that youths who lived in neighborhoods where the majority of residents were Black reported fewer incidents of discrimination and more support. Among Black adolescents, neighborhood social cohesion, when present, buffers the relationship between neighborhood-level discrimination and externalizing behaviors (Riina Martin, Gardner, & Brooks-Gunn, 2013). However, this study found that the percentage of Black residents was not related to perceptions of racism both in the neighborhood and outside of it (Riina et al., 2013). Therefore, nuances within and between routine activity locations become salient factors in exploring experiences of racism.

One of the few studies that considered the relationship between discrimination and distress across multiple contexts and spaces found that discrimination happened most frequently at school and was perpetrated by both peers and adults (Fisher, Wallace, & Fenton, 2000). In a scale developed in the Fisher et al. (2000) study, youths were asked about being hassled by a "store clerk or store guard" or "harassed by police." They were also asked four questions about discrimination at school. The responses to all of these questions were summarized into one measure of institutional racism. All other questions were broad and asked about youths' experiences of racism more generally without reference to the context in which they took place. Black youths were found to be more likely than White youths to report distress related to both institutional and educational racism (Fisher et al., 2000). In the same study, Black youths reported more distress due to being hassled by a store clerk (75%) and receiving bad service at a restaurant (65%) than any other racial group, highlighting the importance of considering racism in routine activity locations. Mason, Cheung, and Walker (2004) conducted ecological interviews with youths about their routine activity locations. In these interviews, youths reported specific locations as being safe and risky and when asked what made them think that, they often cited the characteristics of the social networks they encountered there (Mason et al., 2004). In this study, however, in depth information was only provided for one participant as a case study. Exploring how "contextual and individual



assets and resources [that might] attenuate the effects of racial discrimination” could support youth development approaches (Benner et al., 2018, p. 18).

### Current Study

Utilizing real-time measurements of adolescents in their environment advances our knowledge of neighborhood effects upon adolescent development by more precisely measuring adolescents’ exposure to stressors, including racism, and protective factors, including social support. Crude measures of neighborhoods (e.g., census tracts), that rarely represent individuals’ actual experiences in space, have limited our understanding of complex dynamics within ecological systems. Distal measures may be partially responsible for inconsistent associations found between contextual risks and adolescent outcomes, in addition to limiting our ability to design interventions that address the impact of racism on Black adolescents’ well-being. To address these limitations, the SPIN (Spaces and People in Neighborhoods) Project created a YRAB to participate in a study in which youth participants were recruited by word of mouth and advertisements to complete brief surveys three times a day for a month about their perceptions of racism and social support in routine activity locations (this type of study is called ecological momentary assessment or EMA) as well as their emotion in the moment. In addition to asking youths to complete brief surveys during their day, we also asked them to complete a brief survey at the end of every day, reporting on their overall feeling of stress and/or safety throughout the day. This study aimed to investigate the following research questions:

1. Where do Black youths experience racism and social support?
2. Do Black youths’ perceptions of racism, social support, and momentary reports of negative and/or positive emotions vary by the type of routine activity location they are in?
3. Are Black youths’ perceptions of racism and/or support in routine activity locations related to their momentary reports of negative and/or positive emotions?
4. Do Black youths’ daily reports of racism and/or support predict their reports of the stress and safety they experienced throughout the day?

More specifically, in this paper, we use multilevel models to test the following hypotheses:

1. We will observe significant differences in the Black youths’ perceptions of racism and social support by routine activity location type.
2. Youths’ perception of racism in different types of routine activity locations will be positively related to momentary negative emotion and negatively related to momentary positive emotion.
3. Youths’ perception of social support in different types of routine activity locations will be negatively related to momentary negative emotion and positively related to momentary positive emotion.
4. Youths’ perceptions of racism in routine activity locations throughout a day will be related to feeling more stress and less safety during the day.

5. Youths' perceptions of social support in routine activity locations throughout a day will be related to feeling less stress and safer during the day.

All research activities, including the writing of this paper, were done in partnership with the SPIN Project YRAB.

## METHODS

### Participants

The YRAB recruited 75 Black youths using advertisements and word of mouth to participate in the SPIN Project. The focal neighborhood in this study is one square mile, with 6442 residents, including many families who have lived there for generations. It has over 20 community-engaged organizations led by residents and stakeholders, as well as thriving businesses.

The target neighborhood, comprising five census tracts, is 93% African American, with 42% of residents living below the poverty line (City of Pittsburgh, 2010). In the neighborhood, 43.5% of total land parcels are vacant, 26.4% of which are publicly owned (PNCIS, 2011). This neighborhood was selected as the study's focal neighborhood because our YRAB described many aspects of structural racism, such as more police surveilling their neighborhood and more White teachers working in their schools. Additionally, the neighborhood has a robust network of youth centers, a library, and other community development-based institutions.

Although youths were screened at baseline to ensure that they currently lived in the focal neighborhood, a close examination of the participants' EMA data revealed that 29% of participants lived in one of eight immediately-adjacent census tracts. While not all participants lived in the target neighborhood, all participants had significant ties to it, and many attended the neighborhood high school. Additionally, the eight immediately surrounding census tracts had similar demographics to the study's focal neighborhood, with 76% of residents identifying as African American and 33% of residents living below the poverty line. Reflecting these demographics, 96% of the sample identified as African American, one participant identified as Hispanic/Latinx, and two participants identified as "other" and reported that they were (1) Black and Filipino, and (2) Indian.

### Youth Research Advisory Board

All the SPIN project activities were guided by the YRAB, composed of 11 youths aged 13–18 years, and recruited in March of 2018 at the focal neighborhood's school. YRAB members were originally recruited from a school-based enrichment program at the junior high in the focal neighborhood. After the initial members were recruited, they were encouraged to invite their friends. The majority (72%) of the YRAB participants were in 8th grade at its inception and the majority were female (81%). The YRAB members met once a week to oversee all aspects of the research study including a pilot study in the fall of 2018. The pilot study included: (1) individual cognitive interviews about all research questions used in the EMA portion of the study, (2) completion of brief surveys throughout the day for a month, and (3) weekly meetings with researchers during data collection to



provide feedback on the data collection process. Measures were modified in response to the board's feedback, and items were added. Updates based on feedback included a refinement of the measure capturing negative and positive momentary emotion and the addition of items measuring racism.

Prior to the implementation of the pilot study, youths identified important routine activity locations in their neighborhood and created geofences, or virtual boundaries around a location, to signal the application on the phone to push a survey to the participant's phone. After the pilot study was completed, more geofences were added based on the passive GPS data collected in the pilot study. Random prompts were also added to ensure that youths would receive at least once survey during each study period (morning, 6:00 a.m.–12:00 p.m.; afternoon, 12:00 p.m.–5:00 p.m.; and evening, 5:00 p.m.–11:00 p.m.) even if they were not interacting with geofences, i.e., they were at home or outside of the neighborhood.

Every survey asked youths to identify what type of routine activity location they were in with a prepopulated list of 14 types and the opportunity to select others and fill in a different type. This list of routine activity location types was generated by the study's YRAB and modified after the measure was piloted. In addition to completing the pilot study, YRAB members completed an IRB training, participated in measurement development, learned about data visualization including mapping, learned how to analyze data in STATA, and created research posters, which they presented to local leaders and at relevant conferences.

### Data Collection

EMAs, or brief surveys, were completed during the course of participants' everyday life to limit recall bias by "capturing life as it is lived." Study participants were given cell phones and asked to complete three surveys a day for a month about their perceptions of racism and/or social support in locations they traversed throughout their day and their momentary feelings of negative and/or positive emotions. This approach also enabled the research team to examine within-person and location variation in the relationships between perceptions of spaces, and the emotions participants experienced while there (Bolger, Davis, & Rafaeli, 2003). EMA surveys were triggered, or pushed to youths' cell phones, using a combination of geofences placed around locations of interest for a month to capture an adequate number of reports of different routine activity locations and random triggers. EMA enabled the research team to capture routine activity location type variation in youths' perceptions of activity spaces.

The data used in the analysis were collected between July and November 2019, after the pilot study was completed and modifications were made. During this time, 75 Black youths, aged 13–18 years, who were currently living in the focal neighborhood, were recruited by the YRAB using word of mouth, snowball sampling, and advertising in strategic spaces in the neighborhood. After describing the study, staff obtained parental consent and explained the study to youths, to obtain provided assent to participate. Youths were assigned to one of the three cohorts. There was one cohort that began data collection in July, one that began data collection in September, and the last that began data collection in October. The cohorts were designed to ensure youth interaction with routine activity locations in the summer and during the school was adequately represented. At the beginning of the youths'

study period, participants completed an initial survey and were given a cell phone with the application MetricWire installed. Youths were asked to complete three surveys each day for a month about their perceptions of their current surroundings and their negative and/or positive momentary emotions. Once a survey was pushed during the day, youths had 45 min to complete it, or it would disappear and another would take its place. Youths were reminded to take the survey every 15 min. Participant incentives were provided at the end of every study week, with the amount contingent on the number of surveys completed. Additionally, at the end of every day during the study period, youths were asked to complete a survey that assessed how stressed and/or safe they felt during the day. For the end-of-day surveys, youths were given until 6:00 a.m. the following day to complete it. Youths were reminded three times to take the survey, every 15 min after the first notification was sent. Youths were given \$15 a week if they completed any surveys, \$20 a week if they completed 75%, and \$25 if they completed 85% of all EMA surveys.

On average, each participant completed 30.8 EMA ( $SD = 16.92$ ) surveys during the day throughout the study period, with the number completed ranging from 1 to 75 and 17.73 ( $SD = 8.48$ ) end-of-day surveys. Overall, 38% of EMA completed during the day were triggered by geofences and 62% were triggered by random triggers, with 55% of surveys completed in the target neighborhood (60% triggered by geofences) and 45% being completed outside of the neighborhood. Despite repeated efforts to increase the participant response rate, the response rate to EMA surveys pushed during the day was 29%, and end-of-day survey response rate was 62%.

No significant difference was found in compliance between males ( $M (SD) = 32.64 (17.53)$ ) and females ( $M (SD) = 28.83 (16.25)$ ). There was also no significant difference in rates of participation by age, with participants under the age of 15 completing 27.6 ( $SD = 15.29$ ) surveys on average and participants at the age of 15 or older completing 33.9 ( $SD = 18.03$ ) on average. Survey submissions were not evenly distributed across the day, with 42% of EMA surveys submitted in the afternoon (noon–5:00 p.m.), 32% submitted in the evening (5:00–11:00 p.m.), and 26% submitted in the morning (6:00 a.m.–noon). In this study, participants submitted a single survey on 33% of days, two surveys on 43% of days, and three surveys on 23% of days. Participants were also less likely to submit EMA surveys on days later in the participants' study period. In this study, 72% of all EMA responses were completed on weekdays and 19% on weekends, suggesting slightly better compliance during the weekdays. On average, participants submitted 9.9 ( $SD = 4.99$ ) surveys on the weekend, with a minimum of 0 and a maximum of 21. On average, they submitted 26.3 ( $SD = 11.13$ ) surveys on the weekdays, with a minimum of 0 and a maximum of 55. Of all EMAs, 19% were completed in July, 25% in August, 27% in September, 27% in October, and 2% in November.

A planned missing at random data design was used in the EMA surveys to allow for a larger number of items and constructs to be assessed without overburdening participants. This was particularly important in this study because we were asking adolescents to complete a total of four surveys a day for a month (Little, 2013). A core set of 15 items was included in every survey and 20 blocks were created by randomly selecting 50% of all survey items used to assess the characteristics of routine activity locations, with 28 items in all. One block was

randomly selected to be included with the core set every time a survey was pushed. For the racism and social support measures, each item in the construct had between 49% missing and 50% missing, with 27 missing data patterns. At least one item from the racism construct was measured in 96% of all EMA surveys, and at least one item from the social support construct was measured on 85% of all surveys. All other measures in the study had less than 0.01% missing. Markov Monte Carlo method of multiple imputation was used to generate 100 imputed data sets using an iterative method (Little, 2013). Only data that were missing in completed EMA surveys were imputed. Surveys that were sent to participants but not completed are not included in this analysis.

After the conclusion of mobile data collection, the participants completed an ecological interview in which study staff showed participants the location of their survey submission to verify, clarify, or explain the survey submission locations. The study staff used a structured interview guide to facilitate the interviews. All ecological interviews were audio-recorded and transcribed.

### Research and Scholarship Team Positionality

The authors of this paper, including the YRAB, are of multiple ages, genders, racial identities, sexual orientations, income levels, and statuses as insiders and outsiders of the neighborhood where residents participated in the study. Some identify as Black, White, queer, straight, cisgender, mothers, students, educators, researchers, social workers, psychologists, community-based researchers, and public scholar activists. Some members of this team were born and raised in the neighborhood where the study was conducted, while others lived in states far removed from the area. The PI of the SPIN Project identifies as a White, middle class, cisgender, straight, nondisabled female. As an outsider in the communities in which she works, she considers the Black youths that she works with the experts. We explicitly utilized the strengths of our different standpoints, while centering the voices of YRAB members whose experiences closely guided the study.

### Measures

**Routine Activity Location Types.**—Routine activity location types were measured at the beginning of the EMA survey by asking participants, “Where were you when you received the survey?” Response options included: (1) at home, (2) in a car, (3) on a bus, (4) at school, (5) at a friend’s house, (6) at a family member’s house, (7) at a community center, (8) walking on the street, (9) at the park, (10) at a convenience store or gas station, (11) at church, (12) at a vacant house, (13) in a vacant lot, (14) at a restaurant, and (15) other. In this study, vacant houses and vacant lots were combined due to an infrequent report of being in a vacant lot. When youths selected *other*, they were given an opportunity to specify their location. These categories were derived by the studies YRAB and refined based on the pilot. Additionally, responses to the category of other were reviewed by the YRAB and study researchers and resulted in the identification of four additional locations including: (16) at a store, (17) at a library, (18) at work, and (19) at a hospital or doctor’s office. All other identified locations did not have enough responses to merit the creation of an additional category and remained “other”. Some of these responses included a hotel, a dance company, and working out.

**Momentary Emotion, Stress, and Safety.**—To measure momentary negative emotions, youths were asked: “Thinking about when you received the survey, how (1) annoyed, (2) frustrated, (3) overwhelmed, and (4) nervous, were you feeling?” Possible responses ranged from *not at all* (1) to *very much* (5). A mean score was generated to represent momentary negative emotions ( $\alpha = .90$ ). To measure momentary positive emotions, youths were asked: “Thinking about when you receive the survey, how (1) strong, (2) comfortable, and (3) relaxed, were you feeling?” Possible responses ranged from *not at all* (1) to *very much* (5). A mean score was generated to represent safety ( $\alpha = .85$ ). This measure was originally based on the PANAS, which found that momentary negative and positive effects are two distinct constructs (Watson, Clark, & Tellegen, 1988). Items from the PANAS were combined with other existing measures of momentary negative and positive emotion, by asking the YRAB to identify words that indicated negative and positive emotion to them from a list of words that had been used to assess these constructs in previous studies (Joseph et al., 2021). Although not consistently measured across studies, EMA studies that have used some combinations of these words have found that momentary negative and positive emotions are associated with levels of stress responses (Joseph et al., 2021). When momentary positive emotion was reverse coded, and a factor analysis was conducted with all items in both negative and positive emotion scales, two distinct factors were identified. To further test the validity of these measures, the correlation between momentary negative and positive emotion and depression at baseline were estimated and found to correlate in the expected directions. (See Table 1.) Additionally, participants were asked how *stressed* and how *safe* they felt during the day at the end of every study using the following single items: (1) Thinking back on today, how stressed did you feel? (2) Thinking back on today, how unsafe did you feel? Possible responses ranged from *not at all* (1) to *very much* (5). Feeling unsafe was reverse coded to indicate safety.

**Racism.**—Perception of *racism* was measured in EMA surveys by asking participants, “Please tell us how much you agree with the following statements:

1. Here (there) people are judged by the color of their skin.
2. Here (there) people can be themselves without worrying about a racist insult (reverse coded).
3. Here (there) people can relax without fear of police harassment (reverse coded).

Possible responses ranged from (5) *strongly agree* to (1) *strongly disagree*. The items were informed by the Fisher et al. (2000) measure of discrimination distress during adolescence. These three statements were most resonant with the YRAB and were adapted to be applicable across routine activity locations. A mean score was calculated for racism ( $\alpha = .55$ ). Given the low Cronbach’s alpha, the correlations between items were examined. The item that was positively worded (Here people are judged by the color of their skin) was weakly correlated with the other two variables that were negatively worded ( $r = .15$ ,  $r = .10$ ). Of note, scales with two or three items have lower Cronbach’s alphas (Peterson, 1994) and have limited utility in establishing internal consistence (Sijtsma, 2009). When a factor analysis was conducted a single Eigen value above 1 indicated that only one construct was present.

**Social Support.**—In this study, we define *social support* as “information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligation” (Cobb, 1976, p. 300). In order to measure youth perceptions of social support in a routine activity location in EMA surveys, they were asked, “Please tell us how much you agree with the following statements:

1. People care about me here (there).
2. People here (there) value me.
3. People here (there) treat me with respect.
4. I know that people here (there) have my back” (Items were adapted from Social Support Appraisals Scale, Vaux et al., 1986).

Possible responses ranged from (5) *strongly agree* to (1) *strongly disagree*. A mean score was calculated for social support ( $\alpha = .95$ ). Participants’ responses to these measures were group-mean-centered on routine activity location type to answer research questions one and two and were group-mean-centered on individuals to answer research question three (Enders & Tofighi, 2007).

**Control Variables.**—Age, gender, and depression at the baseline survey were included in the final models as controls. The Center for Epidemiologic Studies Depression Scale was used to assess depression (CES-D; Radloff, 1977). This 20-item scale asked participants to “Indicate how often you have felt the following way in the past week.” Examples of statements listed on the scale include:

1. I had trouble keeping my mind on what I was doing.
2. I felt like I could not shake off the blues.
3. I was bothered by things that don’t usually bother me.

Possible responses ranged from (1) *rarely or none of the time* to (5) *most or all of the time*. The measure demonstrated good internal consistency in the sample ( $\alpha = .90$ ).

### Analysis Strategy

All data analysis was conducted in Stata 14 (StataCorp. 2015. Stata Statistical Software: Release 14. College Station, TX: StataCorp LP) in a multilevel framework to account for the nested structure of the data. All analyses were conducted using the *mi* estimate command. The first hypothesis was assessed by estimating cross-classified variance component models with EMA survey responses ( $n = 2041$ ) nested within individuals ( $n = 75$ ), and routine activity location types ( $n = 19$ ) were estimated and intraclass correlations were calculated. To further assess which routine activity location type youths were experiencing more racism, social support, and negative and positive negative emotion, multilevel models where EMA survey responses ( $n = 2041$ ) are nested within individual participants ( $n = 75$ ), and routine activity location types were entered into the model as a categorical variable using “home” as the reference category. To test the study’s second and third hypotheses, location type variation in perceptions of racism and social support were group-mean-centered and entered into the cross-classified multilevel models (Little, 2013). To test the fourth and

fifth hypotheses, multilevel models were estimated with participants' reports of racism and support summarized to the day level and racism and support group-mean-centered at the individual-level to isolate daily variations.

## RESULTS

To test the first research hypothesis, cross-classified variance component models were estimated. In these models, 12% of the variance of momentary positive emotion, 2% of the variance in momentary negative emotion, 14% of the variance in perceptions of social support, and 12% of the variance in perceptions of racism was occurring between routine activity location types. To further understand where participants were experiencing more racism, social support, and negative and positive emotion, multilevel models were estimated. This analysis revealed that youths reported experiencing more racism when they were on a bus ( $B (SE) = .16 (.08)$ ,  $p < .05$ ), at school ( $B (SE) = .36 (.09)$ ,  $p < .001$ ), walking on the street ( $B (SE) = .40 (.07)$ ,  $p < .001$ ), and in a vacant space ( $B (SE) = .62 (.26)$ ,  $p < .01$ ) (see Table 3) compared to when they were at home ( $M (SD) = 2.29 (0.90)$ ) (See Table 2 for means and standard deviations). A very similar pattern was found related to social support, with youths feeling less social support when they were on a bus ( $B (SE) = -.28 (.08)$ ,  $p < .001$ ), at school ( $B (SE) = -.45 (.09)$ ,  $p < .001$ ), on the street ( $B (SE) = -.40 (.07)$ ,  $p < .001$ ), at convenience stores ( $B (SE) = -.47 (.24)$ ,  $p < .05$ ), at stores ( $B (SE) = -.48 (.23)$ ,  $p < .05$ ), and in a vacant space ( $B (SE) = -.59 (.28)$ ,  $p < .05$ ), than when they were at home ( $M (SD) = 3.85 (1.00)$ ).

Participants also reported feeling more social support at their families' houses ( $B (SE) = .26 (.11)$ ,  $p < .05$ ) and community centers ( $B (SE) = .27 (.12)$ ,  $p < .05$ ) compared to when they were at home. Youths only reported feeling less momentary negative emotion when they were at the park ( $B (SE) = -.24 (.11)$ ,  $p < .05$ ) compared to when they were at home and did not report feeling more momentary negative emotion in any other location (See Table 3). Overall, youths reported feeling less momentary positive emotion when they were at school ( $B (SE) = -.24 (.08)$ ,  $p < .01$ ), walking on the street ( $B (SE) = -.28 (.07)$ ,  $p < .001$ ), and at work ( $B (SE) = -.41 (.18)$ ,  $p < .05$ ). They did however report feeling safe at family member's houses ( $B (SE) = .43 (.12)$ ,  $p < .001$ ), community centers ( $B (SE) = .34 (.12)$ ,  $p < .01$ ), parks ( $B (SE) = .38 (.12)$ ,  $p < .01$ ), and the library ( $B (SE) = .81 (.29)$ ,  $p < .01$ ).

When cross-classified multilevel models were estimated to assess the relationship between youths' perceptions of racism and/or support in routine activity locations and momentary reports of negative and positive emotion, both average reports of racism in routine activity location types ( $B (SE) = .16 (.07)$ ,  $p < .05$ ) and individual momentary reports of possible racism in those spaces ( $B (SE) = .10 (.03)$ ,  $p < .001$ ) were associated with more momentary negative emotion (see Table 4). Similarly, a significant negative relationship was observed between both the average reports of social support in routine activity location types ( $B (SE) = -.16 (.06)$ ,  $p < .01$ ) and momentary individual-level reports of social support ( $B (SE) = -.11 (.02)$ ,  $p < .001$ ) and momentary negative emotion. Despite these significant associations, perceptions of racism did not explain any of the variation in negative momentary emotion that was occurring between routine activity location types. When



momentary positive emotions in routine activity location types were considered, a very consistent pattern emerged.

Average perceptions of racism in routine activity location types ( $B (SE) = -.61 (.16)$ ,  $p < .01$ ) and momentary perceptions of racism ( $B (SE) = -.31 (.03)$ ,  $p < .001$ ) were negatively related to momentary positive emotion (see Table 4). Similarly, both perceptions of social support in routine activity location types ( $B (SE) = .66 (.10)$ ,  $p < .001$ ) and momentary reports of social support in a routine activity location ( $B (SE) = .45 (.02)$ ,  $p < .001$ ) were positively related to positive momentary emotions. Considering perception of racism in a space decreased the amount of variation in positive momentary emotion occurring between routine activity location types to 10% and considering social support in a space reduced it to 7%.

When multilevel models were estimated to assess the relationship between youths' daily reports of being in places, they experience racism and/or support and their feelings of stress and safety throughout the day, no association was found between the daily variation in youths' reports of racism in routine activity locations and feeling stressed that day ( $B (SE) = .04 (.05)$ ,  $p = .26$ ) (see Table 5). A significant positive association was, however, found between participants' average perceptions of racism and reports of feeling stressed during a day ( $B (SE) = .69 (.17)$ ,  $p < .001$ ). A significant negative association was found between both youths' average perception of social support ( $B (SE) = -.45 (.13)$ ,  $p < .001$ ) and their daily variation in social support ( $B (SE) = -.09 (.04)$ ,  $p < .05$ ) and their reports of feeling stressed in a day (see Table 5). When considering safety, a significant negative association was found between both participants' average perceptions of racism in routine activity locations ( $B (SE) = -.71 (.12)$ ,  $p < .001$ ) and the daily variation in racism ( $B (SE) = -.10 (.03)$ ,  $p < .001$ ) and how safe they felt that day (see Table 5). Lastly, significant positive associations were found between both participants' average perceptions of social support ( $B (SE) = .43 (.10)$ ,  $p < .001$ ) and their perceptions of social support in a day ( $B (SE) = .15 (.03)$ ,  $p < .001$ ) and how safe they reported having felt during the day.

## DISCUSSION

### Overview

Racism and discrimination occurring at the interpersonal and structural levels are embodied, cumulative, and associated with race-based stress (Krieger, 1999). Therefore, experiences of racism in routine activity locations are important to explore to interrupt its impact. Our research questions recognize the intersections of youths' social networks and routine activity locations, which can reduce and/or contribute to youths' experiences of stress and/or well-being. Awareness of how routine activity locations can negatively impact adolescent development, such as their narrative identity, self-concept, future orientation, or hope, can provide evidence for what precise social changes need to be advocated for, driven by Black youths' lived experiences. By focusing on where Black youths experience racism as well as where they feel supported in their daily lives, allies can more precisely follow the guidance of Black youths when considering how to dismantle oppression and determine what supportive resources to expand.

Our study aimed to understand (1) if Black youths' experiences of momentary negative and positive emotion vary by routine activity location type, (2) if these variations can be explained by their experiences of racism and being supported in a space, and (3) if experiencing more or less racism and/or support in spaces during the day was related to youths' reports of stress and safety at the end of the day. More variation in participants' momentary positive emotions than negative emotions was observed between routine activity location types. At least part of the variation of positive momentary emotions by activity space type was explained by youth perceptions of racism and support in those spaces. Although average perceptions of racism and support were related to momentary negative emotions, they did not explain the variation that was observed between routine activity space location. Daily variations in perceptions of racism were not related to stress at the end of the day but were negatively related to feeling safe.

### **Location Type Matters When Seeking to Disrupt Anti-Black Racism**

In this study, differences existed between routine activity locations within a neighborhood, as well as the places youth traversed daily. Black youths' exposure to racism was not ubiquitous; for example, more racism was reported in public spaces such as schools, buses, and while youths were walking on the street or near vacant lots; however, racism was reported less frequently in parks, community centers, libraries, or families' houses. Therefore, even routine activity locations that are adjacent within the same neighborhood might offer vastly different encounters for Black youths. Both Black youths' momentary reports of racism and the average amount of racism anticipated in routine activity locations were associated with more momentary negative emotions.

Navigating racism burdens Black youths as they perform typical adolescent developmental tasks, such as mastering knowledge needed in school. Youths spend on average 7 hr/day, 5 days/week in school. Youths reported feeling more racism, less support, and more negative and fewer positive momentary emotions in school. These findings suggest that schools can be a risky place for Black youths' development and disruptive to their sense of well-being in places they often depend upon to achieve important developmental milestones. Manifestations of racism that Black youths experience include attending schools that employ few to no Black teachers or staff, being subjected to racist treatment, being ignored or hypersurveilled in class, and being forcibly removed from class by uniformed security officers in response to self-advocacy after being labeled a disturbance. This finding is consistent with findings on racial bias Black youths experience in school, such as institutional pushout and disproportionate rates of suspension of Black students (Harry & Klingler, 2006; Shedd, 2015), as well as literature on racist-incident trauma and race-based traumatic stress (Bryant-Davis & Ocampo, 2005; Carter, 1995).

Racism is often described without a spatial dimension, as in the classic definition of race prejudice plus power (Jones, 1972), although in this study location was significant. Therefore, when assessing experiences of racism at the neighborhood level, a granular view of routine activity locations could be necessary to detect important differences across a neighborhood, which was apparent in this study. Benner et al. (2018) stated that contexts can be experienced differently based on many factors, including one's age and perceptions.

Therefore, attending to the nuances of exposure to racism within neighborhoods and across routine activity locations could support future research to design developmentally appropriate interventions to interrupt anti-Black racism.

### **Support Is Not Static: Place and Black Youth Stress, Safety, and Positive Emotions**

People thrive in contexts where they are safe, welcomed, and known, even when relationships are complex, and there are instances of fracture and blockage (Lopez, 2020). In this study, as the perception of social support in a routine activity location increased, youths' momentary positive emotion also increased, which is consistent with findings on social support and coping (Mitchell, et al., 2020; Scott & House, 2005). Not surprisingly, social support, in contrast to our findings on racism, had an inverse relationship with momentary negative emotion—the more support in a routine activity location, the more positive momentary emotions and less negative momentary emotions were reported. In this study, feeling supported meant Black youths felt comfortable, relaxed, and strong in specific routine activity locations, like community centers, libraries, houses of family members, and parks. The findings suggest that in these routine activity locations, Black youths do not experience the strain of being automatically judged or being under threat of surveillance, like in places where racism was reported. Our finding is consistent with literature that states experiencing affirmation for one's racial/ethnic identity and having a sense of support in a routine activity location is pivotal for adolescent social and emotional development, especially in the context of anti-Black racism (Grills et al., 2016; Harden, 2014; Saleem, Busby, & Lambert, 2018). Of note, social support was reported less in routine activity locations such as buses, schools, stores, and vacant spaces. In spaces where support was noted less, more stress and less safety were reported.

### **Implications and Future Research: Reimagining Solutions to Disrupt Anti-Black Racism**

What could be possible if Black youths had what they deserved and did not have the burden of racism upon their development? Addressing racism as a form of structural change in routine activity locations could be meaningful to Black adolescent development. This study shows that experiences of racial harassment and discrimination, direct or witnessed, are associated with less positive momentary emotions, which is consistent with the literature (Harden, 2014). Even if a Black youths does not identify with having interpersonal experiences of racism, the threat alone has an impact. Eliminating anti-Black racism and increasing resources in safe and supportive spaces are critical for promoting Black youth development. As found in our study, parks were identified as public places where youths experienced increased positive momentary emotion and less negative momentary emotion. Youths may experience more positive emotion when engaging in parks because these may be spaces where they are able to assert more agency and control, since they are not mitigated by adults (Alston et al., 2019). Therefore, as allies of Black youths, we must aim to confront and disrupt negative patterns within institutions like schools and hold them accountable for their impact. Simultaneously, we can shift resources toward spaces that are youth self-directed, like activities in parks (Alston et al., 2019) as well as community centers and libraries, which may increase their sense of support, as found in our study.

Positive youth development approaches could challenge adultist notions more, particularly that adults alone have the most relevant expertise in generating community solutions (Kivel, 2011). In one participatory action research project, young adult researchers asked over 100 youths about their experience with violence and found that loss of community-led activities by neighbors for neighbors, especially during adolescence, decreased unity and increased violence (Alston et al., 2019). The study also found that heavy policing of youth gathering in public spaces diminished opportunities for informal peer support, mentorship, and leadership (Alston et al., 2019), which is consistent with findings on community loss in neighborhoods experiencing gentrification (Abramovitz & Albrecht, 2013). Additional research investigating the relationship between investment in Black youth leadership within routine activity locations and Black youths feeling supported could further understand about positive and negative momentary emotions and structural interventions, as well as future orientation (Shubert, Wray-Lake, & McKay, 2020). Intrapsychic interventions are used often in the field of mental health to improve psychological well-being; however, this study contributes to the literature about structural factors, such as racism in one's social environment, as potential targets of intervention (Comas-Díaz, 2000; Ortega-Williams, 2020).

An intergenerational, multiracial research partnership guided by Black youths conducted this study, which made the research design, analysis, and dissemination of the findings relevant. To continue building on our findings, participatory action research could be led by Black youths more to explore their peer experiences with negative and positive emotions, social supports, racism, stress, and safety within all routine activity locations. Lastly, historic changes continue to occur for young people during the COVID-19 pandemic. Youths were asked to spend more time at home and less time in public group spaces, even after vaccinations were developed because of dangerous variants. Access to private space to decompress, which is developmentally necessary, has been tenuous (Wray-Lake, Wilf, Kwan, & Oosterhoff, 2020). Building intimate relationships, peer as well as romantic, is a developmental milestone for this age group. During the COVID-19 pandemic, many routine activity locations, such as libraries and community centers, have been closed, operated reduced hours, were held remotely, or changed the nature of programming due to social distancing requirements (Literat, 2021). Further research is needed to determine the impact of the COVID-19 pandemic upon momentary negative and momentary positive emotion, safety, support, and experiences of racism in routine activity locations.

## LIMITATIONS

While this study adds significantly to our understanding of youth experiences of racism and social support in different types of activity spaces and their relationship to negative and positive momentary emotion, stress, and safety, the findings must be interpreted in light of several limitations. This study relied on youths to report the type of routine activity locations they were in, rather than the GPS location of the report. Although it is defensible to use youth report, it is possible that they stated that they were at school when they were somewhere else. It was a warranted limitation given the potential invasiveness of smart phone technology to capture data young people did not intend for the study (Roy, 2017). Another limitation was that there were very few reports from some types of activity

spaces. While multilevel modeling is robust with samples of five or more in each group, we should be cautious when making assertions about characteristics of those routine activity locations. The observed differences could be small because there is in fact little difference, the categories of routine activity location types constructed were too broad, or there was not enough power to detect between location-type variance. For instance, a restaurant or a store may represent a wide variety of spaces. Similarly, walking on the street may be a different experience depending on where the adolescent is walking. Including a larger sample size would address this limitation. The low response rate on EMA surveys may have biased the result by decreasing the likelihood that youths would report on certain routine activity locations. While an examination of compliance did not indicate any systematic differences in response rate by gender, age, and weekdays vs weekends, and study protocol ensured that there were equal responses in the summer and fall months, some activity space types may have been omitted. EMA response rates may be improved by including a short training period prior to data collection, shortening the length of EMA data collection, adjusting the incentive structure, and providing regular feedback on use (Crosby et al., 2009; Hufford, 2007). While probability sampling was not used, our sample reflects the demographics of the neighborhood: 96% of the sample identified as African American and 4% identified as mixed race. The results may be generalizable to neighborhoods that are comparable but do not reflect the diversity of experiences of Black youths across the country or in neighborhoods that have a different racial/ethnic composition. The measure used in this study to assess racism had low internal consistency. This item therefore may be measuring different aspects of racism in space or may not be accurately measuring the racism. On further investigation, the items that were reverse coded did not correlate with the one that was not. Future research should continue to develop a momentary measure of racism to capture youths' experiences of racism in a variety of activity spaces. Lastly, EMA responses in this study were measured at the same instance, making it impossible to test causal ordering. It is plausible that youths feel more support in a space because they are experiencing more positive emotion, although it is far less plausible that youths perceive racism because they are experiencing negative emotion. The relationship between reporting social support during the day and safety at the end of day also lends support to the causal ordering hypothesized.

## CONCLUSION

Systemic racism is pervasive and interlocking; therefore, dismantling racism requires a multidimensional approach to understanding how it functions. Micro- and macro-level assessment of racism's impact, alone, might miss daily collective experiences of racism occurring at the meso level. How racism clusters in certain types of routine activity locations has an impact upon Black youths. In order to create a world where Black youths are affirmed and supported and feel valued and safe, we need to understand and address the nuances of where youth experience racism and how this impacts their well-being. It can transform how anti-Black racism is confronted and critical consciousness is raised, which has emerging evidence of supporting positive development among Black youths (Anyiwo, Bañles, Rowley, Watkins, & Richards-Shuster, 2018; Hope, Skoog, & Jagers, 2015; Jemal, 2018).

## ACKNOWLEDGMENTS

We thank the young people who gave their time and wisdom to guide and participate in this study. We thank the reviewers and editors for their invaluable suggestions, which strengthened our manuscript.

This research was funded by the National Institute on Drug Abuse (NIDA) of the National Institute of Health (K01DA041468; PI Jaime M. Booth).

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**TABLE 1**

Descriptive Statistics (*N* = 2039)

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>M (SD)</i>	<i>%</i>
Racism (1)	-	-.62	.33	-.43	.23	-.33	2.36 (0.91)	
Social support (2)	-	-	-.32	.59	-.26	.36	3.77 (1.07)	
Negative emotion (3)	-	-	-	-.31	.48	-.47	1.89 (1.01)	
Positive emotion (4)	-	-	-	-	-.19	.29	3.68 (1.16)	
End-of-day stress (5)	-	-	-	-	-	-.44	2.03 (0.01)	
End-of-day safety (6)	-	-	-	-	-	-	4.49 (0.01)	
Depression							2.03 (0.41)	
Age							15.53 (1.77)	
Gender (female)								44



**TABLE 2**  
 Mean Values and Standard Deviations of Main Variables by Activity Space Location Type

	<b>Racism M (SD)</b>	<b>Social Support M (SD)</b>	<b>Negative Emotions M (SD)</b>	<b>Positive Emotions M (SD)</b>	<b>n</b>
Home	2.29 (0.90)	3.85 (1.00)	1.94 (1.02)	3.71 (1.11)	991
In a car	2.14 (0.93)	4.00 (1.06)	1.64 (0.94)	3.86 (1.19)	148
On the bus	2.60 (0.86)	3.41 (1.06)	1.98 (0.99)	3.57 (1.11)	124
School	2.89 (0.71)	3.17 (1.01)	2.13 (1.03)	2.92 (1.23)	120
Friend's house	2.20 (0.82)	3.95 (.97)	1.80 (0.88)	3.78 (0.95)	88
Family's house	2.22 (1.06)	4.11 (1.06)	1.57 (0.93)	4.06 (1.27)	59
Community center	2.00 (0.89)	4.21 (0.93)	1.69 (1.13)	4.31 (0.84)	53
Walking on the street	2.87 (0.79)	3.18 (1.10)	2.13 (1.06)	3.15 (1.22)	182
Park	2.30 (0.91)	3.97 (1.11)	1.37 (0.74)	4.14 (0.95)	50
Convenience store	2.49 (1.33)	3.47 (1.44)	1.40 (0.68)	3.92 (1.37)	12
Church	2.70 (0.69)	3.44 (0.78)	2.02 (0.88)	4.13 (0.93)	16
Vacant	3.16 (0.71)	2.84 (1.03)	2.45 (0.90)	3.10 (0.70)	10
Restaurant	2.22 (0.84)	3.79 (1.19)	1.78 (1.09)	3.77 (0.96)	10
Store	2.60 (0.47)	3.58 (0.70)	1.67 (0.75)	3.46 (0.23)	13
Hospital	2.21 (0.59)	4.57 (0.46)	1.29 (0.55)	4.56 (0.54)	37
Work	1.93 (1.04)	3.95 (1.36)	1.50 (0.95)	4.01 (1.36)	24
Library	1.68 (0.86)	4.81 (0.55)	1.33 (0.79)	4.67 (0.60)	37
Other	2.37 (0.88)	3.88 (1.04)	1.67 (0.90)	3.75 (1.20)	40
Sd (_cons)	0.49 (0.05)	0.69 (0.06)	0.71 (0.06)	0.79 (0.07)	
Sd (residual)	0.70 (0.02)	0.77 (0.02)	0.69 (0.01)	0.80 (0.01)	

**TABLE 3**

Multilevel Model with Individuals at Level 2 ( $n = 2041$ )

	<b>Racism B (SE)</b>	<b>Social Support B (SE)</b>	<b>Negative Emotions B (SE)</b>	<b>Positive Emotions B (SE)</b>	<b>n</b>
In a car	-.00 (.08)	-.02 (.08)	-.07 (.06)	.04 (.08)	148
On the bus	.16 (.08)*	-.28 (.08)***	-.08 (.07)	-.07 (.08)	124
School	.36 (.09)***	-.45 (.08)***	.06 (.07)	-.24 (.08)**	120
Friend's house	.04 (.10)	-.03 (.10)	-.12 (.08)	.15 (.10)	88
Family's house	-.05 (.11)	.27 (.12)*	-.14 (.10)	.43 (.12)***	59
Community center	-.16 (.12)	.27 (.12)*	-.15 (.10)	.34 (.12)**	56
Walking on the street	.40 (.07)***	-.40 (.07)***	.02 (.06)	-.28 (.07)***	182
Park	.21 (.12) <sup>†</sup>	-.05 (.13)	-.24 (.11)*	.38 (.12)**	50
Convenience store	.30 (.22)	-.47 (.24)*	-.13 (.21)	.32 (.24)	12
Church	.34 (.22)	-.21 (.21)	-.23 (.18)	.16 (.21)	16
Vacant	.62 (.26)**	-.59 (.28)*	-.20 (.23)	-.08 (.27)	10
Restaurant	.01 (.25)	-.11 (.26)	.04 (.22)	.32 (.26)	10
Store	.44 (.23)*	-.48 (.23)*	-.00 (.20)	-.18 (.23)	13
Hospital	-.20 (.34)	.60 (.34) <sup>†</sup>	-.39 (.29)	.48 (.33)	37
Work	-.05 (.18)	-.34 (.18) <sup>†</sup>	.02 (.15)	-.41 (.18)*	24
Library	-.02 (.26)	.35 (.29)	-.21 (.25)	.81 (.29)**	6
Other	.23 (.13) <sup>†</sup>	-.04 (.14)	.04 (.12)	-.14 (.14)	37
Sd (_cons)	.49 (.05)	.69 (.06)	.71 (.06)	.79 (.07)	
Sd (residual)	.70 (.02)	.77 (.02)	.69 (.01)	.80 (.01)	

\*\*\*  
 $p < .001$

\*\*  
 $p < .01$

\*  
 $p < .05$

<sup>†</sup>  
 $p < .10$ .

<sup>a</sup> All models are controlling for age, gender, and depression prior to EMA data collection.

Home<sup>q</sup>; is reference category ( $n = 1050$ ).

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**TABLE 4**  
 Cross-Classified Multilevel Models Testing the Relationship Between Activity Space and Individual-Level Racism on Negative and Positive Emotions (N = 2039)

	<u>Negative Emotions</u>		<u>Positive Emotions</u>	
	<b>B</b> (SE)	<b>B</b> (SE)	<b>B</b> (SE)	<b>B</b> (SE)
RAL racism	.16 (.07) *		-.61 (.16) **	
Racism	.10 (.03) ***		-.31 (.03) ***	
RAL social support		-.16 (.06) **		.66 (.10) **
Social support		-.11 (.02) ***		.45 (.02) ***
Depression	.45 (.20) *	.44 (.20) *	-.09 (.20)	-.06 (.17)
Age	-.05 (.05)	-.06 (.05)	.02 (.05)	.02 (.04)
Gender	.21 (.17)	.21 (.17)	.04 (.17)	.07 (.15)
sd (RAL)	.04 (.03)	.04 (.02)	.24 (.06)	.10 (.05)
sd (_cons)	.75 (.07)	.67 (.06)	.80 (.07)	.59 (.05)
sd (residual)	.69 (.01)	.68 (.01)	.80 (.01)	.73 (.01)

Note. RAL = routine activity location.

\*\*\*  
*p* < .001

\*\*  
*p* < .01

\*  
*p* < .05

Multilevel Models Testing the Relationship Daily Reports of Racism and Social Support and Feeling Stressed and Safe During the Day (*N* = 2039)

**TABLE 5**

	<i>Stress</i>		<i>Safety</i>	
	<b>B (SE)</b>	<b>B (SE)</b>	<b>B (SE)</b>	<b>B (SE)</b>
Individual average racism	.69 (.17)***		-.71 (.12)**	
Daily racism	.04 (.05)		-.10 (.03)**	
Individual social support		-.45 (.13)***		.43 (.10)***
Daily social support		-.09 (.04)*		.15 (.011)***
Depression	.34 (.23)	.33 (.24)	-.40 (.17)*	-.40 (.18)*
Age	.00 (.05)	-.01 (.06)	.10 (.04)*	.11 (.04)*
Gender	-.09 (.19)	-.04 (.19)	-.15 (.14)	-.20 (.15)
sd (_cons)	.74 (.07)	.76 (.07)	.54 (.05)	.58 (.06)
sd (residual)	.93 (.02)	.93 (.02)	.61	.60 (.01)

\*\*\**p* < .001

\*\**p* < .01

\**p* < .05