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Pathways linking attachment and depressive symptoms for Black and White adolescents: Do race and neighborhood racism matter?

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Abstract

Decades of evidence demonstrate that insecure attachment is associated with increased risk for depressive symptoms. Yet research has focused on predominantly White samples, with little attention to whether developmental pathways vary by social-contextual factors like racial identity and neighborhood racism. This study examines whether longitudinal links between attachment style and depressive symptoms differ for White and Black American adolescents or by exposure to neighborhood racism ($N= 171$, $M_{\text{age at Time 1}}= 14\text{y}$). Multigroup measured variable path analyses controlling for gender and household income revealed that attachment avoidance predicted relative increases in depressive symptoms for White adolescents, but not for Black adolescents. Links between attachment style and depressive symptoms did not differ based on exposure to neighborhood racism. Experiences of neighborhood racism were associated with greater attachment avoidance but not anxiety. Results highlight the importance of examining attachment in different socioecological contexts to illuminate the unique pathways characterizing Black youth development.

Keywords

attachment; race; depression; adolescence; African Americans

Adolescence is an important period for identifying sources of risk and resilience for depressive symptoms (e.g., Saluja et al., 2004)—symptoms known to predict a host of adolescent and adult struggles, from substance use to lower educational attainment (Kandel & Davies, 1986; Yaroslavsky et al., 2013). Meta-analytic evidence demonstrates that *insecure attachment*, characterized by lack of confidence in the support of a secure base

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in times of threat (Bowlby, 1969/1982), is a robust risk factor for depressive symptoms in childhood, adolescence, and adulthood (see Dagan et al., 2018; Groh et al., 2012; Madigan et al., 2013; Spruit et al., 2020). Yet historically, research linking attachment to mental health outcomes has focused on predominantly White samples, with little attention to whether developmental pathways vary by important aspects of social context and identity like racial identity and experiences of racism in one's community. Thus, there is an urgent need to test assumptions of generalizability: *Might the pathways linking attachment and depressive symptoms, which are well-characterized for White youth, differ for Black youth?*

Attachment and Mental Health

Attachment theory proposes that human beings possess a biologically-based tendency to become attached to individuals who provide care and protection in times of threat (Bowlby, 1969/1982). In infancy and childhood, individual differences in attachment (security vs. insecurity) are thought to develop as experience-based adaptations (i.e., strategies) to specific environments (Ainsworth, 1985; Main, 1990). These strategic calibrations are thought to develop because they are adaptive within the child-caregiver relationship, increasing the likelihood that the child will receive care when needed. From experiences of a secure base's consistent responsiveness to distress, children develop secure attachments, gaining confidence to explore the world, seek support when needed, and regulate emotion in ways that support mental health. In contrast, from experiences of a caregiver's inconsistent responsiveness or rejection, children develop insecure attachments, undermining their autonomous exploration, support-seeking, and self-regulation and increasing risk for psychopathology (Ainsworth, 1985; Bowlby, 1988; Cassidy, 1994; Groh et al., 2012).

Later in development, attachment relationships to caregivers are thought to generalize into broader representations of the self, others, and the environment, which can be measured via self-report as early as adolescence (Allen & Tan, 2016; Crowell et al., 2016; Jewell et al., 2019; Main et al., 1985). Assessments of self-reported attachment style tap two main dimensions: *Attachment avoidance* is characterized by discomfort with emotional closeness and *deactivating* strategies for regulating emotion in social relationships, such as suppressing emotion and minimizing one's emotional needs. *Attachment anxiety* is characterized by worries about abandonment and *hyperactivating* strategies for regulating emotion in social relationships, such as expressing high negative emotion and dependency (Crowell et al., 2016; Mikulincer & Shaver, 2016).

In a nationally representative sample of adults, Mickelson and colleagues (1997) found that childhood experiences of threat—including abuse, neglect, financial adversity, and being threatened with a weapon—were strongly associated with adult attachment avoidance and anxiety. This aligns with theoretical notions of attachment avoidance and anxiety developing as adaptations to stressful or threatening environments (Mikulincer & Shaver, 2016). In the short term, these strategies for regulating emotion in the context of threat may serve a protective function, such as keeping potentially untrustworthy others at a distance (in the case of attachment avoidance); in the long term, however, both attachment avoidance and anxiety have been shown to increase risk for mental health problems such as depression (e.g., Mickelson et al., 1997; Mikulincer & Shaver, 2016). Yet crucially,

the pathways linking attachment style and depressive symptoms have been characterized largely in majority-White samples, with little attention to potential variability by race-related experiences.

Race, Parenting, and Mental Health

In the United States (U.S.), Black youth face a unique set of intersecting stressors, including racial discrimination by teachers, race-based bullying by peers, threats and violence at the hands of police, and witnessing others facing racism in one's community (see, e.g., Jernigan & Daniel, 2011; Williams, 2018). Recent data suggest that Black adolescents experience an average of more than five racial discrimination experiences per day, and that these daily experiences of racial discrimination predict short-term increases in depressive symptoms (English et al., 2020). In a review of the literature on youth of color, perceived racism is consistently associated with heightened risk for depressive symptoms (see Priest et al., 2013). These links are not merely correlational: Quasi-experimental evidence demonstrates that the killing of each unarmed Black person in the U.S. increased the number of days of poor mental health among Black individuals (Bor et al., 2018; see also McLeod et al., 2020). Thus, the stress and trauma associated with experiences of racism may place Black adolescents at increased risk for depressive symptoms, and accumulating evidence suggests this is the case (Williams, 2018).

Importantly, the social context in which Black adolescents come of age is uniquely threatening, and as such the links between attachment and adolescent functioning may differ from the links for adolescents growing up in less threatening environments (e.g., Baldwin et al., 1990, 1993). For example, authoritarian parenting styles (more common among Black parents, perhaps in service of protecting their children from threat; Baldwin et al., 1990; Dornbusch et al., 1987) are sometimes associated with more positive outcomes for Black youth, but more negative outcomes for White youth (Baumrind, 1972; Cox, 2006; Steinberg et al., 1994; but see Pezzella et al., 2016 for an exception). In adolescence, work by Baldwin and colleagues (1990, 1993) suggests that authoritarian parenting may be more common among families experiencing economic disadvantage generally, and that disadvantaged Black adolescents report lower depressive symptoms than similarly disadvantaged White adolescents despite similar levels of authoritarian parenting. Some data suggest that authoritarian parenting is associated with greater attachment avoidance (e.g., Ebrahimi et al., 2017).

Other data suggest that Black parents are more likely than White parents to respond to their children's negative emotions by dismissing or minimizing their emotions (Nelson et al., 2012), and that the effects of such responses may be less detrimental for Black children than is the case for White children (see Dunbar et al., 2017). One study found that Black mothers who react to children's emotions with moderate minimizing responses—in combination with positive racial socialization messages—fostered more positive emotional outcomes in Black children (Dunbar et al., in press). Similarly, parents' encouragement to express negative emotions has been linked to positive outcomes among White children but to lower social-emotional competence among Black children (Nelson et al., 2013). Parents'

minimization or rejection of children's negative emotions is thought to be an important predictor of attachment avoidance (Cassidy, 1994).

Together, extant findings suggest that experiences with caregivers may have different consequences for the emotional well-being of Black youth, but little work has examined this with respect to attachment. Building on Dunbar et al. (in press), we suggest that in order to serve as a secure base in the context of racism, Black parents may use a unique combination of parenting behaviors (including greater control and moderate minimization of teen's emotions) to protect teens from racism-related threats. Both in response to such parenting behaviors and to defend against the broader context of racism in which they grow up, Black teens may adopt more avoidant attachment strategies. Thus, Black parents' and teens' relational behavior is *adaptive* when understood in the context of protecting against racism-related threats. For this reason, it is likely that teen attachment avoidance specifically may not be a risk factor for psychopathology among Black teens in the same way it is for White teens.

Only one study to our knowledge has examined potential racial variation in links of attachment style to adolescent outcomes: Cooper and colleagues (1998) reported race-invariant associations of attachment insecurity with a wide range of adolescent outcomes, such as alcohol and drug problems; with respect to sexual outcomes, however, attachment avoidance predicted more risky sexual behavior among White adolescents, whereas attachment anxiety predicted more risky sexual behavior among Black adolescents. Beyond adolescence, Wei et al. (2004) examined associations of young adults' attachment style with self-reported negative mood (a combination of anxiety and depression); whereas links between attachment anxiety and negative mood did not vary between Black and White participants, links between attachment avoidance and negative mood were only significant for White and Hispanic participants. Importantly, neither study examined the potential role of racism.

The Present Study

The goal of the present study is to take a closer look at racial identity and neighborhood racism as potential sources of variability in attachment-related pathways to mental health outcomes. Specifically, we test whether the established link between insecure attachment style and the development of depressive symptoms differs by racial identity, focusing on individuals who identify as Black compared to those who identify as White. We examine this question over the course of adolescence because it is considered a "second sensitive period" of social-emotional development (Blakemore & Mills, 2014) and because risk for depressive symptoms increases during this period (e.g., Saluja et al., 2004).

We examine the evidence for two competing hypotheses: One possibility, which we refer to as the *racial invariance hypothesis*, is that attachment avoidance and anxiety will predict increases in depressive symptoms similarly for Black and White adolescents. An alternate possibility, which we refer to as the *racial variation hypothesis*, is that attachment avoidance and/or anxiety will predict depressive symptoms differently for Black and White adolescents. Under this latter hypothesis, we would expect that attachment insecurity would

still predict increases in depressive symptoms in the sample as a whole and among White participants, replicating previous research in majority-White samples (e.g., Mickleson et al., 1996), but that Black participants may show a different pattern. Given the dearth of research on attachment and mental health among Black adolescents, however, we advanced no specific predictions about this group.

In addition, we examine whether the link between attachment style and depressive symptoms differs by exposure to neighborhood racism for both Black and White youth. We focus on teens' perceptions of neighborhood racism both to capture the broader communal context of discrimination that teens may witness (beyond their individual experience) and to allow for responses from both racial groups. To further explore the role of neighborhood racism as a potential explanatory factor underlying racial differences in the pathways from attachment style to depressive symptoms, we conduct exploratory follow-up analyses on the links between racism, attachment style, and depressive symptoms among Black youth specifically.

We leveraged data from an existing sample of adolescents recruited from Prince George's County, Maryland, one of the wealthiest predominantly Black counties in the U.S. at the time of recruitment (median household income for Black residents >\$70k; U.S. Census Bureau, 2006). This dataset offered two opportunities to limit potential confounds of economic status, as (a) it included data on annual household income that we include as a covariate to disentangle the effects of race from economic advantage, and (b) it was based on a sample that is more comparable to White income than is the case in most other datasets.

Method

Participants

A sample of 277 adolescents and their parents was recruited for a longitudinal study of adolescent development from the Washington, D.C., metropolitan area. Families were eligible to participate in the initial laboratory assessment if they were proficient in English and adolescents were in 5th or 6th grade. Because of our interest in comparing specific racial groups, the sample for the present analyses only included adolescents who identified as either White ($n = 136$) or Black (including teens who identified as biracial, $n = 98$). After the initial laboratory visit, families were assessed at annual intervals. The present analyses focus on study years 4, 5, and 8; for simplicity, in this article we refer to these time points as T1, T2, and T3, respectively. Adolescents were $M_{\text{age}} = 13.97$ years old ($SD = .88$) at T1, $M_{\text{age}} = 14.98$ ($SD = .92$) at T2, and $M_{\text{age}} = 18.05$ ($SD = .97$) at T3, a period spanning mid- to late adolescence. Median household income at T1 was \$85,000 (see Table 1). The majority of parents were married and had at least a college degree (details of the sample are reported in Jones et al., 2015; Oddo et al., 2019).

Procedure

During the initial laboratory visit, parents provided written consent for their children, and adolescents provided written assent. Following this initial visit, adolescents returned for yearly 2-hour laboratory assessments during which they completed questionnaires and tasks.

Families received monetary compensation for each visit (see Jones et al., 2015, for further details). All study procedures were approved by the University's institutional review board.

Measures

The *Center for Epidemiological Studies-Depression* scale (CES-D; Radloff, 1977) was used to measure depressive symptoms. Participants used a 4-point Likert-type scale ranging from 0 (*rarely or none of the time [less than one day]*) to 3 (*most or almost all of the time [5–7 days]*) to rate 20 items regarding how often they have experienced various depressive symptoms over the past week (e.g., “I felt that everything I did was an effort”). The items of the CES-D scale capture six symptoms of depression: feelings of helplessness and hopelessness, feelings of guilt and worthlessness, loss of appetite, sleep disturbance, depressed mood, and psychomotor retardation. The CES-D has been used successfully in many contexts with adolescents (Garrison et al., 1991), and has demonstrated factorial invariance across racial groups in a nationally representative sample of Black and White adults (Nguyen et al., 2004), as well as factorial invariance between Black and White teens (Skriner & Chu, 2014). In the present study, the scale shows high internal consistency, with Cronbach's $\alpha = .88$ at T1 and $\alpha = .89$ at T3.

The *Experiences in Close Relationships Scale-Short Form* (ECR-SF; Wei et al., 2007) was used to measure adolescent attachment style at T2. The ECR-SF is a 12-item self-report questionnaire that measures variability within two dimensions of attachment style: anxiety and avoidance. Individuals with high attachment anxiety (6 items) fear rejection and abandonment in close relationships (e.g., “I worry that close relationship partners won't care about me as much as I care about them”). Individuals with high attachment avoidance (6 items) experience discomfort with closeness and being vulnerable with others (e.g., “I am nervous when another person gets too close to me”). Adolescents used a 7-point Likert-type scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*) to rate the degree to which they agreed with each of the statements in the ECR-SF. After some items were reverse-scored, higher scores represent greater attachment anxiety and avoidance. The factor structure of the original ECR is invariant across diverse racial and cultural groups (Wei et al., 2004), and the factor loadings of the ECR-SF does not vary between Black and White individuals specifically (Wei et al., 2007). The ECR-SF has also shown reliability and validity with adolescent participants (Jones et al., 2018); in the present study both dimensions demonstrated adequate internal consistency (Cronbach's $\alpha = .63$ for avoidance and $\alpha = .64$ for anxiety).

Neighborhood racism was assessed using a single item from the Neighborhood Environment Scale (NES; Elliot et al., 1985): “In my neighborhood, I see signs of prejudice and racism at least once a week.” Youth rated this item as true (1) or false (0) at all time points. The NES has been widely used in studies of neighborhood risk and racism experienced by Black youth (e.g., Herman et al., 2020). At each time point, few adolescents in this sample reported such frequent exposure to neighborhood racism. Therefore, we created a dichotomous variable (1 = yes, 0 = no) reflecting any exposure to neighborhood racism between T1 and T3. Overall, 17% ($n = 40$) of teens in the sample reported exposure to frequent neighborhood racism from T1-T3.

Results

Preliminary Analyses

Descriptive statistics for each group are shown in Table 1 and bivariate correlations for the full sample are shown in Table 2. Of the 234 Black and White teens recruited at Year 1, $N = 171$ had sufficient data to be included in the present analyses. Follow-up rates exceeded 80% between consecutive assessment years. Participants lost to attrition included those who could not be located or did not respond to phone or letter inquiries. The adolescents with follow-up data did not differ from those without follow-up data on T1 age, income, race, gender, depressive symptoms, or attachment style, all p s $> .05$. Little's MCAR test indicated that data were missing completely at random, $p = .83$.

Depressive symptoms were moderately stable over the four-year period, $r = .45$, $p < .001$. Attachment anxiety, but not avoidance, was significantly related to depressive symptoms at both time points (see Table 2). The two dimensions of attachment style were not significantly intercorrelated, $p > .05$. Exposure to neighborhood racism was significantly correlated with attachment avoidance. Household income was highly positively skewed (skewness = 4.85); we therefore computed a median split prior to conducting analyses with this variable.

As shown in Table 1, there were no significant differences in attachment style, depressive symptoms, or gender representation between Black and White participant groups, all p s $> .10$. The proportion of Black adolescents with annual household incomes above the median (25%) was significantly lower than that of their White peers (69%). Black teens were more than twice as likely to report experiencing neighborhood racism across T1-T3 (29%) compared to White teens (13%), and this difference was significant, $p = .005$.

Principal Analyses

Multigroup measured variable path analyses were conducted in Mplus version 7 (Muthén & Muthén, 2012), using full information maximum likelihood (FIML) estimation to handle missing data. Multigroup structural equation modeling provides a powerful tool to examine similarities and differences between different populations (e.g., Vandenberg & Lance, 2000). First, we tested the path models using the whole sample to illustrate what the results would be without taking adolescent racial identity into consideration. Second, we tested unconstrained multigroup path models, in which all model parameters were free to vary across racial groups, to evaluate whether the paths from attachment style to T3 depressive symptoms differed between Black and White youth. If differences were observed, we then formally examined cross-group invariance by comparing the unconstrained model to a set of partially constrained models in which one or both paths from attachment style to T3 depressive symptoms were set to be invariant across racial groups. Nested chi-square difference tests were used to compare the unconstrained vs. partially constrained models. In each model predicting depressive symptoms at T3, we included T1 depressive symptoms, household income, and teen gender as covariates and attachment anxiety and avoidance as the predictors of interest.

Racial identity Model Results—Results are presented in Table 3. In the sample as a whole, neither attachment avoidance nor anxiety significantly predicted relative increases in teen depressive symptoms from T1 to T3. However, results of the unconstrained multigroup model revealed that attachment avoidance and anxiety predicted increased depressive symptoms for White teens, but not for Black teens. Moreover, constraining the path from attachment avoidance (but not anxiety) to T3 depressive symptoms to be equal across racial groups significantly reduced model fit, suggesting that the link between avoidance and depressive symptoms differs for Black and White adolescents.

Neighborhood Racism Model Results—Results are presented in Table 4. In the multigroup path model, the association between income and depression was significant only among teens who experienced neighborhood racism. With regard to attachment, however, the links between attachment style and T3 depressive symptoms did not differ by exposure to neighborhood racism. Thus, no nested model comparisons were conducted. However, given the low endorsement of exposure to frequent neighborhood racism, we may lack sufficient power to detect differences in a multigroup path model. We therefore decided to conduct exploratory follow-up analyses to further examine the potential role of exposure to neighborhood racism, first across both White and Black adolescents and then specifically among Black youth. Overall, attachment avoidance was significantly higher among teens who had experienced neighborhood racism ($M = 3.41$, $SD = 1.07$) compared to those who had not ($M = 2.96$, $SD = 1.07$; $t = -2.36$, $p = .019$, $d = .42$); no differences emerged for attachment anxiety, $p = .99$. Although T3 depressive symptoms were slightly higher among those who reported neighborhood racism ($M = 14.17$, $SD = 8.66$) compared to those who did not ($M = 12.55$, $SD = 8.70$), this difference was not statistically significant ($t = -1.04$, $p = .29$, $d = .19$). Among Black youth specifically, those exposed to neighborhood racism reported marginally higher levels of attachment avoidance ($M = 3.45$, $SD = .88$) than those who did not ($M = 3.07$, $SD = .82$; $t = -1.76$, $p = .083$, $d = .46$). Similarly, those exposed to neighborhood racism reported marginally higher levels of T3 depressive symptoms ($M = 17.12$, $SD = 9.66$) than those who did not ($M = 12.69$, $SD = 9.36$; $t = -1.81$, $p = .073$, $d = .47$). No differences emerged with respect to attachment anxiety, $p = .77$.

Discussion

The present study examined race-related variation in longitudinal pathways linking attachment to mental health outcomes in adolescence. This study is among the first to our knowledge to compare how Black and White adolescents' attachment style predicts the development of depressive symptoms across a four-year period, while exploring the potential role of neighborhood racism. Multigroup path analyses revealed that both attachment avoidance and anxiety predict depressive symptoms among White, but not Black adolescents. Further, nested model comparisons confirmed that the path linking attachment avoidance and depressive symptoms significantly differs for White and Black youth. We did not find evidence that the links between attachment style and depressive symptoms differ by exposure to neighborhood racism; however, in the overall sample neighborhood racism was associated with elevated attachment avoidance. Among Black youth specifically, those

exposed to neighborhood racism reported marginally higher levels of attachment avoidance and depressive symptoms than non-exposed Black youth.

Among White teens, both attachment avoidance and anxiety predicted relative increases in depressive symptoms from early to late adolescence. Further, in the overall sample, attachment anxiety was significantly correlated with higher depressive symptoms at each time point. This is consistent with substantial previous research linking insecure attachment styles and depressive symptoms in majority-White teens, in part because insecure teens are more likely to have difficulties effectively seeking support and regulating emotion, which in turn increase risk for depression (Brenning et al., 2012; Spruit et al., 2020). For example, previous research has demonstrated a tendency for attachment-avoidant teens to engage in less help-seeking over time, contributing to self-perpetuating cycles of managing emotions alone (see Loeb et al., 2020).

Importantly, attachment avoidance and anxiety were not related to increased depressive symptoms for Black teens as they were for White teens, and the path linking *avoidance* to depressive symptoms varied significantly by race. This is consistent with one study of urban adolescents (70% Black) that found no association between adolescents' self-reported attachment and depressive symptoms over time (Gaylord-Harden et al., 2009), though the study did not specifically examine variation by race. Further, in a study of pregnant adolescent and young adult couples, researchers similarly found that associations between attachment avoidance (but not anxiety) and depressive symptoms varied by racial-ethnic identity; in this study, however, both Black and White participants—but not Latinx participants—showed positive concurrent associations between avoidance and depressive symptoms (Desrosiers et al., 2014). Our findings may differ in part due to our younger, non-parental sample and our examination of relative increases in depressive symptoms over time. That effects of attachment anxiety did not show significant variation by racial identity may indicate (a) that anxiety functions as a risk factor for teen psychopathology regardless of race, perhaps by increasing feelings of personal distress across diverse contexts; (b) that the function of avoidance may be more context-dependent than anxiety, perhaps providing short-term protective adaptation to cope with racism-related stress; or (c) that we had insufficient power to detect more subtle group differences for attachment anxiety. Findings suggest a potential pattern in which attachment avoidance specifically may play a different role in predicting adolescent mental health depending on teens' racial-ethnic context.

These findings that avoidance is a risk factor for White adolescents but not for Black adolescents are relevant to considerations of the positive outcomes of security. Within such a framework, these findings may have implications for the universality of what has been called the “competence hypothesis” in attachment theory, that secure attachment leads to positive child outcomes (e.g., mental health) across cultural contexts (Mesman et al., 2016). The present findings that for Black adolescents lower levels of insecurity as measured on the ECR is not associated with fewer depressive symptoms (as it is for White adolescents) underscore the possibility that attachment security alone may be insufficient to promote mental health in the context of a racist society that imposes systemic threats to Black children and families; instead, it is possible that attachment style may function in combination with other social experiences such as parents' positive racial socialization,

school belonging, peer relationships, and community support. In other words, a teen may only reap the benefits of security if other supports are also in place that specifically protect against racism-related threats.

In the present study, Black teens reported slightly higher mean levels of attachment avoidance than their White peers, but this difference was not significant. In addition, Black teens reported significantly more neighborhood racism than their White peers, though reports of racism in the present study were lower compared to prior work (English et al., 2020). Multigroup models suggest that the association between lower income and elevated depressive was significant only among those who experienced neighborhood racism; it is notable that this blend of contextual factors—low income and exposure to neighborhood racism—is particularly likely to occur among Black youth and may reflect dual risk for mental health struggles. Our exploratory results suggest that Black teens' experiences of neighborhood racism were associated with marginally elevated attachment avoidance and depressive symptoms. Findings align with previous work linking discrimination both within and outside of Black youth's neighborhoods to greater internalizing problems at age 15 (Riina et al., 2012). One interpretation of these findings is that in response to experiences of racism in one's community, a certain degree of avoidance may be protective for Black teens, perhaps because trusting others, showing vulnerability, and expressing emotion openly can have significant costs in a racist society. This consideration of the context of racism may help to explain why avoidance does not predict relative increases in depressive symptoms from mid-to late-adolescence among Black teens as it does for White teens. Just as avoidance may serve as an adaptive strategy for infants facing maternal rejection (Main, 1990), so may avoidance serve as an adaptive strategy for Black adolescents in guarding against the multiple social, emotional, and physical threats of racism; in this context, we might consider whether a certain degree of avoidance in social interactions represents a "hidden talent" within a harsh environment (Ellis et al., 2020). From an evolutionary perspective, avoidance may function to ensure individual and group survival in specific ecological contexts (see Ein-Dor & Hirschberger., 2016).

On the other hand, avoidance may instead represent a form of "skin-deep resilience" (Brody et al., 2013), in which avoidance protects against depressive risk only in the short term, with downstream consequences for health and wellbeing in adulthood; for example, attachment avoidance in adolescence has been linked to increased inflammation in African American adults (Ehrlich et al., 2019). Finally, it is possible that the construct of avoidant attachment style itself has different meaning for Black teens; for example, perhaps Black teens adopt an avoidant strategy in their general social relationships to protect against racism-related threats, but some may also have a reliable secure base in specific relationships that may be better captured by other measures of attachment (e.g., WHOTO; Fraley & Davis, 1997; see also Rosenthal & Kobak, 2010), which may be more relevant for predicting depressive risk.

Limitations and Future Directions

A central limitation of the present work is the exclusive use of self-report, which introduces the potential for reporter bias. Previous research has shown that individuals' attachment avoidance and depressive symptoms are each associated with underreporting biases relative

to reports of others (e.g., Ehrlich et al., 2014; see also Borelli et al., 2014). It is possible that attachment-related underreporting of neighborhood racism also occurs, given the low endorsement of neighborhood racism in this sample. In addition, the single item used here (assessing experiences that occurred “at least once a week”) may have been too coarse to capture meaningful variation in teens’ experiences of racial discrimination, resulting in low power for the racism analyses. Although teen-report is important for capturing teens’ own perspectives, future work should integrate multiple reporters to best assess teen depression and exposure to racism.

Further, important questions remain regarding causality and the direction of influence. It is possible that adolescent depression also contributed to greater attachment avoidance (although T1 levels of depressive symptoms were not significantly correlated with T2 attachment style). Evidence for a causal impact of attachment comes from security priming studies with adults, demonstrating that temporarily enhancing feelings of security can reduce depressive symptoms (Carnelley et al., 2016, 2018; Liao et al., 2017; McGuire et al., 2018). Future experimental work could examine the effects of security priming and attachment-focused interventions on mental health outcomes in Black and White teens to shed light on the important question of “what works for whom?” In addition, future work should examine the extent to which attachment and depressive symptoms may also shape perceptions of racism, as well as cognitions, emotions, and behavior in response to racism (e.g., anger, powerlessness, activism and protest). Further, future research could start earlier in ontogeny to examine the role of developmental timing by comparing the effects of racial identity, neighborhood racism, and attachment at different ages. One possibility is that pathways linking attachment and mental health may not vary by race among young children, for whom the ability to rely on a secure base is particularly essential (Bowlby, 1969/1982), and that racial variation emerges only in adolescence and adulthood. A second possibility is that the quality of peer relationships becomes more important than attachment style for shaping Black adolescents’ mental health, given the centrality of peers for providing social support during this period (Rosenthal & Kobak, 2010), as well as the documented role of bias-based bullying by peers in predicting depressive symptoms for marginalized adolescents (Russell et al., 2012).

In addition, although we found some indication to support our thinking regarding racism, we were underpowered to test the 3-way interaction among teen race, attachment, and exposure to racism. Future research in larger samples should test this interaction and could also be informative in order to examine the generalizability of results to other racial/ethnic contexts (e.g., Latinx adolescents, multiracial teens) and to examine intersections with gender, LGBTQ status, and other factors known to impact adolescent mental health. Beyond racial identity and exposure to neighborhood racism, future work should incorporate other contextual variables known predict mental health among Black youth (see Tyrell & Masten, in press), such as cultural variables, parenting styles, quality of peer relationships, exposure to police violence, and racial socialization—including preparation for bias and racial pride messages. For example, insecurely attached teens who receive positive racial socialization messages may be protected from developing negative internal working models of the self, which in turn mitigates risk for mental health struggles. Further, examination of race in interaction with SES will yield important insights. The present sample contained relatively

affluent Black adolescents (73% with household incomes above the national median for Black families), many of whom lived in a higher-income, predominantly Black region; findings may differ for poorer adolescents who are exposed to greater racism in their communities with little economic buffering. In sum, the field is ripe for further examination of the complex interactions of attachment with contextual variables to take into account the unique challenges, strengths, and adaptations of youth of color growing up in a racist society.

Conclusions

The present findings suggest that well-characterized pathways linking attachment style to mental health outcomes may vary by racial context. Specifically, we find evidence that attachment avoidance predicts increases in depressive symptoms from early to late adolescence among White teens, but not among Black teens, and that neighborhood racism shows meaningful associations with attachment style and mental health. Results highlight the importance of examining racial similarities and differences in the role of attachment in shaping developmental pathways related to mental health. Importantly, not all attachment-related outcomes will vary as a function of racialized experiences, nor will they vary in the same way; thus, future research is needed to explore whether and how attachment may interact with racial identity to predict a variety of key outcomes, such as biological responses to stress, inflammation, coping, resilience, socioemotional functioning, relationship competence, and identity development. As attachment researchers and practitioners consider ways to support positive youth development and mental health, it is critical to attend to the context-specific ways in which attachment may function for youth of color.

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Table 1

Descriptive Statistics for Main Study Variables, Compared By Racial Group

Variable	Full sample	Black teens	White teens	Test statistic for difference	<i>p</i>
	<i>Percent</i>			χ^2	
Gender (% female)	44%	47%	42%	0.58	.445
Income (% above median)	51%	25%	69%	43.05	<.001
Neighborhood racism (% any instance T1-T3)	17%	29%	13%	7.85	.005
	<i>M(SD)</i>			<i>t</i>	
Attachment avoidance	3.04 (1.08)	3.17 (0.84)	2.96 (1.21)	-1.37	.173
Attachment anxiety	2.74 (1.03)	2.79 (1.08)	2.71 (1.01)	-.52	.603
T1 Depressive symptoms	13.36 (9.06)	13.79 (9.46)	13.06 (8.80)	-.55	.581
T3 Depressive symptoms	12.57 (8.61)	14.00 (9.77)	11.52 (7.55)	-1.63	.105

Note. Bold font indicates significant differences between Black and White teens at $p < .05$.

Table 2

Bivariate Correlations among Study Variables in the Full Sample

Variable	1	2	3	4	5	6	7	8
1. Racial identity (% Black)	-							
2. Gender (% female)	-.05	-						
3. Income (% above median)	-.44	.16	-					
4. Neighborhood racism (% any instance T1-T3)	.20	.02	-.11	-				
5. Attachment avoidance	.10	.10	-.00	.16	-			
6. Attachment anxiety	.04	-.23	.03	-.02	.06	-		
7. T1 Depressive symptoms	.04	-.26	-.11	.19	.03	.44	-	
8. T3 Depressive symptoms	.14	-.11	-.05	.09	.08	.30	.45	-

Note. Bold font indicates a statistically significant correlation at $p < .05$. Dichotomous variables were gender (0 = girl, 1 = boy), race (0 = White, 1 = Black), household income (split at the median: 0 = < \$85,000, 1 = \geq \$85,000), and teen-reported neighborhood racism (0 = no perceived neighborhood racism, 1 = any instance of perceived neighborhood racism between T1-T3).

Table 3

Multigroup Measured Variable Path Model by Racial Identity

	Full sample		Black teens		White teens	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
Unconstrained Model						
T1 Dep Symptoms → T3 Dep Symptoms	.43	<.001	.52	<.001	.38	.001
Income → T3 Dep Symptoms	-.08	.319	-.07	.565	.03	.810
Gender → T3 Dep Symptoms	-.02	.860	.04	.763	-.11	.323
Attachment Avoidance → T3 Dep Symptoms	.11	.203	-.14	.251	.30	.003
Attachment Anxiety → T3 Dep Symptoms	.15	.148	-.01	.975	.25	.023
Chi-square Model Comparisons						
	χ^2	<i>df</i>	χ^2	<i>df</i>		
Unconstrained Model vs.	50.69	12				
Attachment Avoidance & Anxiety Constrained	56.43	14	5.74	2		
Attachment Avoidance Constrained	55.38	13	4.69	1		
Attachment Anxiety Constrained	51.81	13	1.12	1		

Note. Dep = Depressive. Bold font indicates statistically significant standardized path coefficients (top portion) and model chi-square statistics (bottom portion) at $p < .05$. Chi-square model comparisons compare each partially constrained model to an unconstrained model in which all parameters were free to vary across groups.

Table 4

Multigroup Measured Variable Path Model by Exposure to Neighborhood Racism

	Full sample		Exposure to Neighborhood Racism		No Exposure to Neighborhood Racism	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
Unconstrained Model						
T1 Dep Symptoms → T3 Dep Symptoms	.43	<.001	.64	<.001	.40	.001
Income → T3 Dep Symptoms	-.08	.319	-.30	.026	-.03	.786
Gender → T3 Dep Symptoms	-.02	.860	-.13	.356	.02	.819
Attachment Avoidance → T3 Dep Symptoms	.11	.203	.09	.552	.12	.275
Attachment Anxiety → T3 Dep Symptoms	.15	.148	.24	.137	.10	.421

Note. Dep = Depressive. Bold font indicates statistically significant standardized path coefficients.

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