Trajectories of Discrimination Across Adolescence: Associations With Academic, Psychological, and Behavioral Outcomes

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The authors explored trajectories of perceived discrimination over a 6-year period (five assessments in 6th–11th grade) in relation to academic, behavioral, and psychological adjustment in 8th and 11th grades. They distinguished discrimination from adults versus peers in addition to overt versus covert discrimination from peers. The sample included 226 African American, White, Dominican, Puerto Rican, and Chinese adolescents (ages 11–12 at Time 1) recruited in sixth grade from six public schools in New York City. All forms of discrimination increased during middle school and decreased during high school. The frequency with which adolescents reported different sources and types of discrimination varied across ethnicity/race, but not gender. Initial levels and rates of change in discrimination predicted academic, behavioral, and psychological adjustment in 8th and 11th grades, albeit in complex ways.

Despite progress in race relations since the Civil Rights era, many ethnic/racial minority adolescents in the United States experience ethnic/racial discrimination, that is, unfair treatment on the basis of their ethnicity/race (e.g., Greene, Way, & Pahl, 2006; Seaton, Caldwell, Sellers, & Jackson, 2008). Although high-profile events—such as shootings of unarmed African American boys—have elevated public discussion of stereotypes and biases that youth of color face, social scientists are just beginning to document the prevalence and salience of their discrimination experiences. Seaton and colleagues found that over 85% of African American and Dominican adolescents reported at least one discriminatory experience in the past year (Seaton et al., 2008). In Martin et al.'s (2011) study of 10- to 12-year-old African American youth, 40% reported having been the target of a racial slur, 33% and 17% reported having been disrespected or threatened, respectively, and 6% reported having been harassed by the police. These percentages rose substantially by the third assessment 5 years later.

In addition to being both prevalent and salient, adolescents' ethnic/racial discrimination experiences are associated with myriad negative outcomes including lower self-esteem (Fisher, Wallace, & Fenton, 2000; Greene et al., 2006), greater psychological distress (Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003), lower life satisfaction (Seaton et al., 2008), higher depression (Juang & Cookston, 2009), more conduct problems (Brody et al., 2006), and poorer academic motivation and performance (e.g., Eccles, Wong, & Peck, 2006; Huynh & Fuligni, 2010). Indeed, in several hueristic models, discrimination experiences are featured as central determinants of developmental processes, especially among minority youth (Garcia Coll et al., 1996; Spencer, Dupree, & Hartmann, 1997).

Although the literature on adolescents' discrimination experiences has grown over the past decade, it is still underdeveloped in several ways that we attempt to address in this study. First, only a few studies have examined how discrimination experiences change during adolescence (e.g., Bellmore, Nishina, You, & Ma, 2012; Benner & Graham, 2011; Greene et al., 2006; Niwa, Way, & Hughes, 2014; Brody et al., 2006; White, Zeiders, Knight, Roosa, & Tein, 2014), and thus, the literature is short on adequate descriptive information regarding trajectories of discrimination. The few longitudinal studies that exist studies focus on the junior high school or high school years, but not both. Second, most studies of adolescents assess discrimination as a unidimensional construct, masking nuanced but potentially important distinctions in the nature of their discrimination experiences. Although studies increasingly

distinguish different sources of discrimination (e.g., adults, peers, society; Benner & Graham, 2013; Fisher et al., 2000; Greene et al., 2006; Seaton & Yip, 2009), studies have not examined whether differences in the nature of discrimination—whether it is characterized by overt harassment versus more covert stereotyping—may matter as well. Third, although ethnic and gender differences in discrimination have been documented (Benner & Graham, 2012; Huynh & Fuligni, 2010), only a few longitudinal studies have included both multidimensional assessments and multiple ethnic/racial groups, limiting researchers' knowledge about how patterns of change in discrimination may vary for boys versus girls and among youth of different ethnic/racial backgrounds. Finally, most studies, including most longitudinal studies, have examined perceived discrimination in relationship to outcomes in a single domain, such as academic, behavioral, or psychological domains (but see Benner & Graham, 2012; Huynh & Fuligni, 2010). In order to more fully understand the potential consequences of discrimination, it seems important to examine its relation to multiple outcomes within a single sample.

Change in Perceived Discrimination Across Middle School and High School

Scholars have suggested that adolescents' discrimination experiences are likely to shift as they get older due to shifts in self, social, and setting level dynamics that characterize the adolescent period. For example, it is during adolescence that youth develop the capacity for abstract thought; thus, they become newly capable of recognizing overt and covert discriminatory actions, of understanding that these actions may reflect others' stereotypes about groups, and of garnering information from social contexts to interpret and identify discrimination (Brown, & Bigler, 2005). In addition, it is during adolescence that youth begin to explore the meaning of their social category memberships, and are especially sensitive to the basis for how others treat them (Bellmore et al., 2012). At the level of settings, the physical maturation that occurs during adolescence, especially during junior high school, may mean that others are especially likely to react to youth of color in accordance with negative stereotypes about them as being threatening and menacing (Cunningham, Swanson, & Hayes, 2013). At the same time, adolescents' increasing levels of independence and, thus, contact with mainstream culture may increase their exposure to these societal stereotypes (Greene et al., 2006).

To date, only a few studies have examined changes in perceived discrimination during adolescence. Most longitudinal studies of discrimination estimate autoregressive models (e.g., Benner & Kim, 2009), which increase researchers' ability to establish temporal precedence, but are less well suited to examining change over time. Among studies that have examined trajectories of change, which requires three or more assessments, most cover a limited swath of adolescence—either high school/late adolescence (Benner & Graham, 2011; Greene et al., 2006) or junior high school/middle adolescence (Martin et al., 2011; Brody et al., 2006), but not both. Findings from these studies have been inconsistent, with increases, stability, and decreases reported (Bellmore et al., 2012; Benner & Graham, 2011; Greene et al., 2006; Martin et al., 2011; Niwa et al., 2014; Simons, 2006; White et al., 2009). For instance, Bellmore et al. (2012) reported an average decline in peer discrimination among a multiethnic sample over 4 years of high school, whereas Greene et al. (2006) found no average change in peer discrimination during high school among a multiethnic sample. Among studies of discrimination from adults, Niwa et al. (2014) found stability in youths' reports of discrimination from adults in middle school, and Greene et al. (2006) reported an increase (at trend level) in perceived discrimination from adults in high school.

We examine trajectories of adolescents' perceived discrimination experiences over the period of early to late adolescence. Using five waves of data (6th, 7th, 8th, 9th, and 11th grades), we examine whether there are distinct patterns of growth during two developmental periods—defined by entry into middle school and high school, respectively. Estimating separate growth patterns for these two periods permits us to explore whether distinguishing these periods within a single sample may help explain different patterns that have been reported in prior studies.

Distinguishing Multiple Dimensions of Adolescents' Discrimination Experiences

Distinctions between types of discrimination have been important in understanding adults' discrimination experiences across contexts and in evaluating its mental and physical health consequences (Williams, Neighbors, & Jackson, 2003). Studies that have used multidimensional measures with adolescents suggest that there are meaningful distinctions between discrimination of different types and from different sources for young people as

well. Seaton and Yip (2009)—differentiating individual, cultural, and institutional discrimination—found that only institutional discrimination predicted lower self-esteem and higher depressive symptoms. Studies have also found that discrimination from peers versus adults differentially predict academic and psychosocial outcomes (Benner & Graham, 2012; Huynh & Fuligni, 2010).

Although there is growing recognition that distinguishing different sources of discrimination is conceptually and empirically meaningful (Benner & Graham, 2012; Greene et al., 2006; Huynh & Fuligni, 2010), additional distinctions that have been important in the literature on adults—such as that between overt and covert discrimination—have rarely been examined in the adolescent literature. In the literature on microaggressions, which is primarily based on college students and adults, scholars have argued that the ambiguous nature of such microaggressions, especially the cognitive resources required to identify and label their origins, renders them especially stressful. In one of the few studies of such microaggressions among adolescents, Huynh (2012) found that more frequent exposure was associated with more depression and more frequent somatic complaints among Asian and Latino youth.

In this study, we build on current distinctions between discrimination from adults versus peers by distinguishing two forms of discrimination in the peer domain—overt versus covert discrimination. We use the term "overt harassment" to refer to concrete and visible ethnic/racial discrimination (e.g., hearing racial slurs, bullying), whereas we use the term "covert discrimination" to refer to perceptions that one has been the target of often unconscious attitudes and stereotypes about one's racial group (e.g., others acting nervous around you or seeming afraid of you).

Group Differences in the Frequency of Discrimination

Studies suggest that discrimination experiences vary for youth from different ethnic/racial groups, as well as for boys versus girls. Ethnic/racial minority youth experience significantly more discrimination than do White youth (e.g., Huynh & Fuligni, 2010). African American and Latino adolescents report more discrimination from adults compared to their Asian and White counterparts (Fisher et al., 2000; Huynh & Fuligni, 2010; Rivas-Drake et al., 2009). Asian adolescents report more frequent discrimination from their peers as compared to African American, White,

or Latino adolescents (Benner & Graham, 2012; Huynh & Fuligni, 2010; Rivas-Drake, Hughes, & Way, 2007). Similarly, several studies have documented gender differences in the overall frequency of perceived discrimination among adolescents, with boys reporting more discrimination than girls in samples that include Black Caribbean (Seaton et al., 2008), African American (Benner & Graham, 2012; Seaton et al., 2008) and Asian, and Latino and White (Huynh & Fuligni, 2010) youth. Other studies have not found significant gender differences in perceived discrimination (Greene et al., 2006). Including multiple measures of discrimination that vary by type and source may enable us to clarify these mixed results by providing more nuanced and precise information on the nature of discrimination experiences that boys and girls perceive.

Due to the fact that the sample for the present study includes boys and girls from multiple ethnic groups, including Black, Chinese, Latino (Puerto Rican, Dominican), and White, we examine whether trajectories of discrimination vary according to adolescents' gender and ethnic/racial group membership. In this way, we seek to add to the existing literature on the ways in which youths' social position is associated with the types and frequency of discrimination they experience over the course of adolescence.

Perceived Discrimination and Developmental Outcomes

It is well documented that adolescents who encounter more frequent discrimination report less favorable outcomes across multiple developmental domains (Brown, & Bigler, 2005). Recent studies have examined whether there is specificity in these relationships such that different outcome domains are differentially sensitive to particular sources or types of discrimination. In Benner and Graham's (2012) study of Latino, African American, and Asian high school students, discrimination from school personnel was associated with adolescents' poorer school outcomes but not with their psychological adjustment or racial views. Peer discrimination was associated with adolescents' psychological adjustment, but not with their academic outcomes or racial views. Societal discrimination was associated with youths' racial views but not with their academic or psychological adjustment. This type of nuanced examination can deepen researchers' knowledge about how discrimination across varied settings and role relationships may differentially influence youths' well-being.

In this study, because we assess multiple dimensions of discrimination as well as multiple outcomes (psychological, academic, behavioral), we examine whether particular forms or sources of discrimination uniquely predict particular outcome domains within a longitudinal framework, leaving way for stronger inferences than cross-sectional approaches permit. The three domains that are our focus have been examined extensively in the discrimination literature, but few scholars have examined all three of them within a single study.

The Present Study

Our objectives in the present study are threefold. First, we describe trajectories of perceived discrimination from different sources (adults vs. peers) and of different types within the peer domain (e.g., covert discrimination vs. overt harassment) across early to late adolescence. Using data from five assessments taken in 6th, 7th, 8th, 9th, and 11th grades, we also test whether there are distinct trajectories across two experientially distinct time periods—middle school and high school. We hypothesized that youths' reports of ethnic/racial discrimination from adults and peers would increase over the course of middle school due to shifts in individual, interpersonal, and setting level dynamics described earlier. We did not pose specific hypotheses regarding trajectories of discrimination during high school. On the one hand, youths' larger physical stature and increased independence and mobility may mean that youths' exposure to discrimination would continue to increase during high school. On the other hand, the greater discretion that high school as compared to younger students have in choosing the settings and academic courses in which they participate may mean that youth are less likely to encounter discrimination following the transition to high school.

Next, we examine ethnic/racial and gender differences in levels and trajectories of discrimination. We expected that adolescent boys would be more likely to report discrimination, and would experience a greater increase over time, as compared to adolescent girls. Due to pervasive stereotypes that depict African American and Latino males as ominous and threatening and as trouble makers in school (Ferguson, 2001), we expected that African American and Latino boys would be especially likely to report discrimination from adults and covert discrimination from peers. Consistent with prior findings that Chinese youth report high peer harassment relative to other youth (Huynh &

Fuligni, 2010; Niwa, Way, Qin-Hilliard, & Okazaki, 2011), we expected that Chinese youth would be especially likely to report overt discrimination from peers as compared to adolescents from other ethnic backgrounds. We expected that White youth would experience low levels of discrimination overall.

A third objective was to evaluate whether dimensions of discrimination from different sources (adults vs. peers) and from different types (covert vs. overt in the peer domain) predicted developmental outcomes. Due to the fact that the peer discrimination measure we used specified the school context, whereas the adult discrimination measure specified nonschool contexts, we expected that perceived discrimination from peers would be especially likely to be associated with academic adjustment, consistent with Benner and Graham (2012) finding that discrimination in school contexts uniquely predicted academic outcomes. We expected that overt peer (as compared to covert peer or adult) discrimination would be especially important in predicting psychological adjustment due to the public nature of overt discrimination in the context of the salience of peers during adolescence.

Method

The current study is embedded in a larger mixed methods longitudinal study of urban adolescents' experiences across peer, family, school, and neighborhood contexts. In the larger study, we recruited a sample of 1,036 ethnically diverse adolescents from six public middle schools in New York City when they were in sixth grade, the first year of middle school. Details of the school selection criteria and recruitment process have been reported elsewhere (Niwa et al., 2014). Most relevant to the present study is that we began school selection by identifying public middle schools in which the student population comprised 20% of students from three of the four ethnic/racial groups that we targeted for the larger study (African American, Latino [Dominican or Puerto Rican], Chinese, White). Schools this diverse were rare, however, and only three of the six schools in our sample met this criterion. According to school record data, which used panethnic categories, there were African American students at all six schools (range = 7%–29%), Latino students at all six schools (range = 11%–69%), White students at four of the six schools (range = 21%–40%), and Asian students at three of the six schools (range = 1%–81%). Other

relevant criteria for school selection were that the school had a sixth- to eighth-grade structure and fell above the 25th percentile and below the 75th percentile on aggregate city-wide reading and math scores. In all schools, students received reduced or free lunch programs. As described elsewhere (Niwa et al., 2014), we recruited the first cohort of sixth-grade students in the spring of 2005 and a second cohort of sixth-grade students in the spring of 2006. Two of the six schools from which we recruited students were added for Cohort 2 students. Overall, 77% of recruited students returned parental consent forms and, of these, 78% received affirmative parental consent for participation. In the main study, students completed surveys during two class periods in the spring of sixth, seventh, and eighth grades.

The main study included an embedded intensive sample of 240 youth who, alongside their primary caregiver, participated in two additional waves of survey data collection in 9th and 11th grades as well as in-depth interviews in 6th, 8th, and 11th grades. To recruit the intensive sample, primary caregivers indicated interest in the intensive study on a form included with the information packets and consent forms that we distributed to students during recruitment in sixth grade. We followed up by phone with all parents who had indicated interest to ask a set of screening questions. Adolescents and caregivers who self-identified as White, Dominican, Puerto Rican, African American, or Chinese met our eligibility criteria for participation. To obtain survey data in 9th and 11th grades, we mailed the survey to each adolescent (and their caregiver) 3 weeks prior to their scheduled in-depth interview and requested that the adolescent brought the survey with them. If the adolescent had not completed the survey, we ensured sufficient time during their laboratory visit for them to complete the survey on site.

Participants

For the present analysis, we included adolescents who were in the intensive sample if they had data during middle school and at least one wave of survey data in high school (9th or 11th grade). Three adolescents who had no data in middle school and 11 adolescents who had no data in the 9th or 11th grade were excluded from the analyses. The sample for the present study included 226 adolescents (28% White, 24% Latino [11 Puerto Rican; 42 Dominican], 26% Chinese, 23% African American; 52% female). Most adolescents were born in the United States (89% of all adolescents), with 44% having parents

who were also U.S. born, including 74% of African American, 12% of Latino, 1% of Chinese, and 80% of White youth. About three-quarters of adolescents had mothers with some higher education courses or a college degree, including 75% of Black, 70% of Latino, 48% of Chinese, and 98% of Whites. Just over half (56%) lived with both parents: 27% of African American youth, 42% of Latino youth, 79% of Chinese youth, and 77% of White youth. Finally, 114 of the adolescents in the intensive sample were in Cohort 1; 112 were in Cohort 2. Forty-one percent of the intensive sample attended School 1, 12% attended School 2, 8% attended School 3, 20% attended School 4, 8% attended School 5, and 9% attended School 6. African American and Dominican students in the sample were represented at all six schools, Puerto Rican and White students were represented at four of the six schools, and Chinese students were represented at three of the six schools.

Measures

Academic adjustment was estimated as a latent variable using three manifest indicators: behavioral engagement, emotional engagement, and academic efficacy. We used 20 items from Wellborn's (1991) measure of academic engagement to assess emotional engagement (e.g., "When I'm in class I feel bad"; $0 = never$, $4 = all the time$; $\alpha = .80–.87$) and behavioral engagement (e.g., "I try hard to do well in school"; $0 = never$, $4 = all the time$; $\alpha = .80–.85$). Academic efficacy was a six-item measure from Bandura's (1990) perceived self-efficacy scale (e.g., "How good are you at learning math"; $1 = not at all good$, $5 = extremely good$; $\alpha = .70–.73$). A confirmatory factor analysis (CFA) indicated a three-indicator latent construct constrained across 8th and 11th grades fit the data well, $\chi^2(8) = 18.51$; comparative fit index (CFI) = .98; root mean square error of approximation (RMSEA) = .077. Emotional engagement was the marker variable, with a loading of 1 on the latent factor. Behavioral engagement and efficacy had loadings of .87 and .83, respectively. Higher scores on academic adjustment indicate better academic adjustment.

The latent indicator of *psychological adjustment* included self-esteem, depression, and symptomatology. Self-esteem was assessed using 10 items from the Rosenberg Self-Esteem scale (Rosenberg, 1965; e.g., "I feel I have many good qualities"; $1 = strongly disagree$, $4 = strongly agree$; $\alpha = .89–.90$). Depression was assessed using 10 items from the Children's Depression Inventory (Kovacs, 1992). For

each item, adolescents selected the statement that best matched their feelings (e.g., 0 = *I am sad once in a while*, 2 = *I am sad all the time*; α = .81–.83). Symptomatology consisted of a 14-item checklist of somatic symptoms (e.g., headaches, dizziness; 0 = *never*, 4 = *very often*; α = .81–.85). Confirmatory factor analyses indicated that a three-indicator latent variable constrained across 8th and 11th grades fit the data well, $\chi^2(8) = 10.07$; CFI = .99; RMSEA = .034. Self-esteem was the marker variable with a loading of 1 on the latent factor. Depression and symptomatology, reverse scored, had loadings of .49 and .38, respectively. Higher scores indicate better psychological adjustment.

Behavioral adjustment consisted of deviant behaviors and substance use. Deviant behaviors were assessed with six items (e.g., "In the past year, how often have you hit or threatened to hit other students"; 0 = *never*, 3 = *very often*; α = .65–.72). Substance use was assessed with four items (e.g., "In the past year, how often have you been drunk or very high from drinking alcoholic beverages"; 0 = *never*, 6 = *40 + times*; α = .82–.91). Results of a CFA indicated a two-indicator latent variable constrained across 8th and 11th grades fit the data well, $\chi^2(2) = 1.16$; CFI = .99; RMSEA = .026. Substance use was the marker variable with a loading of 1 on the latent factor. Deviance had a loading of .88. High scores indicate more behavioral problems.

Perceived discrimination items were adapted from measures used in prior studies (Greene et al., 2006; Williams, Yu, Jacobson, & Anderson, 1997). Adolescents responded to sets of items that assessed varied manifestations of overt harassment (e.g., "call you names because of your race or ethnicity") and covert discrimination (e.g., "are uncomfortable around you because of your race or ethnicity"), which were included in different sections of the survey for different sources. Due to the fact that items assessing discrimination from *adults in school* were omitted from the sixth-grade protocol in three schools, from the seventh-grade protocol in two schools, and had the lowest mean value and variability, we only use items pertaining to discrimination from peers and nonschool adults in the present analysis. Consistent with prior work (see Rivas-Drake, Hughes, & Way, 2009), we recoded each item into a binary indicator of whether the youth had experienced the manifestation of discrimination within the past year. Exploratory factor analysis using the sixth-grade assessment indicated that a three-factor solution best represented the data, with all items pertaining to nonschool adults loading on a single factor and items pertaining to peers loading

on separate factors representing covert harassment and overt discrimination. The resulting measures represented the number of different types of discrimination youth had ever experienced from adults (range = 0–13) as well as covert (range = 0–9) and overt (range = 0–9) peer discrimination.

Covariates

We controlled for several demographic variables to reduce the likelihood that they account for relationships between perceived discrimination and academic, psychological, or behavioral outcomes. Covariates included ethnicity/race, coded as three dummy variables to represent four ethnic groups (African American, Chinese, Latino, and White): gender (0 = *male*, 1 = *female*), maternal education (1 = *less than high school*, 4 = *4-year college degree or more*), parental immigration (0 = *U.S. origin*, 1 = *foreign origin*), and cohort (0 = *Cohort 1*, 1 = *Cohort 2*). Using school record data, we also created ethnic congruence scores for each adolescent that represented concordance between the adolescents' ethnicity/race and the ethnic/racial composition of the student body. Thus, a White student in a school that was 10% White would have a congruence value of .10. We also used school record data to estimate school diversity using Simpson's Diversity Index described in Benner and Graham (2011). The index ranges from 0 to 1 (higher scores reflect greater diversity) and indicates the probability that two individuals randomly selected from the same school will belong to different ethnic/racial groups. We used panethnic labels to generate these scores as these labels were the only ones recorded in school records.

Analytic Plan

Analyses were conducted in Mplus 7.3 (Muthén & Muthén, 1998-2012). To examine initial levels and trajectories of change in each indicator of discrimination, we first estimated unconditional latent growth models that included a latent intercept and a single slope (Coded 0, 1, 2, 3, 5) covering the five assessments between 6th and 11th grades. Using the chi-square difference test, we compared the initial model to a discontinuous piecewise model that estimated separate slopes for middle school versus high school. The piecewise model had one intercept (i.e., the initial level at the sixth-grade assessment) and two slopes. The first slope included the sixth-, seventh-, and eighth-grade assessments (Coded 0, 1, 2). The second slope included the 8th-, 9th-, and

11th-grade assessments (Coded 0, 1, 3). We retained the baseline model that fit the data best. The fit of the model to the covariance structure of the data was evaluated using standard criteria including a RMSEA value of < .08, a CFI value of > .95, and a standardized root mean square residual value of < .08.

To examine whether levels and trajectories of change in discrimination vary according to ethnicity/race or gender, we regressed each of the latent growth factors for each indicator of discrimination onto the set of demographic covariates. Thus, we examined parameter estimates for ethnicity/race and gender, controlling for maternal education, parents' foreign born status, cohort, and student–school ethnic congruence. For ethnicity/race, we ran successive models, rotating the ethnic/racial group serving as the reference group.

Finally, to examine relationships between adolescents' discrimination experiences and their academic, psychological, and behavioral adjustment, we tested a full model in which each of the latent outcomes at 8th and 11th grades was regressed onto the growth factors and covariates. Models included the covariance between the intercept and slope factors and between outcomes in sixth and eighth grades. Due to our interest in whether variation in levels and trajectories of discrimination experiences predicted adjustment outcomes at specific time points (the last year of middle school, the end of junior year in high school), our analytic approach most efficiently and most closely represented the core research question of interest compared to alternative models. For example, with a sample size of 226, we had insufficient statistical power to estimate additional parameters that would

have been required for dual process models, which examine trajectories for predictors and criterion variables simultaneously. In the analyses, we used the TYPE = Complex command within MPLUS version 7.3 to account for the fact that students were nested within schools during the 3 years of middle school. Although students were also nested within 36 classrooms each year, the sample size did not permit us to account for this level of nesting, especially since classroom composition changed each year.

Less than 2% of data were missing at each wave for the constructs included in the analyses we present. We used full information maximum likelihood estimation, the preferred method for managing missing data using MPLUS v7.3. The 14 adolescents who were missing data in middle school ($n = 3$) or high school ($n = 11$) did not differ significantly from the 226 youth in the analytic on key measures of interest. Of the 226 remaining youth, 218 had all five waves of data and 18 had four waves of data.

Results

Descriptive Results

Means and standard deviations for all measures across assessment points are shown in Table 1. Of particular interest are mean estimates for sixth grade, when youth were first assessed. On average, in sixth grade, youth reported having experienced three manifestations of discrimination from adults, two manifestations of overt peer discrimination, and one manifestation of covert peer discrimination. Mean values on measures of academic adjustment were above the scale midpoint, suggesting that

Table 1
Means and Standard Deviations Across All Measures

Measure	Potential range	W1 M (SD)	W2 M (SD)	W3 M (SD)	W4 M (SD)	W5 M (SD)
Adults	0–13	3.00 (3.85)	3.39 (4.15)	3.77 (4.59)	3.51 (4.56)	3.01 (4.59)
Overt peer	0–9	2.03 (2.89)	2.74 (3.37)	2.99 (3.67)	2.39 (3.30)	2.19 (3.08)
Covert peer	0–9	1.27 (2.20)	1.81 (2.95)	2.21 (3.41)	1.93 (3.01)	1.68 (3.00)
Behavioral engagement	0–4	3.00 (0.56)	2.89 (0.52)	2.79 (0.52)	2.75 (0.60)	2.82 (0.58)
Emotional engagement	0–4	2.92 (0.69)	2.81 (0.62)	2.77 (0.54)	2.82 (0.52)	2.80 (0.58)
Academic efficacy	1–5	3.87 (0.59)	3.69 (0.64)	3.66 (0.65)	3.62 (0.68)	3.59 (0.65)
Self-esteem	1–4	3.26 (0.60)	3.25 (0.56)	3.21 (0.58)	3.18 (0.54)	3.19 (0.56)
Depression	1–3	1.75 (0.32)	1.76 (0.33)	1.76 (0.30)	1.76 (0.30)	1.75 (0.28)
Symptomatology	0–4	2.78 (0.65)	2.85 (0.57)	2.83 (0.53)	2.86 (0.53)	2.85 (0.55)
Deviance	0–3	0.18 (0.31)	0.18 (0.32)	0.20 (0.30)	0.24 (0.34)	0.24 (0.31)
Drug abuse	0–6	0.11 (0.36)	0.11 (0.29)	0.25 (0.63)	0.54 (1.11)	0.95 (1.50)

youth felt moderately engaged in school and experienced adequate efficacy in their ability to complete school tasks in 8th and 11th grades. Mean values on the measure of self-esteem were far above the scale midpoint, whereas values on measures of depression and symptomatology were below the scale midpoint in 8th and 11th grades. Youth reported low deviance and substance use, indicating little activity among youth in our sample.

Table 2 shows parameter estimates from the unconditional growth models in which we estimated the latent intercepts and latent slopes for each of the three indicators of perceived discrimination. For each indicator, a discontinuous piecewise LGM fit the data better than did a continuous LGM, $\Delta\chi^2(12) = 7.64$, $p < .05$, for adults; $\Delta\chi^2(13) = 24.91$, $p < .001$, for overt peer; $\Delta\chi^2(12) = 24.15$, $p < .001$, for covert peer. As well, for each indicator, the mean of the intercept, middle school slope, and high school slope were significantly different from zero. There was significant variation around each of these parameter estimates, indicating differences among youth in initial levels and trajectories of change. Perceived discrimination increased during middle school at about .3 units per year, on average, for the adult measure and .4 units per year, on average, for the two peer measures. Parameter estimates likewise indicated a decrease in discrimination in high school of about .3 units per year for the nonschool adult and overt peer measures and .2 units per year for the covert peer discrimination

measure. As the fit indices indicate, the three LGMs fit the data well.

Ethnic/Racial and Gender Differences in Perceived Discrimination

Table 3 presents parameter estimates for the regression of each latent growth factor on the set of covariates. Model fit indices show that all models fit the data well. The parameter estimates for ethnicity/race in Table 3 are based on multiple models in which we rotated the reference group. The intercept shown for each model represents average values for youth coded as "0" on all dummy variables and at the mean for all continuous variables. Parameter estimates for other covariates are based on models with White youth as the reference group.

Beginning with discrimination from nonschool adults, the table shows that African American, Latino, and Chinese youth reported higher initial levels of perceived discrimination than did their White peers. Latino and Chinese youth evidenced a significantly less steep increase in adult discrimination compared to White youth. Latino youth evidenced a significantly less steep increase compared to African American youth. African American youth evidenced a less steep decline in nonschool adult discrimination relative to their White peers. There were no gender differences in levels or trajectories of discrimination from nonschool adults.

Table 2

Unstandardized Parameter Estimates (SEs) of Unconditional Latent Growth Models of Discrimination by Type and Source

	Adults B (SE)	Overt peer B (SE)	Covert peer B (SE)
Means			
Intercept	3.17 (0.27)***	2.13 (0.20)***	1.34 (0.15)***
Slope 1	0.34 (0.15)*	0.40 (0.13)**	0.46 (0.11)***
Slope 2	−0.33 (0.12)**	−0.27 (0.10)**	−0.21 (0.08)**
Variance			
Intercept	7.27 (1.17)***	4.76 (1.34)***	2.43 (0.44)***
Slope 1	0.97 (0.45)*	1.43 (0.58)*	0.92 (0.25)***
Slope 2	1.74 (0.28)***	1.23 (0.20)**	0.96 (0.15)***
Covariance			
(Int, Slope1)	0.01 (0.00)	−0.96 (0.79)	0.01 (0.00)
(Int, Slope2)	−0.76 (0.44)+	−0.09 (0.30)	−0.31 (0.18)+
(Slope1, Slope2)	−0.15 (0.32)	−0.66 (0.25)**	−0.35 (0.18)*
Fit of the model	$\chi^2(8) = 12.21$; RMSEA = .049; CFI = .98; SRMR = .043	$\chi^2(7) = 10.81$; RMSEA = .049; CFI = .97; SRMR = .049	$\chi^2(8) = 16.72$; RMSEA = .069; CFI = .95; SRMR = .066

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. $^+p < .10$. $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Table 3

Unstandardized Estimates of Demographic Covariates Regressed on Growth Factors by Source and Type of Discrimination

	Adults			Overt peer			Covert peer		
	Intercept B (SE)	Slope 1 B (SE)	Slope 2 B (SE)	Intercept B (SE)	Slope 1 B (SE)	Slope 2 B (SE)	Intercept B (SE)	Slope 1 B (SE)	Slope 2 B (SE)
Ethnicity/race									
Intercepts for Whites as reference	2.01 (1.36)	1.93 (0.57)**	−1.44 (0.70)*	1.37 (0.91)	3.15 (0.88)***	−2.30 (0.40)***	0.90 (0.51)+	1.76 (0.64)**	−1.31 (0.52)*
African American	3.00 (0.83)***	−0.19 (0.37)	0.64 (0.31)*	−0.13 (0.38)	−0.01 (0.39)	0.53 (0.40)	1.30 (0.48)**	0.69 (0.56)	0.16 (0.21)
Latino	2.33 (0.78)**	−0.62 (0.23)**	0.68 (0.38)+	−0.80 (0.33)*	−0.33 (0.55)	1.03 (0.36)**	0.75 (0.71)	0.16 (0.21)	0.16 (0.21)
Chinese	3.84 (0.92)***	−1.07 (0.51)*	0.82 (0.44)+	1.44 (0.76)+	−1.20 (0.56)**	1.43 (0.33)***	1.77 (0.74)*	−0.41 (0.29)	0.61 (0.35)+
Intercepts for African Americans as reference	5.00 (0.98)***	1.73 (0.73)*	−0.81 (0.64)	1.24 (1.07)	3.14 (0.80)***	−1.77 (0.59)**	2.20 (0.57)***	2.45 (0.67)***	−1.47 (0.64)*
Latino	−0.67 (1.24)	−0.42 (0.18)*	0.04 (0.59)	−0.67 (0.61)	−0.32 (0.30)	0.51 (0.30)+	−0.55 (1.00)	−0.27 (0.36)	0.32 (0.25)
Chinese	0.84 (1.62)	−0.87 (0.65)	0.18 (0.53)	1.57 (1.01)	−1.19 (0.42)**	0.90 (0.34)**	0.48 (1.07)	−1.10 (0.54)*	0.76 (0.45)+
Intercepts for Latinos as reference	4.33 (1.35)**	1.31 (0.56)*	−0.76 (0.57)	1.82 (0.76)	2.82 (0.81)***	−1.27 (0.33)***	1.65 (0.70)*	2.18 (0.66)**	−1.15 (0.47)*
Chinese	1.51 (0.77)+	−0.45 (0.56)	0.14 (0.26)	2.24 (0.63)***	−0.87 (0.37)*	0.40 (0.15)**	1.03 (0.30)**	−0.83 (0.30)**	0.44 (0.23)+
Gender									
Boy	0.20 (0.38)	0.08 (0.25)	0.08 (0.31)	0.06 (0.31)	0.27 (0.39)	−0.17 (0.23)	0.56 (0.28)*	−0.04 (0.17)	−0.13 (0.10)
Covariates									
School diversity	0.00 (1.28)	−0.83 (1.18)	−1.60 (0.27)***	2.34 (0.48)***	−2.19 (1.08)*	0.19 (0.86)	0.95 (0.53)	−2.26 (1.02)*	0.61 (0.71)
Ethnic congruence	0.54 (1.99)	−0.27 (1.01)	0.15 (0.14)	0.34 (0.31)	−0.31 (0.92)	−0.05 (0.65)	−0.65 (0.97)	1.04 (0.76)	−0.73 (0.48)
Maternal education	0.34 (0.25)	−0.35 (0.13)**	0.21 (0.20)	0.31 (0.14)*	−0.43 (0.16)**	0.28 (0.12)*	0.06 (0.09)	−0.24 (0.11)*	0.20 (0.10)*
Foreign	−1.47 (0.44)**	0.62 (0.45)	0.26 (0.28)	0.22 (0.30)	0.20 (0.46)	−0.35 (0.17)*	−0.31 (0.64)	0.12 (0.40)	−0.10 (0.12)
Cohort	−1.09 (0.18)***	0.09 (0.27)	0.31 (0.15)*	−1.27 (0.40)**	0.05 (0.32)	0.37 (0.14)**	−0.65 (0.17)***	−0.01 (0.29)	0.27 (0.18)
Fit of model	$\chi^2(27) = 54.68$; RMSEA = .067; CFI = .93; SRMR = .031			$\chi^2(25) = 40.49$; RMSEA = .052; CFI = .96; SRMR = .030			$\chi^2(27) = 40.96$; RMSEA = .048; CFI = .95; SRMR = .035		

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. $^+p < .10$. $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Although not of primary interest, parameter estimates for covariates indicate lower initial levels of discrimination from nonschool adults among foreign-born and Cohort 1 youth, a less steep increase in nonschool adult discrimination among youth with more highly educated mothers, and more of a decrease during high school among youth who had attended more ethnically diverse middle schools.

Turning next to parameter estimates for overt peer discrimination, Table 3 shows that Chinese adolescents reported marginally more overt peer discrimination in sixth grade compared to their White and Latino counterparts. Latino youth reported less overt peer discrimination than did their White counterparts. Significant negative coefficients for Chinese adolescents' middle school slope indicated that Chinese youth experienced less steep increases during middle school in overt peer discrimination compared to White, Latino, or African American youth. Chinese youth also experienced significantly less steep declines in overt peer discrimination in high school relative to their White, African American, and Latino peers. Latino youth also evidenced less steep declines in overt peer discrimination relative to their White counterparts. Among the covariates, youth in more ethnically diverse schools and those whose mothers had higher levels of education reported more overt peer discrimination relative to their counterparts. However, youth in more ethnically diverse middle schools and whose mothers were more highly educated reported less steep increases in overt peer discrimination over times. Maternal education, foreign born status, and cohort also predicted the high school slope for overt peer discrimination.

Finally, parameter estimates for covert peer discrimination, shown in the last three columns of Table 3, indicated that African American and Chinese adolescents reported more covert peer discrimination in sixth grade relative to their White counterparts. Chinese youth also reported more covert peer discrimination than did Latino youth. The significant negative coefficients for Chinese adolescents' sixth- to eighth-grade slope indicate that Chinese youth evidenced a less steep increase in covert peer discrimination compared to their African American and Latino peers. Boys reported more covert peer discrimination in sixth grade relative to girls. Among the covariates, Cohort 2 youth reported less covert peer discrimination compared to Cohort 1 youth, youth in more ethnically diverse middle schools and those whose mothers were more highly educated evidenced a less steep increase in covert peer discrimination during middle school. Youth with more highly educated mothers also reported a less steep decrease in covert peer discrimination during high school.

Youths' Adjustment

Table 4 presents parameter estimates for models in which academic, psychological, and behavioral adjustment were regressed onto each of the latent growth factors and demographic covariates. All fit indices indicated a range from adequate to acceptable fit of the models to the data.

The first panel of Table 4 shows that the intercept of perceived discrimination from nonschool adults predicted poorer academic and psychological adjustment, and more behavior problems at the end of eighth grade. Although increases in nonschool adult discrimination over middle school did not predict eighth-grade adjustment outcomes, greater declines in nonschool adult discrimination during high school predicted more favorable academic and psychological adjustment in 11th grade, controlling for eighth-grade academic and psychological adjustment.

As the second panel of Table 4 shows, the sixth-grade intercept of overt peer discrimination predicted poorer academic and psychological adjustment in eight grade and more behavior problems in 8th and 11th grades. Steeper increases in overt peer discrimination during middle school also predicted lower academic adjustment and (marginally) more behavior problems in eighth grade. Greater declines in overt peer discrimination during high school predicted more favorable academic and psychological adjustment in 11th grade, controlling for eighth-grade academic and psychological adjustment.

Finally, covert peer discrimination in sixth grade predicted poorer academic and psychological adjustment, and more behavior problems in eighth grade. Steeper increases in covert peer discrimination during middle school predicted poorer academic and psychological adjustment, and more behavior problems in eighth grade. Greater declines in covert peer discrimination in high school predicted more favorable academic and psychological adjustment in 11th grade, controlling for eighth-grade academic and psychological adjustment.

Discussion

The main goal of the present study was to contribute to the complex and growing literature on

Table 4

Unstandardized Estimates of Demographic Covariates Regressed on Growth Factors by Source and Type of Discrimination

	Academic adjustment		Psychological adjustment		Behavior problems	
	8th grade B (SE)	11th grade B (SE)	8th grade B (SE)	11th grade B (SE)	8th grade B (SE)	11th grade B (SE)
Adults						
African American	.27 (.13)*	.19 (.09)*	.32 (.17)$^+$	.10 (.12)	−.01 (.05)	−.03 (.03)
Latino	.12 (.14)	.09 (.06)	.18 (.16)	.13 (.13)	.04 (.02)$^+$	−.10 (.03)**
Chinese	.13 (.13)	.11 (.10)	.06 (.16)	−.00 (.18)	−.01 (.05)	−.22 (.08)**
Boy	−.13 (.07)$^+$	.02 (.03)	.01 (.11)	.06 (.03)*	.08 (.03)**	−.03 (.02)
Ethnic congruence	.24 (.17)	.12 (.08)	−.05 (.15)	.19 (.13)	− .04 (.09)	−.05 (.07)
Maternal education	.07 (.04)$^+$	.00 (.02)	.06 (.05)	.03 (.05)	−.01 (.02)	−.01 (.02)
Foreign	.01 (.07)	.01 (.06)	.04 (.05)	.04 (.09)	−.05 (.05)	.07 (.05)
Cohort	.01 (.12)	−.01 (.05)	−.01 (.06)	−.05 (.06)	.01 (.05)	−.06 (.03)*
School diversity	−.49 (.32)	−.26 (.18)	−.30 (.16)$^+$	−.21 (.20)	.12 (.16)	.24 (.07)
Intercept	−.03 (.01)**	−.01 (.01)	−.03 (.01)*	.01 (.01)	.03 (.01)***	.02 (.01)$^+$
Slope 1	−.04 (.04)	−.03 (.02)	−.08 (.06)	.01 (.05)	.02 (.02)	−.02 (.03)
Slope 2	—	−.06 (.01)***	—	−.05 (.02)**	—	.03 (.02)
Fit of model	$\chi^2(32)$ = 67.37; RMSEA = .070; CFI = .95; SRMR = .030		$\chi^2(32)$ = 56.30; RMSEA = .058; CFI = .96; SRMR = .029		$\chi^2(32)$ = 60.44; RMSEA = .063; CFI = .96; SRMR = .031	
Overt peer						
African American	.19 (.11)$^+$	.17 (.07)***	. 24 (.11)*	.14 (.11)	.07 (.04)	.00 (.03)
Latino	.02 (.10)	.11 (.06)$^+$	.11 (.11)	.16 (.06)*	.13 (.03)***	−.04 (.02)*
Chinese	.09 (.04)*	.21 (.08)**	.28 (.13)*	.16 (.12)	.11 (.05)*	−.13 (.04)***
Boy	−.13 (.06)*	.01 (.03)	−.02 (.05)	.04 (.02)$^+$	.07 (.03)*	−.02 (.03)
Ethnic congruence	.24 (.18)	.12 (.15)	.10 (.16)	.22 (.16)	−.01 (.10)	−.02 (.09)
Maternal education	.08 (.03) **	.03 (.02)	.14 (.03)***	.07 (.04)$^+$	.01 (.02)	.01 (.01)
Foreign	.05 (.05)	−.03 (.05)	.05 (.06)	.00 (.06)	−.09 (.05)$^+$	.05 (.04)
Cohort	−.03 (.13)	−.03 (.03)	−.12 (.05)*	−.11 (.06)$^+$	.01 (.07)	−.06 (.02)***
School diversity	−.42 (.32)	−.10 (.22)	.18 (.27)	.08 (.28)	.17 (.25)	.22 (.09)*
Intercept	−.06 (.01)***	−.03 (.02)	−.10 (.03)***	−.03 (.02)$^+$	.02 (.005)***	.01 (.00)*
Slope 1	−.04 (.02)**	−.02 (.02)	.08 (.08)	.07 (.05)	.06 (.03)$^+$	.03 (.03)
Slope 2	—	−.07 (.02)***	—	−.03 (.01)*	—	.02 (.02)
Fit of model	$\chi^2(30)$ = 40.24; RMSEA = .039; CFI = .98; SRMR = .030		$\chi^2(31)$ = 47.29; RMSEA = .048; CFI = .97; SRMR = .030		$\chi^2(31)$ = 49.33; RMSEA = .051; CFI = .97; SRMR = .034	
Covert peer						
African American	.34 (.15)*	.18 (.07)*	.39 (.17)*	.07 (.05)	−.06 (.10)	−.03 (.08)
Latino	.17 (.13)	.10 (.07)	.25 (.13)$^+$	.06 (.07)	.01 (.06)	−.06 (.04)
Chinese	.10 (.12)	.15 (.09)$^+$	.07 (.13)	.09 (.06)	.06 (.05)	−.10 (.09)
Boy	−.12 (.07)	.02 (.04)	.02 (.11)	.06 (.03)*	.07 (.03)*	−.02 (.03)
Ethnic congruence	.34 (.24)	.08 (.09)	.14 (.16)	.05 (.20)	−.12 (.17)	−.08 (.12)
Maternal education	.05 (.04)	.01 (.01)	.05 (.04)	.05 (.02)*	.02 (.02)	.02 (.03)
Foreign	.03 (.07)	−.03 (.05)	.04 (.03)	−.01 (.06)	−.08 (.07)	.04 (.06)
Cohort	−.01 (.13)	−.02 (.06)	−.02 (.06)	−.07 (.10)	.01 (.08)	−.07 (.02)**
School diversity	−.70 (.40)$^+$	−.13 (.20)	−.46 (.24)$^+$	.10 (.37)	.32 (.29)	.33 (.26)
Intercept	−.05 (.02)*	−.02 (.02)	−.05 (.02)*	−.01 (.02)	.03 (.01)***	.00 (.03)
Slope 1	−.13 (.06)*	−.02 (.05)	−.12 (.06)*	.08 (.08)	.12 (.03)***	.06 (.08)
Slope 2	—	−.07 (.03)*	—	−.07 (.03)*	—	.01 (.03)
Fit of model	$\chi^2(32)$ = 45.24; RMSEA = .043; CFI = .98; SRMR = .033		$\chi^2(32)$ = 46.48; RMSEA = .045; CFI = .97; SRMR = .031		$\chi^2(32)$ = 49.94; RMSEA = .050; CFI = .96; SRMR = .037	

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. ^+p < .10. $*p$ < .05. $**p$ < .01. $***p$ < .001.

adolescents' discrimination experiences. We first examined initial levels and trajectories of change in multiple indicators of ethnic/racial discrimination during adolescence. Next, we examined whether levels or trajectories varied according to adolescents' ethnicity/race or gender. Finally, we examined associations between discrimination and youths' academic, psychological, and behavioral adjustment in the last year of middle school and junior year of high school. Below, we discuss our findings vis-à-vis each of these objectives.

Consistent with findings in prior studies, our findings suggest that experiences of ethnic/racial discrimination are relatively infrequent among early adolescents, on average. Recall that the coding we used meant that we assessed the breadth of adolescents' discrimination experiences (the number of discrimination items adolescents indicated had "ever" happened within the past year) rather than frequency, per se. Nevertheless, the average values on each of our measures were quite low. Other studies have found discrimination to be a low-frequency experience as well. In Huynh and Fuligni's (2010) study of Latino, Asian American, and European American high school adolescents, about two-thirds reported having experienced discrimination from adults or peers, but the frequency of these reports were low. In addition, only 12% of their sample reported any discrimination within a 14-day period.

We found that discrimination from all sources increased during middle school, on average, consistent with our a priori hypothesis and with findings from several prior studies (Brody et al., 2006; Martin et al., 2011). As others have noted, shifts in individual, interpersonal, and setting level dynamics as youth enter adolescence might lead one to expect increases in discrimination during this period (Greene et al., 2006; Brown & Bigler, 2005). These dynamics include adolescents' growing capacity to recognize and reflect upon societal views of their ethnic/racial group, the increasing salience of social identity exploration processes, and expansion of the social worlds in which youth operate. Most importantly, as youth enter adolescence, they are subject to negative societal stereotypes about teens, generally (Hine, 1999). This is especially true for youth of color, who many view as a threat and menace to the public (Cunningham et al., 2013). Thus, increases in perceived discrimination during early adolescence likely reflect both growth in the salience of ethnicity/race to adolescents' sense of themselves and shifts in their experiences.

The finding that perceptions of discrimination declined following the transition to high after having increased during middle school is especially noteworthy. Findings from other studies of how discrimination experiences change during high school have been inconsistent, with decreases (Bellmore et al., 2012), increases (Benner & Graham, 2011), and stability (Greene et al., 2006) reported. One factor that may be contributing to the discontinuous findings is that high school programs, policies, and regularities promote participation in more ethnically homogenous daily settings more so than do those in middle schools, including academic tracking (including AP/IB courses), availability of electives, and extracurricular programming (arts, clubs, athletics). Thus, the decline in peer discrimination during high school may reflect the higher probability that high youth are spending time in settings with students more similar to themselves. Although we controlled for school diversity in all analyses, the measure we used may not sufficiently capture the diversity of settings in which youth spend time.

Importantly, average levels and trajectories of discrimination varied by ethnicity/race. The ethnic/racial differences evident for the sixth-grade intercept were consistent with extant findings that ethnic minority students report more discrimination than do White students, that African American and Latino students report more discrimination from adults, and that Asian students report more discrimination from peers (e.g., Benner & Graham, 2012; Greene et al., 2006; Huynh & Fuligni, 2010). Ethnic/racial differences in slope factors are more difficult to evaluate vis-à-vis existing studies, as few have estimated trajectories across multiple ethnic groups. Notably, 8 of the 11 significant ethnic/racial comparisons in slope factors pertained to a pattern in which Chinese youth reported less steep increases and less steep declines in discrimination over time. In follow-up analyses, the unadjusted means for Chinese youth showed a linear decline in discrimination over time. It is possible that, although Chinese students initially encounter high peer harassment, as other have indicated (Huynh & Fuligni, 2010), over time they increasingly benefit from the positive model minority stereotypes about their group. Other ethnic/racial group differences in slope factors were less pronounced in this sample, but were also consistent with prior studies. Compared to White youth, African American youths' perceptions of discrimination from nonschool adults did not decline during high

school at the same rate as did those of other students, consistent with negative societal stereotypes about African American youth. Latino youth, 82% of whom were Dominican, reported a less steep increase in nonschool adult discrimination compared to White and African American youth, perhaps because many of them attended a school that was 70% Latino. Although we controlled for school ethnic/racial congruence, we did not control for the ethic/racial composition of other contexts near school that may also be homogeneous.

Although we expected that boys would report more discrimination than would girls, we found few gender differences in initial levels or rates of change. The exception was that boys reported more covert discrimination from peers in sixth grade. Unfortunately, we were unable to examine gender differences within racial groups due to insufficient sample size. In future work, scholars need to examine gender patterns within ethnic groups more comprehensively.

Finally, we examined whether starting levels and rates of change in discrimination from different sources and of different types predicted youths' academic, psychological, and behavioral adjustment at the end of middle school and junior year of high school. We found that the intercept of each indicator of discrimination predicted each of the three adjustment outcomes such that higher adult, covert peer, and overt peer discrimination in sixth grade predicted less favorable academic and psychological adjustment and more behavior problems in eighth grade. Increases during middle school in overt and covert peer discrimination also predicted less favorable academic, psychological, and behavioral adjustment at the end of eighth grade, although middle school increases in nonschool adult discrimination did not. Finally, declines in each of the three indicators of discrimination between 8th and 11th grades predicted more favorable academic and psychological adjustment at the end of youths' high school junior year, although such declines did not predict fewer behavior problems.

Although the longitudinal relationships we found bolster existing evidence that discrimination experiences negatively impact youth, we found little evidence of specificity in these relationships, as most patterns of relationships were similar across types of discrimination and across outcomes. Unfortunately, we had insufficient statistical power to include all three measures in a single model, which may be required to find such specificity given shared variance among the set of discrimination measures. One exception was that the measure of covert peer discrimination was the only measure for which the middle school slope consistently predicted outcomes at the end of eighth grade. Although we had anticipated that overt peer discrimination would be especially predictive of youth outcomes due to its public nature, it may be that the ambiguity involved in covert peer discrimination is even more pernicious in terms of youths' adjustment due to psychological resources needed to process the uncertainty and ambiguity involved in covert discrimination. We also expected that including multiple outcomes would help clarify the domains that are most sensitive to varying manifestations of discrimination. Again, unlike Benner and Graham (2012), we were unable to estimate a single model that included all outcomes, which may account for the general pattern that findings for the varied outcome measures were quite similar.

Summary and Limitations

Although youth discrimination experiences were low in frequency in the present study, they were associated in important ways with youths' academic, psychological, and behavioral adjustment in middle and high school. Our study had a number of strengths, including a longitudinal design that covered a large swath of adolescence, a multiethnic sample, and multiple measures of sources and types of discrimination as well as multiple adjustment outcomes. The present study also had limitations, however, that bound the types of conclusions that can be drawn. All measures we used were self-report obtained using a single method. Thus, we cannot rule out the possibility that common method variance underlies some of the joint variation in measures, although the fact that assessments took place at different time periods lessens this concern somewhat. In addition, the sample of schools was purposive, selected in ways that facilitated our ability to answer questions of conceptual interest. However, the sample was not representative and thus findings are not been generalizable to youth in cities, schools, or classrooms that differ from the ones we studied. Our sample size, though adequate, was insufficient to estimate a single model that included all predictors and outcomes of interest, which would have better positioned us to explore hypotheses regarding gender differences or specificity. As the literature on discrimination continues to grow, future studies should address these issues.

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