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Schools, Peers, and Prejudice in Adolescence

Permalink

https://escholarship.org/uc/item/4s40q58d

Journal

Journal of Research on Adolescence, 25(1)

ISSN

1050-8392

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Publication Date

2015-03-01

DOI

10.1111/jora.12106

Peer reviewed

Schools, Peers, and Prejudice in Adolescence

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Abstract

Adolescents' perceptions of the prejudice in their social environments can factor into their developmental outcomes. The degree to which others in the environment perceive such prejudice —regardless of adolescents' own perceptions—also matters by shedding light on the contextual climate in which adolescents spend their daily lives. Drawing on the National Longitudinal Study of Adolescent Health, this study revealed that schoolwide perceptions of peer prejudice, which tap into the interpersonal climate of schools, appeared to be particularly risky for adolescents' academic achievement. In contrast, adolescents' own perceptions of peer prejudice at schools were associated with their feelings of alienation in school. Importantly, these patterns did not vary substantially by several markers of vulnerability to social stigmatization.

Keywords

prejudice; discrimination; school belonging; academic achievement

Adolescents spend significant time at school, an institution that serves as the central site of peer relations as well as a major playing field for competition and stratification. For these reasons, the general social climate of schools (e.g., what is going on among people at the school, how people feel in the school) matters to the short- and long-term outcomes of young people above and beyond the formal instructional, curricular, and structural aspects of schools traditionally targeted by educational policy and studied by school researchers. Developmentally-oriented scholars have done a great deal to characterize these social psychological dimensions of school context, helping to expand the conceptualization of "school effects" (Bryk & Schneider, 2005; Coleman, 1961; Eccles & Roeser, 2011). Following this tradition, we attempt to characterize school contexts in terms of the degree to which fellow students view each other as prejudiced, an approach that taps into undercurrents of mistrust and suspicion in the student body that represent potentially harmful ecological environments for young people.

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Introduction

Our research is motivated by the long tradition of developmental research on the consequences of perceived prejudice during adolescence. According to Garcia Coll and colleagues (1996; p. 1899), prejudice is "the preconceived judgment or opinion made about a person or a group based on social position variables, and it is usually accompanied by an unreasonable predilection or objection." Perceived prejudice, therefore, refers to the degree to which such judgments and opinions are sensed in others. Developmental research has significantly elucidated how perceptions of prejudice emerge and matter on the individual level (Brown & Bigler, 2005; Poteat & Anderson, forthcoming), but more can be done to understand how such perceptions operate on the school level; in other words, the extent to which perceptions of prejudice are widely shared in the student body.

Such an approach, we argue, gets at the social processes that help to define whether a school context supports healthy development. Following the person-process-context concept from the ecological perspective (Bronfenbrenner & Morris, 1998), experiences of attending schools in which perceived prejudice is rare or rampant should vary according to the youth in question. For example, individual students may be in or out of step with fellow peers in their perceptions of prejudice at school. As such, the question becomes whether adolescents can be personally untouched by widespread prejudice among school peers. Does a school in which perceptions of prejudice among students suggest a negative environment affect adolescents even if they themselves do not perceive the school that way? As another example, the person-process-context interplay may reflect that young people from groups that have traditionally been vulnerable to stigmatization and differential treatment in school are likely to be more affected by attending schools in which perceived prejudice is widespread—here, the question is whether the difference between attending schools high or low in perceived prejudice is greater for youth who are, for example, race/ethnic minorities, from poor or immigrant families, overweight, or gay.

Extending the long-standing line of inquiry on the role of perceived prejudice in individual adjustment into the realm of school context is relevant to the challenges facing schools as they educate increasingly diverse student bodies who face increasingly high stakes competition for academic credentials (Arum, 2000; Riegle-Crumb & Grodsky, 2010). In this study, we examine how both behavioral and socioemotional aspects of adolescents' academic functioning vary as a function of the prevalence of perceptions of prejudice among peers in the school, whether these patterns are stronger or weaker depending on the "agreement" between individual youth and their school peers in their perceptions of prejudice, and how the link between individual functioning and perceived prejudice varies across segments of the adolescent population that differ in their risk of being marginalized and mistreated. To do so, we take advantage of representative data from the National Longitudinal Study of Adolescent Health (Add Health) that include adolescent reports of perceptions of peer prejudice in school as well as a census of school attendees that enables the calculation of average levels of perceived peer prejudice at school among all students in the schools under study.

Perceived Prejudice and School Context

In the American educational system, there is frequent discussion of "good" schools and "bad" schools, with such labels most often defined by institutional resources that clearly delineate schools serving specific student demographics (Kozol, 2005; Rothstein, 2004). Yet schools are also places of interaction with socially- and culturally-constructed meaning (Holland, Lachicotte, Skinner, & Cain, 1998), and the culture and climate of schools are other means by which schools can be labeled. In this respect, "good" schools house students and teachers who share mutual trust and respect for one another, whereas "bad" schools are characterized by suspicion, anxiety, and social distance (Bryk & Schneider, 2005). Much like variations in academic culture, variations in the socioemotional tone of school cultures can translate into meaningful differences in student well-being. When schools are characterized by trust, cooperation, and support, students exhibit better physical and mental health (Denny et al., 2011; Way, Reddy, & Rhodes, 2007), and they also express greater academic efficacy and perform better academically (Brand, Felner, Seitsinger, Burns, & Bolton, 2008; Bryk & Schneider, 2005).

Experiences and interactions that foster trust (or mistrust) in schools are far-reaching, with perceived fairness and mutual respect as key factors (Tschannen-Moran & Hoy, 2000). As such, the pervasiveness of perceptions of prejudice would be one indicator that schools are not healthy places—socially or psychologically—for young people. In other words, perceived prejudice can be thought of not only as an individual experience or as a feature of interpersonal relations (Brown & Bigler, 2005; Fisher, Jackson, & Villarruel, 1997). Given that schools are collectives of individuals influencing and creating a shared culture (Farkas, 2003), they can also be characterized by how widespread perceptions of prejudice are among students.

This conceptualization of perceived prejudice on the school level is a significant departure from past research and theory in which perceived prejudice has almost universally been treated as an individualized phenomenon. Certainly, we have learned a great deal about the developmental risks of perceived prejudice on the individual level. Much of this evidence is specific to one kind of manifestation of prejudice—discrimination perceived by individuals as arising due to *their own race/ethnicity*. This perception is associated with emotional distress (Benner & Graham, 2013; Huynh & Fuligni, 2010; Sellers, Copeland-Linder, Martin, & Lewis, 2006) and less positive school outcomes (Benner & Kim, 2009; Smalls, White, Chavous, & Sellers, 2007). Similar patterns have been found for prejudice related to other social positions of adolescents, including their family socioeconomic status, immigrant status, sexuality, and physical appearance (Crosnoe, 2009; Crosnoe, Mueller, & Frank, 2008; Russell, Seif, & Truong, 2001). Clearly, then, when individual youth feel as though they are being mistreated because of something about themselves, they are at risk in many ways.

Little is known, however, about perceived prejudice on the school level, which is a potentially valuable complement to the individual-level inquiry summarized briefly above, as it points to new ways that perceptions of prejudice might factor into adolescent development and expands conceptualization of schools as developmental ecologies. Prior

work on school equity suggests that achievement gaps persist when schools fail to address disparities in educational resources tied to school race/ethnic and socioeconomic composition (Lee & Wong, 2004). We extend this attention to equity and disparities by focusing on school climate. A school may be characterized by the prevalence of perceptions of prejudice among students on a continuum from rare to pervasive. Those aggregate perceptions may or may not reflect the perceptions of any one adolescent in the school, and they may or may not be related to the same attributes (e.g., race among some, sexuality among others). What matters is the prevailing perceptions in the school, as prior research shows that perceptions of schoolwide norms are particularly potent for students' behaviors (Kumar, O'Malley, Johnston, Schulenberg, & Bachman, 2002).

Thus, the primary goal of this study is explore whether the developmental significance of perceiving peer prejudice on the individual level extends to the school level. To do so, we first capture adolescents' perceptions of whether the students in their schools are prejudiced or not. In doing so, we recognize that adolescents can view their schools as being filled with students who are prejudiced against them personally (i.e., people in my school do not like people like me) or who show signs of prejudice far more generally (i.e., people in my school discriminate against all sorts of people). Next, we gauge how many other students in the school share the adolescents' perceptions. Doing so can capture schools in which few adolescents see their school peers as prejudiced as well as schools in which most adolescents agree that their school peers are prejudiced against them and others. The latter kind of school is seemingly low in trust and cohesion in ways that would disrupt the transmission of and access to resources and supports (Crosnoe, 2011). This work also extends the rather extensive body of research on school climate, which typically focuses on feelings of connectedness and belonging, fairness of rules, and interpersonal relationships at school (Cohen, McCabe, Michelli, & Pickeral, 2009). We then link shared perceptions at the school level to youths' academic achievement and feelings of social integration at school.

Variations in the Experience of Attending "Prejudiced" Schools

Although schools may differ in the extent to which students characterize them as housing prejudice, even students in the same school may differ markedly in the degree to which they are affected by this context. Some youth may be untouched by what is going on around them, whereas others may be particularly vulnerable. A secondary goal of this study, therefore, is to explore such variation in the link between perceived prejudice on the school level and adolescent educational outcomes on the individual level. We pursue this goal in two complementary ways. The first is social psychological, in that it concerns agreement between individual and collective realities. The second is sociodemographic, in that it concerns the varying experiences across diverse segments of the student population that likely differ in how they see and are affected by prejudice around them.

First, in considering how perceptions of prejudice are linked at the individual and collective levels, the ideas of congruence, fit, or match are critical. Ample evidence suggests that school peers are a standard of comparison for adolescents and that evaluating themselves vis a vis school peers is how adolescents tend to gauge their self- and social worth (Bearman & Bruckner, 2001; Crosnoe, 2009; Dornbusch, 1989). Thus, how aligned adolescents are with

others at school is important to understanding their functioning in schools. This student-school match idea goes by many names and is central to many theoretical models, including the looking glass self and the frog pond effect (Cooley, 1902; Marsh & Hau, 2003). In short, greater alignment between adolescents and the student body of their schools facilitates social integration, leads to more consistent self and social comparisons, and reduces opportunities for differential treatment (Bearman & Bruckner, 2001), and as a result, "effects" of adolescent characteristics can change in magnitude or even direction depending on their prevalence in the school. In many cases, mismatches—whether arising from sociodemographic characteristics, body size, or isolation—contribute to compromised adjustment when such characteristics are rare in the larger context (Anderman, 2002; Goldsmith, 2004). In relation to the current study, if adolescents perceive prejudice among school peers but are in schools in which most of their fellow students do not feel this way, then the risks of perceived peer prejudice should be stronger. In this case, an adolescent will be singled out, making such perceptions more difficult to dismiss or rationalize. But if adolescents do not perceive prejudice among school peers yet are in schools in which most of their fellow students do, any benefits of seeing one's school as free of prejudice should be weaker. In this case, adolescents may avoid the damage of perceived prejudice but would still be attending a school with a negative socioemotional climate that could pose other risks. These scenarios align with the larger person-process-context model that informs our study, placing primacy on how matches and mismatches can have variable effects on adolescent well-being.

Second, the significance of attending schools in which perceptions of prejudice are common is unlikely to be same across diverse groups of adolescents. In highlighting the importance of context, the ecological perspective acknowledges that the same context can be experienced differently based on an individual's social address (e.g., SES, race/ethnicity) and biopsychological assets and liabilities (e.g., temperament; Bronfenbrenner & Morris, 1998). In these person-process-context interactions, the characteristics of the developing person can elicit certain responses from socializing agents in proximal contexts and provide a lens for understanding one's interactions and place in those contexts. We know from past research that some youth are more vulnerable to being targeted by prejudice (e.g., race/ethnic or sexual minorities, low-income or immigrant youth, overweight/obese youth) and can suffer from such mistreatment (Carr & Friedman, 2005; Suárez-Orozco & Suárez-Orozco, 2001; Toomey, Ryan, Diaz, Card, & Russell, 2010). We extend this line of research by suggesting that youth vulnerable to group-level social stigmatization have more precarious positions in the stratification systems that exist in schools and the larger society and that this precariousness might raise the stakes of such prejudice when experienced. We expect that these youth, who have heightened risks of perceived prejudice on both the individual and school levels, may experience greater academic disadvantages when they belong to a group typically targeted by prejudice.

Method

Data and Sample

Add Health is a nationally representative study of adolescents in grades 7-12 in 1994 created with a multistage, stratified, school-based, cluster sampling design (Harris et al., 2003). All high schools not including 7th and 8th grades were matched to a feeder school based on the number of students moving through the feeder pattern. The final sample included 132 schools. In-School Surveys, intended to create a sampling frame for later data collections and to identify respondents for planned oversamples, were collected in each school during the 1994-95 school year from all available students ($N = 90,118$). A nationally representative sample ($N = 20,745$) drawn from the In-School Survey served as the core sample for the In-Home Interview, with Wave I data collection occurring within the same school year as the In-School Survey and Wave II occurring a year after Wave I. Of note is that Add Health dropped Wave I seniors from Wave II sampling. In total, 14,736 Wave I 7th through 11th graders participated in both waves. Information was also collected at Wave I from a school administrator.

Inclusion in the analytical sample was based on participation in the In-School Survey, the data collection from which the prejudice indicator was drawn, and having valid sampling weights, which are necessary to correct for the design effects of Add Health and account for differential attrition (Chantala & Tabor, 1999). The Wave II sample filter meant that no Wave I graduating seniors could be included. Applying these filters resulted in a study sample of 9,765 adolescents in 125 schools ($M_{age} = 15.1$, range: 11-20). The sample was 52% female and racially/ethnically diverse (52% White, 22% African American, 16% Latino, 7% Asian American, 3% other race/ethnicity). Table 1 provides basic demographic characteristics for the adolescents and their schools.

Measures

Independent variables were drawn from the In-School Survey, as were the majority of the demographic covariates. Outcomes were drawn from the Wave I and II In-Home Interviews. Table 1 presents univariate statistics for the primary constructs.

Perceived peer prejudice at school—In the In-School Survey, adolescents rated their agreement—1 (*strongly disagree*) to 5 (*strongly agree*)—with the statement: "The students at this school are prejudiced." We aggregated perceived prejudice ratings for all adolescents in a given school to obtain a schoolwide average. A second school-level measure of perceived prejudice captured the proportion of adolescents in the school who indicated high levels of perceived peer prejudice (i.e., those agreeing or strongly agreeing that students in their school were prejudiced; 35% per school, on average, ranging from 13% to 62%).

Recall that one goal of this study was to examine the interplay of individual- and school-level measures of perceived peer prejudice at the school. Consequently, we created a variable to characterize the match between adolescents' perceptions of peer prejudice at school and the perceptions of their schoolmates. Student-school discrepancy scores were calculated by subtracting the schoolwide perceived prejudice mean from each adolescent's

individual-level prejudice perception value (M = -.04, SD = 1.11). These scores were continuous, with higher (positive) scores indicating that adolescents perceived more prejudice in their schools than their schoolmates and lower (negative) scores indicating that schoolmates perceived more prejudice than the adolescent. These discrepancy score essentially gauged the magnitude of divergence between adolescents and their schoolmates.

School attachment—Adolescents' school attachment was assessed with three items: feel close to people at your school, feel like you are a part of your school, and happy to be at your school (Johnson, Crosnoe, & Elder, 2001). Ratings, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), were averaged across items (α= .78 and .79 at Waves I and II, respectively).

Academic performance—Adolescents reported their grades in the four core-content areas (English, mathematics, social studies, science) in Waves I and II. Ratings ranged from 1 (*D/F*) to 4 (*A*) and were averaged across subjects and then converted to a standard four-point composite grade point average (GPA).

Markers of populations vulnerable to stigmatization—We included several markers of populations vulnerable to stigmatization that could be tied to adolescents' perceptions of prejudice. Adolescents reported their race/ethnicity (African American, Latino/a, Asian American, White), generational status (first, second, and third-plus generation), and same-sex attraction (female reporting "ever having a romantic attraction to a female" or male reporting "ever having a romantic attraction to a male"). We calculated the body mass index (BMI; Cawley, 2001) as a function of adolescent-reported weight and height (BMI = weight (pounds) / height (inches)^2 * 703) and then used weight by age by gender tables from the Center for Disease Control and Prevention (2002) to identify adolescents at risk of obesity. Those in the 85th percentile or above in BMI for their age-gender group were identified as overweight. Socioeconomic status was based on Wave I parent reports of household rosters and total household income compared to 1994 federal thresholds for the poverty line (e.g., the threshold for a family of four was $15,141). Income-to-needs ratios were calculated for each family based on how far their household income was from the federal poverty line for a family of their size.

Individual- and school-level covariates—For controls on the individual level, adolescents reported their gender, age, family structure (1 = *adolescent lived with both biological parents*, 0 = *other family composition*), and parent education (1 = *8th grade or less*, 9 = *professional training*, averaged across parents as available). At the school level, we included measures of sector (1 = *public*, 0 = *private*), level (1 = *high school only*, 0 = *other school structure*, such as middle school/junior high or combined junior-senior high school), size, region (west, midwest, south, northeast), and urbanicity (urban, rural, suburban). We computed the percentage of minority students at the school by subtracting from 100% the percent White students at the school; we measured schoolwide levels of 1st or 2nd generation immigrants, overweight students, students with same-sex attraction, and students from disadvantaged families by aggregating data from the individual level.

Overview of Analysis

All analyses were conducted in M*plus* v7 (Muthén & Muthén, 1998-2010). The multilevel models employed Add Health longitudinal sampling weights, which accounted for threats to representativeness through differential attrition and oversamples. All models used TYPE = TWOLEVEL, which addresses violations to independence assumptions related to the multilevel nature of the data (i.e., students nested in schools), thereby achieving robust standard errors. The current dataset included some missing data. Overall, we observed very little missing data for perceptions of prejudice (11.9%), school attachment (0.1% at W1, 5.1% at W2), and GPA (0.9% at W1, 6.1% at W2). We used multiple imputation in M*plus* to create 20 imputed data sets, per the recommendation of Enders (2010). All analyses drew on the 20 imputed data sets and used pooled parameter estimates and standard errors across the imputed data sets.

To determine the predictors of prejudice at the school level, schoolwide prejudice prevalence scores (proportion of students at the school who believe their schoolmates are prejudiced) were regressed on the markers of vulnerability to stigmatization and the individual and school controls. We repeated these descriptive analyses looking at adolescent-reported prejudice as well as the student-school perceived prejudice discrepancy scores.

The multilevel stepwise analyses then occurred in three steps. First, we conducted a set of hierarchical regression models to explore how schoolwide prejudice prevalence was related to our three outcomes. The schoolwide prejudice prevalence levels along with the markers of vulnerability to stigmatization and the individual and school controls were included in the model. Second, to ensure that any observed significance of school-wide prejudice prevalence was not merely a reflection of adolescents' own perceptions, we then added adolescents' individual perceptions of prejudice. Both outcomes were examined simultaneously. The autoregressive structure of the models limited the influence of unobserved confounds by accounting for earlier scores on each outcome measure (Wave 2 outcomes regressed on Wave 1 outcomes; Berger, Bruch, Johnson, James, & Rubin, 2009). Third, the potential for the significance of school-wide prejudice prevalence levels to vary as a function of adolescents' own perceptions was explored. An interaction between the adolescent and school prejudice measures was tested.

Our next set of models examined possible implications of *discrepancy* between adolescent and schoolwide perceptions of peer prejudice. One test examined the prejudice discrepancy scores, the second the discrepancy group variables. Both analyses included the markers of vulnerability to stigmatization and the individual and school controls. As in the initial models, we included autoregressive paths for each outcome simultaneously.

The final set of models examined the potential for the significance of perceptions of prejudice at the individual or schoolwide levels to *vary* across key groups. Separate models were conducted for each marker of vulnerability to stigmatization (e.g., race/ethnicity, same-sex attraction). Each model included main effects for individual and schoolwide perceived prejudice as well as interactions between each prejudice measure and the target marker of vulnerability.

Results

Perceived Prejudice at School on Two Levels

As an initial step, models were estimated to identify the significant predictors of schoolwide prejudice prevalence rates, adolescents' own perceptions of prejudice at school, and student-school discrepancy scores (i.e., difference between adolescents' perceptions of prejudice at school and the school-wide average). Table 2 presents these results.

Beginning with the schoolwide peer prejudice prevalence rates (see left column of Table 2), public schools and high schools had significantly more students who perceived their peers as prejudiced than private schools and schools that included middle school students. Schools with a greater minority representation had fewer students who perceived their peers as prejudiced. Finally, school-wide prejudice prevalence rates increased with school size.

For predictors of the individual-level perceived peer prejudice measure (see center column of Table 2), older adolescents perceived more prejudice among peers at school than younger adolescents. Interestingly, African American youth were less likely than Whites to perceive prejudice among school peers. No other race/ethnic differences emerged. Overweight adolescents and those reporting same-sex attraction were more likely to perceive prejudice among school peers. No other differences emerged by markers of populations vulnerable to stigmatization. As for school characteristics, adolescents were less likely to perceive their school peers to be prejudiced in schools with more non-White students. Most effects were small (range: .03 to .08), but we observed an effect size of about 16% of a standard deviation in adolescents' perceptions of peer prejudice at school for every one-year increase in age.

Turning to the student-school discrepancy scores (see right column in Table 2), older adolescents, overweight adolescents, and those reporting same-sex attraction had significantly higher discrepancy scores (i.e., they perceived more prejudice among school peers than the average student in their schools). African Americans had significantly lower discrepancy scores than White adolescents; that is, African Americans perceived less prejudice among schoolmates (relative to their peers) than the average White student in their schools. All effect sizes were small (maximum = .07). Adolescents attending high schools and schools with fewer minority students had significantly lower student-school discrepancy scores than those attending schools serving middle school students and schools with more minority students.

In sum, these analyses revealed that older adolescents were more likely to perceive their schoolmates to be prejudiced and that there was a greater discrepancy between these adolescents' perceptions of prejudice at school and the average levels of perceived prejudice at school among their schoolmates. An identical pattern appeared for White adolescents (compared to African Americans), adolescents expressing same-sex attraction, and overweight adolescents. The race/ethnic composition of schools also seemed to matter. In schools with fewer minority students, adolescents perceived more prejudice among school peers and average school-wide levels of perceived prejudice were higher. This preliminary descriptive information is important, as knowing which kinds of schools tend to house

students with widespread perceptions of prejudice and which kinds of adolescents tend to perceive prejudice at school provides methodological insights into possible selection effects tied to students and schools.

Perceived Prejudice and Adolescent Outcomes

In exploring the potential significance of perceived peer prejudice at the school and individual level, the first set of multilevel models used stepwise regression to examine how schoolwide perceptions of peer prejudice and adolescents' own perceptions were related to GPA and school attachment both independently and conjointly. Results are presented in Table 3. The outcome variables were moderately correlated with one another ($r = .22$, $p < .001$).

The first step of the multilevel models examined the possible consequences of schoolwide prejudice prevalence rates for adolescents' academic outcomes (see upper portion of Table 3). For grades in school, we found that schoolwide levels of prejudice were negatively related to GPA. When adolescents were in schools in which many classmates perceived peer prejudice, they had lower GPAs, controlling for markers of vulnerability to social stigmatization, individual and school characteristics, and prior GPA. The effect size for the link between schoolwide prejudice and GPA was larger than all other covariates with the exception of GPA at wave 1. School attachment showed a different pattern. In the fully controlled model, schoolwide perceptions of peer prejudice were unrelated to how attached adolescents felt to their schools.

The second step of the hierarchical models attempted to link adolescents' own perceptions of peer prejudice to their school outcomes, taking into account perceptions of peer prejudice at the school level as well as markers of vulnerability to social stigmatization, individual and school characteristics, and prior measures of the outcomes. As shown in the middle portion of Table 3, adolescents' own perceptions of peer prejudice were unrelated to GPA, although we did observe a persistent relation between schoolwide peer prejudice and GPA. In contrast, we observed a significant association between individual perceptions of peer prejudice and school attachment, such that adolescents who viewed more of their peers as prejudiced felt less connected to their schools. The effect size for this association exceeded those for all markers of vulnerability to social stigmatization and the individual controls. Schoolwide peer prejudice remained unrelated to school attachment in this model.

Variations by Student-School Match

We next examined matches and mismatches in perceptions of peer prejudice across adolescents and their schools in two ways. First, in the hierarchical models, we introduced a student-by-school perceived prejudice interaction term. As seen in the bottom portion of Table 3, these interactions were nonsignificant for both GPA and school attachment.

A second set of models focused on student-school discrepancy scores, gauging continuously how different adolescents were from their schoolmates in the prejudice they saw among peers at school (see upper portion of Table 4). After accounting for various vulnerabilities to social stigmatization as well as individual and school characteristics and earlier measures of

the outcomes, these models revealed that the discrepancy between adolescents' perceptions of peer prejudice at school and the average level of perceived prejudice reported by schoolmates was associated with school attachment but not school performance. As adolescents' perceptions of peer prejudice exceeded those of their fellow students, they felt less attached to their schools, such that a one unit increase in this discrepancy score was associated with a decline in school attachment of about 6% of a standard deviation. Although not large, this effect size exceeded that of all markers of vulnerability to social stigmatization as well as the individual covariates.

Although we interpreted the discrepancy score results as suggesting particular detriments for adolescents whose perceptions of peer prejudice exceeded those of their schoolmates, these results also suggest the possibility that having perceptions of prejudice that essentially underestimate the prejudice of peers might be beneficial. To test this possibility, we created two dummy variables capturing distinct discrepancy groups. One discrepancy group consisted of those adolescents whose perceptions of peer prejudice substantially exceeded those of their schoolmates (i.e., adolescents whose discrepancy scores were 1 *SD* or more above the mean; cutoff selected per recommendations in Aiken & West, 1991). A second discrepancy group consisted of adolescents whose perceptions of peer prejudice were substantially lower than those of their schoolmates (i.e., adolescents whose discrepancy scores were 1 *SD* or more below the mean). The reference group included adolescents who did not differ substantially from their schoolmates in perceived peer prejudice (i.e., students within 1 *SD* of the mean discrepancy score). As seen in the lower portion of Table 4, GPA did not differ across discrepancy groups, after taking into account the markers of vulnerability to social stigmatization and the individual and school controls. In contrast, we observed a significant association with school attachment only for those students whose perceptions of peer prejudice substantially exceeded that of their schoolmates—for these students, the mismatch between their own perceptions and schoolwide perceptions resulted in lower attachment to school.

Variation Across Vulnerable Populations

Our final aim explored whether the links among schoolwide and individually-perceived peer prejudice and academic outcomes varied by key markers of vulnerability to social stigmatization, specifically race/ethnicity, immigrant status (immigrant or child of immigrants as compared to native born youth with native born parents), socioeconomic disadvantage (adolescents in families below 185% of the poverty threshold as compared to more advantaged families; Capps et al., 2005), same-sex attraction, and overweight status. Interactions were included for each marker of vulnerability and the schoolwide and individual prejudice measures. Due to the large number of interactions tested, we used a Bonferroni adjustment to identify a family-wise error rate (28 tests, $p < .002$; Shaffer, 1995). Table 5 presents the results.

In general, interactions revealed more similarities than differences. We observed no differences in the associations of either individual or schoolwide perceptions of peer prejudice with GPA or school attachment by race/ethnicity, immigrant status, socioeconomic disadvantage, or overweight status. Although the interaction between same-

sex attraction and individually perceived prejudice did predict school attachment ($p < .05$), the significance level did not exceed the family-wise rate ($p < .002$).

Discussion

Perceived prejudice is a social psychological phenomenon, and, as such, it connects the self to others in ways that are often quite subjective and open to interpretation. It encompasses personal experiences as object, subject, and witness of prejudice, both in terms of being a victim or seeing others as victimized. Thus, perceived prejudice can characterize institutional settings that people navigate everyday even if they are not directly subject to prejudiced actions. In those cases, the power of perceived prejudice is not about one's own mistreatment, but instead about the trust and suspicion they see around them, which can hurt regardless of what is happening to an individual personally. Consequently, an adolescent's perception about peer prejudice at school is important for what it says about him or her and for what it says about the school in which he/she spends so much time. This argument speaks to the value of assessing schools in terms of their general socioemotional climate, not just in terms of curriculum and funding. Of course, recognizing that perceptions of prejudice at school can be individualized or generalized suggests the need to also explore the ways that school-level and individual-level perceptions reinforce, magnify, and influence each other. An exploration of such person-process-context interactions was the goal of this study, a goal that becomes more important with the increasing diversity of the population, visibility of gays and lesbians, obesity rates, and other population trends that affect ideas about difference and inclusiveness in youth culture (Crosnoe, 2011).

Overall, the patterns observed suggest that a negative school climate (e.g., the majority of students view their peers as prejudiced) was problematic for adolescents' academic performance. In contrast, individual perceptions of peer prejudice were more problematic for adolescents' emotional attachments to their schools, and the discrepancy results suggest that these individual perceptions of prejudice seemed particularly detrimental when adolescents' perceptions of peer prejudice substantially exceeded those of their schoolmates. Patterns were similar across numerous markers of vulnerability to social stigma, suggesting that perceptions of prejudice were challenging for adolescents regardless of the attributions they made regarding the target of their schoolmates' prejudice. To follow, we delve into the key findings more comprehensively.

To begin, older adolescents, White (as compared to African Americans) adolescents, adolescents reporting same-sex attraction, and overweight youth were more likely to report peer prejudice at school. That African American students reported less peer prejudice at school than White students was unexpected, although previous research suggests that African American youth tend to report lower levels of peer discrimination than other race/ethnic minority youth, perhaps in part due to their confidence in maintaining cross-ethnic friendships (Rosenbloom & Way, 2004). This race/ethnic difference in perceived prejudice also may have been driven, in part, by variations in interpretations of prejudice. Whereas race/ethnic minority youth may attribute the term "prejudice" to mistreatment due to an individual's race/ethnicity (given both salience and personal experience), White students, who in the current sample tend to attend schools with large proportions of same-race peers,

may instead be operationalizing the term prejudice to refer to attributes outside race/ethnicity. Such attributes could include sexual minority status and weight, which were predictors of individual perceptions of peer prejudice. Also possible, however, is that White students' attributions regarding peer prejudice were racialized. Some White students in the sample attended more diverse schools or schools with greater concentrations of minority students. In such racially/ethnically incongruent contexts where Whites are not the numerical majority, identity exploration is often more common, making race/ethnicity more salient (French, Seidman, Allen, & Aber, 2000). Combined with evidence from the adult discrimination literature that documents White males' feelings of victimization attributed to reverse discrimination and affirmative action (Pincus, 2003), White students' attributions of peer prejudice could possibly be at least in part driven by race-based experiences.

Additionally, perceived prejudice by peers tended to be higher, both at the individual and collective levels, in schools with fewer race/ethnic minority youth. Although school diversity has a range of benefits for adolescents and young adults (Gurin, Dey, Hurtado, & Gurin, 2002; Tam & Bassett, 2004), it is not without its drawbacks, particularly for adolescents' perceptions of racism and discrimination (Benner & Graham, 2011; Seaton & Yip, 2009) and negotiation of interracial interactions (Richeson & Shelton, 2007). As school diversity increases, representation of any individual group is probabilistically going to be lower. As such, a student's same-race/ethnic representation will decline, as will the benefits of being in a numerically larger group (Linn & Welner, 2007). Previous research has suggested that diversity benefits are maximized when students have more same-race/ethnic peers (Benner & Crosnoe, 2011), and the findings reported here add to the call for more work on diversity and critical mass.

In addition to understanding the correlates of adolescents' perceptions of peer prejudice, we also examined what factors were related to more widespread perceptions of peer prejudice at the school level. We observed higher rates of perceived peer prejudice in public schools (versus private), high schools (versus schools include middle school students), larger schools, and schools serving fewer minority students. In more intimate learning contexts, students often report feeling less victimized and more integrated into their school settings (Anderman, 2002; Gottfredson & DiPietro, 2011). Our findings suggest that smaller educational settings may similarly encourage more inclusive and accepting school climates in which peer prejudice is the exception rather than the norm. Thus, educational policy efforts promoting smaller learning communities may have added benefits beyond promoting student achievement.

Moving to the youth outcomes, when schools were characterized by high average levels of perceived prejudice, adolescents' grades suffered regardless of their own individual perceptions. These findings suggest the potential significance of negative school environments. Such environments may reflect larger issues at the school that go beyond peer relations into the learning environment. To the extent that rampant perceptions of peer prejudice reflect discord among students, teachers may have to devote greater instructional time to classroom management, resulting in less time on academic skills and greater academic challenges among students (see Emmer & Stough, 2001 for review). Another possibility is that students in negative school environments where students do not get along

and tend to view each other suspiciously may respond by disengaging from school, including attending school less regularly to avoid an unpleasant environment. Poor attendance and other manifestations of school disengagement, in turn, have been consistently linked to lower academic progress, from poorer grades to decisions to drop out of school (Fredricks, Blumenfeld, & Paris, 2004).

Unfortunately, we cannot ascertain with the current data whether the environment was truly negative, with high levels of discrimination and prejudice, or whether the school simply enrolled a large number of students who were particularly sensitive (where perceptions of prejudice spread through a contagion effect). We also cannot determine the mechanisms by which negative environments translate into poorer academic performance among students. Data integrating network reports, more detailed surveys on prejudice with stronger measures, and qualitative data to dig into the nuances of prejudice and peer dynamics would be ideal for this enterprise, but such data do not exist to our knowledge. The findings reported here are exploratory in nature, but they represent an important first step in understanding the implications of negative school environments for individual well-being. Future studies, with new data sets that provide richer individual and school census data on perceived prejudice and discrimination will be necessary to replicate and extend the findings reported here. Our study, however, extends the extensive literature on school climate (see Cohen et al., 2009 for review), highlighting an aspect of schools—perceptions of prejudice —that is not typically examined but that has clear implications for students' academic performance.

Although the collective perceptions of peer prejudice at school mattered for academic performance, individual perceptions were detrimental to adolescents' feelings of school attachment. Such perceptions may be driven by individual experiences or observations (e.g., mistreatment by certain peers; Juvonen & Galván, 2008), but specific school practices also may heighten adolescents' awareness of and sensitivity to potential mistreatment. For example, secondary schools in the U.S. often implement academic tracking practices that can make race/ethnicity and SES more salient (Oakes, 2005), and research shows that adolescents recognize the unfair distribution of students into different academic tracks (Goldsmith, 2004). As a result, adolescents may be more sensitive to signs of discrimination and prejudice within the school context, including differential treatment by peers who may (or may not) be in different academic tracks. More generally, academic competitiveness could foster perceptions of prejudice by intensifying in-group/out-group dynamics in diverse environments. Such phenomena could make the academic inequalities observed in the U.S. educational system (Farkas, 2003) worse over time, lending further import to the critical nature of this issue.

In addition to the more global observations regarding the implications of individual and collective perceptions of prejudice at school, we posited that mismatches between adolescents and their fellow students would be especially problematic for youth, a hypothesis supported by the analyses. Specifically, we found that adolescents' feelings of belonging and connectedness to their schools suffered more when adolescents' own perceptions of peer prejudice exceeded those of their schoolmates. These results are in concert with other work that suggests particularly potent effects of victimization for

adolescent development when mistreatment is not the norm in a given school or classroom (Bellmore et al., 2004).

The gradient effect we observed here is in line with cumulative disadvantage perspectives posited by both sociologists (Elder, 1998) and developmental psychologists (Sameroff, Seifer, Baldwin, & Baldwin, 1993). Future research should explore possible protective factors that might shield adolescents from the ill effects of being in such negative environments, such as school clubs that promote inclusion (e.g., gay-straight alliances; Toomey, Ryan, Diaz, & Russell, 2011) or safer contexts for students at risk for marginalization to connect with others and pursue their own forms of achievement (e.g., fine arts and academic clubs for obese students; Crosnoe, 2011). Moreover, our findings suggest that prejudice intervention and prevention efforts cannot simply target the victims or aggressors of prejudice and discrimination, as knowledge of prejudice without personal experiences of mistreatment is also harmful for adolescents' development. Schools must be sensitive to the degree to which perceptions of prejudice pervade the educational community (across students and educators), and widespread efforts to target mistreatment and reduce stigmatization may be one such intervention avenue. Prior work suggests that a more equitable educational community can be fostered by school administrators and teachers engaging in purposeful conversations and learning about race (Theoharis & Haddix, 2011). Intervention and prevention efforts targeting prejudice and school climate may equally benefit from similar activities expanded to target multiple social identities beyond race/ ethnicity and include students as well as educators in conversations and learning.

Finally, we sought to capitalize on the vagueness of the prejudice measure by exploring how numerous markers of vulnerability to stigmatization might be related not only to perceptions of prejudice by adolescents' peers but also how the consequences of perceived peer prejudice at the school and individual level might vary according to various characteristics tied to marginalization. That we found no variation in the consequences of school- and individual-level perceived prejudice for adolescents' academic outcomes highlights the pernicious effects of prejudice, regardless of the attributions made for why peers are prejudiced.

That said, the measurement of prejudice has two limitations. First, Add Health included only a single item that related to perceptions of prejudice around the adolescent but not necessarily about the adolescent. As such, it cannot be ascertained whether the adolescents is a victim or witness of peer prejudice. Given neighborhood research showing that children who witness racial discrimination directed at others experience poorer psychosocial outcomes (Simons et al. 2002), we would expect this general perception of peer prejudice at the school to be relevant for adolescents' development regardless of whether the prejudice is personally experienced. Second, peer prejudice in Add Health is a general measure, and, as phrased, adolescents could make a variety of attributions regarding the reason for peer prejudice (e.g., race/ethnicity, sexual minority status). Although this is an inherent limitation in the measure, the fact that we examined variation in the observed effects of this measure across groups that likely reflect these attributions is important, and we observed more similarity than difference across these groups. As such, although we believe that integrating person-process-context interactions is a key contribution of this study, our findings should

still be considered exploratory. Future work should use more source- and attribute-specific measures of prejudice and those about directly experienced prejudice to determine whether the associations observed here persist. The innovation of the research presented here is modeling a phenomenon typically considered at the individual level to instead capture school-level climate; schools are communities of learners, and the findings reported here clearly illustrate how the perceptions of the larger community have implications for the individual members of the collective. In this way, our study represents a critical first step in understanding how perceptions of prejudice contribute to the negativity of school cultures and the implications for adolescents' well-being.

Acknowledgements

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Table 1

Characteristics of Adolescents and Their Schools

Variable	Frequency (%)	*M*	*SD*
Primary construct of interest			
Adolescent perceived prejudice		3.12	1.15
Schoolwide perceived prejudice (mean)		3.13	0.35
Schoolwide perceived prejudice (percent)		35.83	11.13
Prejudice discrepancy score		−0.04	1.11
School attachment (Wave II)		3.72	0.86
GPA (Wave II)		2.80	0.76
Markers of Vulnerability to Stigmatization			
Race/ethnicity			
White	51.9		
African American	22.1		
Latino	16.0		
Asian American	7.2		
Other race/ethnicity	2.7		
Immigrant status (1st/2nd generation)	22.0		
Same-sex attraction	5.4		
Overweight	26.7		
Socioeconomic disadv. (185% poverty line)	30.8		
Adolescent Covariates			
Female	52.2		
Age		15.14	1.50
Live with both biological parents	54.9		
Highest parent education		2.97	1.24
School Covariates			
Private school	8.8		
High school	39.2		
Enrollment		879.10	705.79
Percent minority students		44.05	30.09
Percent immigrant students		16.35	19.46
Percent sexual minority students		5.51	3.90
Percent overweight students		26.52	8.17
Percent disadvantaged students		30.64	20.32

Note. School characteristics are at the school level ($N = 125$). All other variables are at the student level ($N = 9,765$). Schoolwide perceived prejudice = average perceived prejudice scores for all students in the school. Prejudice discrepancy score = adolescent perceived prejudice – schoolwide prejudice. Descriptive statistics based on randomly selected dataset of the 20 imputed datasets (impute9).

Table 2

Predictors of Student-Level Perceived Prejudice, School-Level Perceived Prejudice, and Student-School Perceived Prejudice Discrepancy Scores

Predictor	School-Level Perceived Prejudice (mean)	Student-Level Perceived Prejudice	Student-School Perceived Prejudice Discrepancy Score (continuous)
	ß (SE)	ß (SE)	ß (SE)
Adolescent Characteristics			
Female		.00 (.02)	.00 (.02)
Age		.16 (.02)***	.14 (.02)***
Highest parent education		.01 (.02)	.00 (.02)
Two biological parent family		−.03 (.02)	−.03 (.02)
Markers of Vulnerability to Stigma			
Race/ethnicity			
Latino		−.01 (.02)	−.01 (.02)
African American		−.08 (.02)***	−.07 (.02)***
Asian American		−.01 (.03)	−.02 (.03)
Other race/ethnicity		.02 (.01)	.01 (.02)
Immigrant status		.02 (.02)	.03 (.02)
Sexual minority status		.03 (.02)*	.04 (.02)*
Overweight status		.03 (.01)*	.03 (.01)*
Socioeconomic disadvantage		.01 (.02)	.01 (.02)
School Characteristics			
Private school	−.15 (.07)*	−.17 (.11)	−.00 (.12)
High school	.29 (.08)***	.01 (.11)	−.46 (.10)***
Enrollment	.26 (.09)**	.19 (.12)	−.20 (.13)
Percent minority students	−.58 (.10)***	−.41 (.18)*	.46 (.16)**
Percent immigrant students	.05 (.10)	−.11 (.15)	−.33 (.17)
Percent sexual minority students	.10 (.07)	.19 (.10)	.15 (.12)
Percent overweight students	.07 (.07)	.17 (.12)	−.02 (.13)
Percent disadvantaged students	.11 (.09)	.03 (.17)	−.00 (.18)

Note. Adolescent race/ethnicity reference group is white students. School structure reference group is combined junior-senior high school. $N = 9,765$ for student-level perceived prejudice and student-school perceived prejudice discrepancy score. $N = 125$ for school-level perceived prejudice. **Results based on pooled estimates across 20 imputed datasets.**

***
$p < .001$.

**
$p < .01$.

*
$p < .05$.

Table 3

Relationships Between Perceived Prejudice and Adolescents' Outcomes

	Grades in School ß (*SE*)	School Attachment ß (*SE*)
Step 1		
Schoolwide perceived prejudice (proportion)	−.34 (.12)**	−.22 (.13)
Wave 1 outcome	.61 (.01)***	.53 (.01)***
Age	−.00 (.02)	−.02 (.02)
Highest parent education	.05 (.01)***	.03 (.01)
Two biological parent family	.03 (.01)*	.03 (.01)**
Female	.07 (.01)***	−.03 (.01)*
Latino	−.05 (.02)**	−.03 (.02)
African American	−.06 (.01)***	−.04 (.02)*
Asian American	.03 (.01)	−.00 (.01)
Other race/ethnicity	−.02 (.01)	−.02 (.02)
Immigrant status	.01 (.02)	.03 (.02)
Same-sex attraction	−.02 (.02)	−.02 (.01)
Overweight	−.00 (.01)	.01 (.01)
Socioeconomic advantage	−.01 (.01)	.02 (.02)
Private school	.06 (.11)	.11 (.11)
High school	.29 (.14)*	−.03 (.13)
Enrollment	−.10 (.14)	−.33 (.14)*
Percent minority students	−.26 (.16)	−.05 (.18)
Percent immigrant students	.10 (.16)	−.06 (.17)
Percent sexual minority students	.14 (.19)	.05 (.11)
Percent overweight students	−.01 (.18)	.40 (.12)***
Percent disadvantaged students	−.15 (.22)	−.27 (.19)
Step 2		
Schoolwide perceived prejudice (proportion)	−.33 (.13)**	−.12 (.13)
Student-level perceived prejudice	.01 (.01)	−.06 (.02)***
Step 3		
Schoolwide perceived prejudice (proportion)	−.33 (.24)	.03 (.30)
Student-level perceived prejudice	.02 (.04)	−.04 (.05)
School × student prejudice interaction	−.01 (.05)	−.04 (.07)

Note. *N* = 9,765. Results based on pooled estimates across 20 imputed datasets. Effects of markers of vulnerability to stigmatization, prior measures of outcomes, and individual- and school-level controls included in each step; due to space constraints, coefficients only presented for Step 1 (coefficients rather stable over time).

***
 p < .001.

**
 p < .01.

*
 p < .05.

Table 4

Relationships Between Prejudice Discrepancy and Adolescents' Outcomes

	Grades in School ß (*SE*)	School Attachment ß (*SE*)
Discrepancy Model—Continuous Discrepancy Score		
Prejudice discrepancy score	.01 (.01)	−.06 (.02)[***]
Wave 1 outcome	.61 (.01)[***]	.53 (.01)[***]
Age	−.01 (.02)	−.01 (.02)
Highest parent education	.05 (.01)[***]	.03 (.01)
Two biological parent family	.03 (.01)[*]	.03 (.01)[*]
Female	.07 (.01)[***]	−.03 (.01)[*]
Latino	−.05 (.02)[**]	−.03 (.02)
African American	−.06 (.01)[***]	−.04 (.02)[**]
Asian American	.03 (.01)	−.01 (.01)
Other race/ethnicity	−.02 (.01)	−.02 (.02)
Immigrant status	.01 (.02)	.03 (.02)
Same-sex attraction	−.02 (.02)	−.02 (.01)
Overweight	−.00 (.01)	.01 (.01)
Socioeconomic advantage	−.01 (.01)	.02 (.02)
Private school	.11 (.11)	.14 (.11)
High school	.20 (.15)	−.11 (.14)
Enrollment	−.17 (.13)	−.38 (.14)[**]
Percent minority students	−.10 (.17)	.08 (.18)
Percent immigrant students	.13 (.16)	−.07 (.17)
Percent sexual minority students	.10 (.19)	.02 (.11)
Percent overweight students	−.04 (.18)	.37 (.13)[**]
Percent disadvantaged students	−.14 (.23)	−.25 (.19)
Discrepancy Model—Discrepancy Groups		
Prejudice discrepancy (1 *SD* or more above mean)	.00 (.01)	−.04 (.02)[**]
Prejudice discrepancy (1 *SD* or more below mean)	−.01 (.01)	.02 (.01)

Note. N = 9,765. Results based on pooled estimates across 20 imputed datasets. Effects of markers of vulnerability to stigmatization, prior measures of outcomes, and individual- and school-level controls included in for both continuous prejudice discrepancy model and discrepancy group model; due to space constraints, coefficients only presented for continuous prejudice discrepancy model (coefficients rather stable over time).

[***]
$p < .001$.

[**]
$p < .01$.

[*]
$p < .05$.

Table 5

Variation in Relationships Across Various Markers of Marginalization Status

	Interaction ß (*SE*)
Race/ethnicity	
African American × schoolwide prejudice -> school attachment	−.05 (.04)
African American × schoolwide prejudice -> GPA	−.01 (.03)
African American × student-perceived prejudice -> school attachment	.01 (.04)
African American × student-perceived prejudice -> GPA	.02 (.03)
Latino × schoolwide prejudice -> school attachment	.02 (.07)
Latino × schoolwide prejudice -> GPA	−.04 (.06)
Latino × student-perceived prejudice -> school attachment	−.05 (.08)
Latino × student-perceived prejudice -> GPA	.04 (.04)
Asian American × schoolwide prejudice -> school attachment	.02 (.05)
Asian American × schoolwide prejudice -> GPA	−.05 (.06)
Asian American × student-perceived prejudice -> school attachment	−.03 (.04)
Asian American × student-perceived prejudice -> GPA	.01 (.03)
Immigrant status (1st/2nd generation vs. 3rd or higher)	
Immigrant × schoolwide prejudice -> school attachment	.03 (.04)
Immigrant × schoolwide prejudice -> GPA	−.07 (.04)
Immigrant × student-perceived prejudice -> school attachment	−.09 (.07)
Immigrant × student-perceived prejudice -> GPA	.02 (.04)
Same-sex attraction (yes vs. no)	
Same-sex attraction × schoolwide prejudice -> school attachment	−.08 (.04)
Same-sex attraction × schoolwide prejudice -> GPA	.01 (.05)
Same-sex attraction × student-perceived prejudice -> school attachment	.08 (.04)[*]
Same-sex attraction × student-perceived prejudice -> GPA	.02 (.04)
Overweight (yes vs. no)	
Overweight × schoolwide prejudice -> school attachment	.03 (.04)
Overweight × schoolwide prejudice -> GPA	−.03 (.04)
Overweight × student-perceived prejudice -> school attachment	.01 (.04)
Overweight × student-perceived prejudice -> GPA	.03 (.03)
Socioeconomic disadvantage (poor vs/ nonpoor)	
Disadvantaged × schoolwide prejudice -> school attachment	.02 (.06)
Disadvantaged × schoolwide prejudice -> GPA	−.01 (.04)
Disadvantaged × student-perceived prejudice -> school attachment	−.03 (.06)
Disadvantaged × student-perceived prejudice -> GPA	.01 (.01)

Note. *N* = 9,765. Results based on pooled estimates across 20 imputed datasets and control for a host of covariates and Wave 1 measures of the respective developmental competency.

[***]
$p < .001$.

[**]
$p < .01$.

[*]
$p < .05$.