The intersection of school racial composition and student race/ethnicity on adolescent depressive and somatic symptoms

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Abstract

Schools are one of the strongest socializing forces in the U.S. and wield considerable influence over individuals' social and economic trajectories. Our study investigates how school-level racial composition, measured by the percentage non-Hispanic white students in a school, affects depressive and somatic symptoms among a representative sample of U.S. adolescents, and whether the association differs by race/ethnicity. We analyzed Wave I data from the US National Longitudinal Study of Adolescent Health, resulting in a sample size of 18,419 students attending 132 junior and senior high schools in 1994/5. After controlling for individual and school characteristics, our multilevel analyses indicated that with increasing percentages of white students at their school, black students experienced more depressive symptoms and a higher risk of reporting high levels of somatic symptoms. After including students’ perceptions of discrimination and school attachment, the interaction between black student race and school-level racial composition was no longer significant for either outcome. Our findings suggest that attending predominantly-minority schools may buffer black students from discrimination and increase their school attachment, which may reduce their risk of experiencing depressive and somatic symptoms.

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Introduction

Interest in understanding the potential health effects of the social and physical environment has been renewed in the past decade (Kaplan, 2004; Macintyre, Ellaway, & Cummins, 2002; Syme, 2008). Given this renewed interest, it is surprising that little research has been conducted investigating the direct health effects of school segregation, even though school segregation plays an important role in the production and perpetuation of racial and social inequities (Bourdieu, 1973; Wells & Crain, 1994). Indeed, schools are one of the strongest socializing forces in the United States (Hallinan, 2001) and wield considerable influence over individuals’ social and economic trajectories. We seek to address this limitation in our study by investigating how school-level racial composition influences depressive and somatic (i.e., physical) symptoms among a representative sample of U.S. adolescents.

Background

The school environment can have pronounced effects on students’ worldviews, their sense of belonging and identity, and their educational opportunities (Lewis, 2003; Yonezawa, Wells, & Serna, 2002). According to Bourdieu (1973), schools play a complex role in the cultural and social reproduction of social inequalities. They can also act as racializing agents, shaping the worldview of their students (Lewis, 2003). Schools convey information to students in both subtle and overt ways in terms of what race and class mean, who holds power in society, and whose knowledge and beliefs are valued and respected (Lewis, 2003; Oakes, Wells, Jones, & Datnow, 1997; Yonezawa et al., 2002). Such information is often conveyed through the power structure within the schools (e.g., whites in positions of power), the use of racial code words by school personnel and parents (e.g., “urban”, “dangerous”), the extent of attention teachers and administrators demonstrate when racial conflicts occur, and the stereotypes held by school personnel and parents (Lewis, 2003; Mickelson, 2001; Rubin, 2008). For example, Feagin, Vera, and Imani (1996) found that black college students attending predominantly-white U.S. universities reported differential treatment from professors,
students, and campus police, including but not limited to harassment, verbal assaults, and chilly classroom environments.

School policies also impact students’ perceptions of the school environment. Within racially-mixed and predominantly-white schools, black and Hispanic students are more likely than whites to be tracked into less academically rigorous coursework even at equivalent ability levels (Darling-Hammond, 2004; Mickelson, 2001; Mickelson & Everett, 2008). Students are often aware of tracking in their school, even if classes are not marked as high-ability (Oakes, 1985). Because of the interplay between social, cultural, and political processes involved in tracking decisions at the school level, tracking often results in the confinement of ability with race/ethnicity (Lewis, 2003; Oakes et al., 1997), which in turn may socialize students to accept their positions in their schools’ social hierarchy (Mickelson, 2001). Even in schools which provide some opportunity for track mobility, students who were previously tracked often do not enroll in “high-ability” courses because they have internalized the labels and status attached to them by their peers, teachers, and administrators (Yonezawa et al., 2002).

School segregation significantly impacts the distribution of key educational opportunities and advantages necessary for continued educational achievement. As compared to predominantly-white schools, predominantly-minority schools are more likely to suffer from overcrowded classrooms, utilize outdated books and supplies, offer fewer advanced placement courses, and employ less qualified teachers (Darling-Hammond, 2004; Darling-Hammond & Post, 2000; Orfield & Eaton, 1996). Students attending predominantly-minority schools are also more likely to be poor, resulting in higher levels of concentrated poverty in these schools (Orfield, 2001; Orfield & Lee, 2007).

School racial composition may therefore influence adolescent mental and physical health through at least three, potentially competing, mechanisms. First, school-level socio-economic status (SES) may mediate the relationship between school racial composition and adolescent depressive and somatic symptoms, given that predominantly-white schools are often wealthier (Rothstein, 2000), and can provide an array of educational opportunities that may be unavailable in predominantly-minority schools. To the extent that access to such opportunities keep students engaged and motivated, predominantly-white schools, with their greater access to economic resources, may enhance students’ aspirations and achievement, and in turn, promote mental and physical health. Alternatively, low SES schools, which tend to be predominantly-minority, often experience more violence and disorder than high SES schools (Massey, Charles, Lundy, & Fisher, 2003). Students attending low SES schools may therefore be exposed to greater amounts of stress, which could increase their risk for depressive (Mazza & Reynolds, 1999) or somatic symptoms (Christiansen, Copeland, & stapert, 2008; Natvig, Albreksten, Anderssen, & Qvannstrom, 1999; Rhee, Holditch-Davis, & Miles, 2005).

Second, the racial composition of the school may create an environment where some students feel valued and respected, whereas others feel marginalized and isolated because of their race/ethnicity (Reagan et al., 1996; Lewis, 2003; Yonezawa et al., 2002). In predominantly-white schools, black and Hispanic students may be exposed to or perceive more discriminatory behavior from teachers and peers. Discrimination, often considered a socially-derived stressor, can subsequently influence mental and physical health (Aneshesel, 1992); perceived discrimination has been associated with greater psychological distress (Brown et al., 2000; Williams, Van, Jackson, & Anderson, 1997), depressive symptoms (Pavalko, Mossakowski, & Hamilton, 2003; Schulz et al., 2006), and health limitations (Gee & Walsemann, 2009; Pavalko et al., 2003). Adolescents who perceive discriminatory treatment by teachers or staff are at greater risk of experiencing declining mental health (Roese, Eccles, & Sameroff, 2000). Furthermore, stress and anxiety (Christiansen et al., 2008; Natvig et al., 1999; Rhee et al., 2005) appear to increase the risk of various somatic symptoms, including headaches, stomachaches, backaches, and morning fatigue (Christiansen et al., 2008). Thus, among black and Hispanic students, perceived discrimination, which may occur more frequently at predominantly-white schools, may also impact levels of somatic symptoms by regularly exposing them to stressful and anxiety-provoking events.

Finally, school racial composition may influence students’ attachment to their schools. In general, predominantly-white schools often fail to adequately incorporate the values, interests, or history of people of color into the educational curriculum and mainstream school culture; such exclusions may lead to feelings of alienation and subsequent disengagement from school (Feagin & Sikes, 1994; Lewis, 2003). This may be one reason why black and Hispanic students often hold more optimistic and pro-school attitudes when they attend predominantly-minority schools (Goldsmith, 2004). Among traditionally disadvantaged students of color, school connectedness is relatively high in predominantly-minority schools and relatively low in racially-mixed schools (McNeely, Nonnemaker, & Blum, 2002). Given that students who feel connected to their schools are less likely to initiate smoking, get drunk, smoke marijuana, contemplate suicide, initiate sex, or engage in weapons-related violence (McNeely & Falci, 2004), attending predominantly-white schools may be associated with greater depressive or somatic symptoms among black and Hispanic students.

We examine three hypotheses in this paper. First, we hypothesize that the association between school-level racial composition and depressive or somatic symptoms varies by student race/ethnicity; black and Hispanic students will experience higher levels of depressive and somatic symptoms in predominantly-white schools than in predominantly-minority schools. Second, we hypothesize that school-level SES will mediate this relationship. Third, we hypothesize that the differential relationship between school-level racial composition and our dependent variables by student race/ethnicity will be attenuated once we account for students’ perceptions of discrimination and attachment to school.

Methods

We analyzed Wave I (1994/5) restricted data from the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative sample of U.S. adolescents in grades 7 through 12 in 1994/5 (Harris et al., 2009). The Add Health sample is representative of U.S. schools with respect to region of country, urbanicity, school size, school type (private/public), and race/ethnicity. Our analysis utilized three data sources: (1) in-home interview of the student, (2) the parent, and (3) a self-administered questionnaire completed by the school administrator. Institutional review board approval for our study was obtained from the University of South Carolina.

We restricted our analysis to students and schools who were assigned probability weights. We excluded approximately 502 students from the analysis due to item-missingness, most of which was from missingness on the questions pertaining to perceived discrimination and school attachment (n = 365). After exclusions, our final analytic sample consisted of 18,419 students (9743 non-Hispanic whites, 3909 non-Hispanic blacks, 3127 Hispanics, 1286 Asian/Pacific Islanders, 148 American Indians, and 206 of other race/ethnicity) attending 132 junior and senior high schools in 1994/5.
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