SOCIAL REPRODUCTION AND MENTAL HEALTH: INVESTIGATING THE ROLE OF SCHOOLING ON WELLBEING OVER THE LIFE COURSE

Dissertation
By
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Abstract

Social Reproduction and Mental Health: Investigating the role of schooling on wellbeing over the life course

(Under the direction of Alisa K. Lincoln, Carmel Salhi, and John L. Griffith)

Background: Educational attainment has a significant positive association with physical and mental health. Typically, this research has focused on the health benefits conferred by additional years of schooling or credentials. Recent findings suggest that facets of education including school quality and school-connectedness also have implications for health. Drawing from the theory of social reproduction and a life course perspective, we explore how stratification and socialization processes responsible for the reproduction of social inequality in schools also influence mental health and wellbeing.

Method: Using a multi-methods approach, we combine longitudinal survey data with in-depth qualitative interview data. First, using the National Longitudinal Study of Adolescent and Adult Health (Add Health), we use multilevel linear regression to examine the association between exclusionary discipline policies and depressive symptoms among students with no history of suspension or expulsion. We then examine whether this association is explained by school-connectedness. In Study 2, using the Add Health, we examine the cumulative influence of peer prejudice in adolescence with discrimination in adulthood on depressive symptoms in adulthood, and whether this association is modified by race/ethnicity. In Study 3, we use thematic analysis to analyze forty-five in-depth qualitative interviews to explore the role and meaning of schooling among public mental health service users.

Results: The first study provides evidence that exclusionary school discipline is associated with increased depressive symptoms among students with no history of suspension or expulsion and
this relationship is explained by adolescents’ sense of school-connectedness. The second study supports the cumulative burden of discrimination in adolescence and young adulthood on depressive symptoms in adulthood. In Study 3, we identified several themes that highlight the significance of stratification and socialization processes for participants’ experiences in school. These processes shaped educational expectations setting them up for poor educational outcomes and potentially influencing their social integration and wellbeing as adults.

**Conclusion:** By focusing on stratification and socialization, these findings highlight how inequality in schools manifests on mental health and wellbeing. Socialization messages and the stratification of students across schools and classrooms expose students to stressors which are often unique to more disadvantaged school contexts and disproportionately affect marginalized student populations. In light of inequities in schooling across race/ethnicity and socioeconomic status, these findings suggest that the processes of schooling have important implications for disparities in mental health status.
Dedication

For Dad and Asher
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CHAPTER 1 Introduction

The relationships among educational attainment and a variety of health outcomes have been established. Individuals with more education have lower rates of adulthood mortality (Elo & Preston, 1996; Hayward, Hummer, & Sasson, 2015; Rogers, Hummer, & Everett, 2013), better physical and mental health (Cutler & Lleras-Muney, 2010; Miech & Hauser, 2001), and engage in healthier behavior (Cutler & Lleras-Muney, 2010). The education-health gradient persists whether education is conceptualized by credentials, or by the number of years of school one has completed. However, recent scholarship argues that educational attainment is only one of the ways in which education matters for health (Walsemann, Gee, & Ro, 2013; Zajacova & Lawrence, 2018). A burgeoning literature has begun to unpack how other forms of inequality in schooling, including disparities in school quality and students’ experiences in schools, also contribute to health and health disparities (Walsemann et al., 2013; Walsemann, Geronimus, & Gee, 2008; Zajacova & Lawrence, 2018).

Rather than providing all students with equal opportunities for success, schools perpetuate inequality through the process of social reproduction. Inequality in school settings is important not only because it is responsible for disparities in education and employment, but school disadvantage has adverse consequences for health and wellbeing. Disadvantaged schools have been characterized as those that primarily serve socioeconomically disadvantaged populations (Crosnoe, Cavanagh, & Elder, 2003). Importantly, students who attend disadvantaged schools are afforded fewer educational opportunities and resources relative to students attending more advantaged schools (Walsemann et al., 2013). For example, the proportion of socioeconomically disadvantaged students attending a school is strongly associated
with lower per-pupil spending and higher pupil to teacher ratios (Walsemann, Gee, &
Geronimus, 2009). In addition, students who attend disadvantaged schools are more likely to be
exposed to environmental stressors in school including violence and disorder (Walsemann et al.,
2008), and be subjected to punitive and controlling environments (Perry, & Morris, 2014; Welch
& Payne, 2010).

Building upon this literature, the three studies that constitute this dissertation examine
how the stratification and socialization of students contribute to the reproduction of social
inequality and their implications for mental health. Situated within a life course framework, I
propose that the role of schooling for health is most appropriately examined as part of broader
social processes that unfold over the life course. A life course framework for health posits that,
first, disadvantage stemming from childhood and adolescent environments proliferates chains of
stressors. Second, the mental health consequences of multiple forms of disadvantage over the life
course tend to be cumulative in nature (Thoits, 2010). Accordingly, once in school, inequalities
in the quality and content of education shape the disparate educational paths afforded to different
groups of students. Through the processes of schooling, early differences in childhood
development are magnified into much larger disparities in educational attainment, employment
opportunities, and health and wellbeing (Crosnoe & Benner, 2016).

Together, the three papers to follow examine how the social reproduction of inequality in
schools matters for mental health across the life course. To this end, the first study examines the
influence of exclusionary school discipline policies on depressive symptoms among adolescents
without any history of suspension or expulsion; the second study examines the cumulative
influence of peer prejudice in high school and discrimination in adulthood on depressive
Background

The importance of social inequality for shaping health disparities is well established in the literature and there is a strong relationship between social position and morbidity and mortality (Hayward et al., 2015; Rogers et al., 2013). Educational attainment is often used to measure social position because it tends to be fixed by young adulthood, whereas income and employment status are sensitive to changes in individuals’ roles over the life course, and fluctuations in the economy (Walsemann et al., 2013). The mechanisms that explain the relationship between education and health can be distilled into two perspectives that synergistically help to explain the education-health gradient. The human capital perspective of the education-health gradient posits that additional education is associated with improvements in knowledge and the skills to act on this knowledge to promote health and wellbeing. Fundamental cause theory posits that higher levels of education are associated with the access to a host of resources such as income, wealth, and power that are connected to health via multiple intervening mechanisms such as healthcare and access to nutritious foods (Masters, Link, & Phelan, 2015; Zajacova & Lawrence, 2018). Yet, both of these theories suggest that the returns on additional education are uniform across populations and schools and do not address the potential modifiers of this relationship such as school quality.

Recently, two key findings about the role of school quality for health have emerged. First, school quality has important independent effects on an array of health outcomes. For example, increases in per-pupil spending are significantly associated with improvements in
general health in adulthood (Johnson, 2010). Attending schools with lower daily average attendance is associated with significantly increased odds for poor self-rated health and the diagnosis of depression in adulthood, controlling for socio-demographic characteristics, school performance, and baseline health status (Dudovitz et al., 2016). Secondly, this line of research finds that school quality modifies the relationship between the quantity of schooling one receives and health. Increases in school quality as measured by pupil-to-teacher ratios, teachers’ salaries, and the length of the school year all strengthen the overall effect that years of schooling have on obesity, smoking, self-rated health, and mortality (Frisvold & Golberstein, 2013; Sansani, 2011). For example, Sansani (2011) found that a one-standard deviation increase in teachers’ salaries was associated with 1.9 fewer deaths per 1,000 for each additional year of schooling.

The Social Reproduction of Inequality in Schools

Originally articulated by French sociologist Pierre Bourdieu, social reproduction theory posits that schools play an important role in the reproduction of social inequality. Specifically, Bourdieu (1974) elaborated upon the role of educational institutions for facilitating the distribution of economic capital (e.g. income, wealth), social capital (e.g. connections and networks), and cultural capital (e.g. academic credentials, knowledge). Each form of capital is an important resource for the preservation or elevation of social position. Yet, the distribution of capital is highly contingent on the school that one attends, as well as their social position within the school (Bourdieu, 1974; Brint, 2017; Walsemann et al., 2013; Zajacova & Lawrence, 2018). As a result, schools often reinforce inequality rather than leveling the playing field. In particular, two processes are important for understanding how schools perpetuate inequality: socialization and stratification.
Socialization in Schools

As agents of socialization, schools impart the values and standards of behavior that are considered normative in society, and shape social, educational, and occupational expectations among students (Brint, 2017; Wolf & Kupchik, 2017). Socialization messages are communicated both explicitly and implicitly through school practices, policies and the dynamics among students and adults in the school (Brint, 2017). These socialization messages often vary depending on individual characteristics such as race, ethnicity, socioeconomic status, and disability status (Brint, 2017; Krezmien, Leone, & Achilles, 2006). Explicitly, school curriculum may emphasize the importance of particular groups of people, traditions, and interpretations of history over others. Often, however, socialization messages from schools are conveyed more covertly, through “hidden curriculum” (Brint, Contreras, & Matthews, 2001). For example, messages about power and race are implied when white teachers and administrators are in positions of power within schools with predominantly non-white student bodies. These messages are also transmitted through policies and practices that favor certain groups of students over others. For example, black and Hispanic students, students from lower SES backgrounds, and students with disabilities are disproportionatelty suspended and expelled from school (Aud, Fox, & KewalRamani, 2010; Balfanz, Byrnes, & Fox, 2014; Hoffman, 2014; Skiba & Rausch, 2006), and black and Hispanic students are more likely to be tracked into remedial courses regardless of academic achievement (Walsemann & Bell, 2010).

Peers are another important source of socialization messages in schools, particularly during adolescence when developing autonomy from ones’ parents is one of the primary developmental tasks. As relations with parents shift, relations with peers become increasingly salient (Crosnoe & Mcneely, 2008). Accordingly, adolescents tend to internalize the attitudes and values of their peers as they attempt to gain acceptance. As an important sphere of influence
in the lives of adolescents, one’s peers can have a powerful influence on health and wellbeing. I focus on two aspects of peer relations that have well documented effects on mental health and wellbeing: peer discrimination and social integration.

The negative effects of discrimination and buffering effects of social integration on health and wellbeing have both gained considerable attention over the past decade. Research on the health of youth is no different, and many scholarly examinations of discrimination and health focus on youth’s experiences in school settings (Benner, Crosnoe, & Eccles, 2015; Cheng, Cohen, & Goodman, 2015; Greene, Way, & Pahl, 2006; Grollman, 2012; Myrick & Martorell, 2011; Respress, Morris, Gary, Lewin, & Francis, 2013; Romero, Gonzalez, & Smith, 2015; Wong, Eccles, & Sameroff, 2003). In schools, interpersonal discrimination may take on overt forms such as harassment and violence from peers, or subtle forms such as racial microagression by teachers and school administrators (Priest, Perry, Ferdinand, Kelaher, & Paradies, 2017; Romero et al., 2015).

Interpersonal discrimination constitutes a considerable source of psychological distress among populations with marginalized social status (Williams, Davis & Williams-Morris, 2000). As Williams (2000) describes “generic perception of unfair treatment can lead to negative emotional reactions and the induction of psychological distress.” Additionally, stereotypes may result in the internalization of negative attitudes and self-devaluation among those in marginalized social positions. Among adolescents, discriminatory experiences are often significant sources of stress and lower self-esteem, two factors that are highly related to depressive symptoms (Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003). A compelling body of research documents the detrimental consequences of discrimination spanning into adulthood (Williams & Mohammed, 2009). For example, experiencing discrimination is
associated with racism related vigilance in which discriminatory events trigger anticipation of and preparation for future discrimination. Racism related vigilance can become a source of chronic stress and sleep disturbance, both of which are implicated in depression trajectories (Hicken et al., 2013; Steffan et al., 2006).

While discrimination may adversely impact health and wellbeing, numerous studies document the role of social integration for promoting physical and mental wellbeing (Resnick et al., 1997; Shochet, Dadds, Ham, & Montague, 2006). School-connectedness is among the most common measures for assessing students’ social integration within schools. School connectedness, the extent to which students feel respected and cared for by their peers and teachers, is inversely associated with depressive symptoms (Markowitz, 2016; Shochet et al., 2006), anxiety, and general functioning among adolescents (Shochet et al., 2006). A seminal study by Resnick and colleagues (1997) found that school connectedness was the single strongest protective factor against an array of adolescent health outcomes including emotional distress, suicidal ideation, substance use, violence, and sexual debut.

**School Stratification**

Social stratification in the context of schooling occurs at multiple levels. First, at the higher-level students are assigned to different schools; second, within schools, students are assigned to different tracks and programs. At the higher-level students, are generally assigned to schools based on the neighborhoods in which they live, and neighborhood socioeconomic advantage/disadvantage aligns closely with school-level advantage/disadvantage. Additionally, de facto residential segregation continues to stratify many blacks and Hispanics from whites at the neighborhood level, with blacks and Hispanics often residing in more socioeconomically disadvantaged neighborhoods. As a result, socioeconomic stratification often overlaps with racial/ethnic stratification across schools (Brint, 2017; Walsemann et al., 2011). For example,
69.3% of students attending the nation’s most disadvantaged schools are black and Hispanic, compared to 8.1% of students attending the nation’s wealthiest schools (Walsemann et al., 2013). In the United States, school advantage is associated with significantly smaller average class sizes and more teachers with five or more years of experience and master’s degrees relative to socioeconomically disadvantaged schools (Walsemann et al., 2013). Additionally, disadvantaged schools have significantly higher rates of student drop-out and grade retention compared to the wealthiest schools, after controlling for family sociodemographic characteristics (Walsemann et al., 2013).

Stratification also occurs within schools and academic tracking and special education programs separate students who attend the same school into different groups. There is evidence that decisions about how students are tracked are often based on subjective perceptions of students’ academic performance rather than objective assessments of student aptitude (Brint, 2017; Gamoran, Nystrand, Berends, & LePore, 1995; Walsemann & Bell, 2010). Further, tracking is strongly associated with social status and students from lower SES backgrounds, and black and Hispanic students are tracked into lower-level curriculum more often than their peers (Brint, 2017; Walsemann & Bell, 2010). Another important concern is that the education received by students tracked into ‘lower-level’ and ‘higher-level’ classrooms differs in terms of quality and content (Brint, 2017). Students who are tracked into ‘higher levels’ tend to be exposed to more rigorous academic skills such as critical thinking. Students tracked into ‘lower levels’ receive inferior instruction and engage in more rudimentary educational tasks. These differences in the quality and content of instruction within academic tracks are believed to exacerbate inequities in educational outcomes among groups of student (Gamoran, 1992; Gamoran et al., 1995). As the literature reveals, schooling impacts students in nuanced ways and
the effects of schooling are socially patterned. Guided by social reproduction theory and a life course framework, this dissertation seeks to build upon the literature by addressing the following three aims:

**Specific Aims**

**Aim 1:** Examine the association between exclusionary school disciplinary policies and depressive symptoms among adolescents without a history of suspension or expulsion.

**Sub aim:** Examine whether this association is explained by perceptions of school connectedness, school safety and teacher fairness.

**Aim 2:** Examine the cumulative influence of peer prejudice in adolescence and perceived discrimination in adulthood on depressive symptoms in early adulthood.

**Sub aim:** Examine whether the association between cumulative discrimination and depressive symptoms is modified by race/ethnicity.

**Aim 3:** Explore the role and meaning of schooling for adults with mental illness using forty-five semi-structured qualitative interviews.
CHAPTER 2 The Collateral Consequences of Exclusionary School Discipline Policies: Examining the association between discipline policies and depressive symptoms among non-excluded adolescents

Introduction

The negative consequences of exclusionary discipline for students who are suspended or expelled is well documented. Being excluded from school is associated with a host of adverse consequences including disengagement from the school community (Skiba & Rausch, 2006) significantly increased odds for depressive symptoms (Rushton, Forcier, & Schectman, 2002) and victimization and incarceration in adulthood (Wolf & Kupchik, 2017). Yet, how exclusionary disciplinary policies influence those who have never been suspended or expelled (henceforth non-excluded), remains relatively understudied. According to the theory of collateral consequences, involvement in the criminal justice system not only impacts those who are convicted of crimes, but also extends to their families and communities. However, there is little empirical research exploring whether other systems of justice, such as school discipline, have implications for non-excluded students attending the same school. Given that exclusionary discipline is associated with diminished school connectedness (McNeely, Nonnemaker, & Blum, 2002), it is plausible that more exclusionary discipline policies impact depressive symptoms among non-suspended students through their influence on school connectedness, an important protective factor against emotional distress in youth (McNeely et al., 2002; Resnick, 1997; Shochet et al., 2006). To address this gap in the literature, we explore whether more severe discipline policies influence emotional distress among non-excluded adolescents, and whether accounting for respondent’s connectedness, and two dimensions of connectedness, perceptions of safety and teacher fairness mediates this relationship.


Background

Schools, Mental Health and Exclusionary Discipline

Exclusionary school discipline including out-of-school suspension (i.e. temporary removal from school) and expulsion (i.e. permanent removal from school) has become an enduring feature of American schools (Kupchik & Ellis, 2008; Losen & Martinez, 2013; Matjasko, 2011a). In the 2009-2010 school year, an estimated one in nine secondary school students were suspended resulting in a total of two-million out-of-school suspensions in that school year alone (Losen & Martinez, 2013). The use of exclusionary discipline in America’s schools arose from the 1994 Gun Free Schools Act in order to send a strong message that school violence would not be tolerated. However, school exclusion has become increasingly prevalent and is now used to punish students for relatively minor infractions such as insubordination and dress code violations (Hoffman, 2014; Losen & Martinez, 2013; Wolf & Kupchik, 2017). Today, only five percent of suspensions result from violent behavior compared to fifty-one percent resulting from disruptive behavior (Skiba & Rausch, 2006). Despite their widespread use, the efficacy of these policies for improving school safety and deterring misbehavior has been contested. Empirical work has identified that exclusionary discipline is ineffective for deterring school-crime (Cook, Gottfredson, & Na, 2010) and inversely associated with students’ behavior (Tanner-Smith & Fisher, 2016; S. M. Way, 2011), educational outcomes (Perry & Morris, 2014; Wolf & Kupchik, 2017), positive school climate (Tanner-Smith & Fisher, 2016), and school connectedness (McNeely et al., 2002).

Youth spend one-third to one-half of their time in school, more time than they spend in any other social institution (Brint, 2017; Markowitz, 2016). Given this, understanding how schools influence the mental and physical health of youth is a top priority. On one hand, schools directly influence health by providing resources including health services and buildings free from
environmental hazards (Allensworth, Lawson, Nicholas, & Wyche, 1997). Indirectly, schools influence health through their policies, classroom management styles and the opportunities they provide to students. These factors in turn shape school climate, which refers to the “quality as well as the character of school life” (Daniels & Bradley, 2011). Various dimensions of school climate including teacher and peer support, student autonomy in the classroom, and the clarity and consistency of school rules have been shown to protect against emotional distress (Way, Reddy, & Rhodes, 2007).

However, there is substantial variability in the climates of American schools. A consistent theme in the modern sociology of education underscores the role that schools play in legitimizing and perpetuating existing social inequalities (Brint, 2017; Rosenbloom & Way, 2004; Walsemann, Bell, & Goosby, 2011). This is accomplished through the power structures in schools, emphasis on specific types of knowledge and sets of values, and variability in the quality and characteristics of the schools that are accessible to different student populations (Walsemann et al., 2011). Ultimately, these factors shape who reaps the benefits of schooling.

The use of exclusionary school discipline is one source of inequality among schools. There is evidence of marked racial and socioeconomic disparities in exclusionary discipline at both the individual and school levels. At the individual level, the U.S. Department of Education reported that in 2007, 42.6% of Black youth were suspended compared to 21.9% of white youth (Aud et al., 2010). At the school level, schools in which the majority of students are racial/ethnic minorities (Welch & Payne, 2010b) and come from socioeconomically disadvantaged backgrounds tend to employ more exclusionary disciplinary policies and have higher overall rates of out-of-school suspension and expulsion (Christle, Nelson, & Jolivette, 2004a; Irwin, Davidson, & Hall-Sanchez, 2012). In one study, Christle et al. (Christle, Nelson, & Jolivette,
2004b) reported that overall rates of out-of-school suspension had a significant positive association with the proportion of students in the Federal Free and Reduced Lunch Program and was inversely associated with the proportion of white students in schools.

While it is well established that more exclusionary discipline perpetuates inequality directly by inhibiting academic success (e.g. students who are suspended or expelled are more likely to drop out of high school) (Wolf & Kupchik, 2017), we maintain that schools with exclusionary disciplinary policies may not only undermine opportunities for those who are suspended or expelled but may also have unintended consequences for the emotional adjustment of their peers. Given the marked racial/ethnical and socioeconomic disparities in the use of exclusionary discipline, exclusionary discipline may be an overlooked source of disparities in adolescent mental health.

**Theoretical Orientation**

Drawn from criminal justice, the theory of collateral consequences demonstrates the invisible costs faced by convicted offenders that extend beyond their sentences (Chesney-Lind & Mauer, 2002). Such costs include the revocation of voting rights and exclusion from public housing (Chesney-Lind & Mauer, 2002). Yet, there is another side to these collateral consequences: the consequences of criminal justice often have far reaching impact on the families, social networks, and communities of incarcerated individuals (Chesney-Lind & Mauer, 2002; Hagan & Foster, 2012; Perry & Morris, 2014; Wildeman, Schnittker, & Turney, 2012). Several studies document the negative consequences of incarceration on wellbeing and physical mental health among family and community members (Chesney-Lind & Mauer, 2002; Lee, Fang, & Luo, 2013; Wildeman et al., 2012). In their pioneering work, Perry and Morris (2014) applied the theory of collateral consequences to educational settings in order to understand how increases in rates of out-of-school suspension over time impacted individual-level math and
reading achievement among non-suspended students. Using a sample of Kentucky public school students, they found that, indeed, higher rates of out-of-school suspension were associated with poorer reading and math achievement controlling for school and individual-level factors.

The role of students’ perceptions of school connectedness, school safety and teacher fairness

In recent years, school connectedness and its relationship to mental health has piqued the interest of scholars across the social sciences and public health. Broadly speaking, school connectedness is the perception that one’s peers and adults in the school context care about and respect them as individuals. Adolescents’ perception that they are cared for and supported has a positive influence on their self-concept thus impacting their emotional adjustment (Furlong, O’brennan, & You, 2011; McNeely et al., 2002; Resnick et al., 1997; Shochet et al., 2006). Indeed, several studies have identified school-connectedness as a leading protective factor against emotional distress, substance abuse, eating disorders and suicidal ideation and attempt among adolescents (Centers for Disease Control and Prevention, 2009b; Resnick et al., 1997; Shochet et al., 2006). Additionally, school disciplinary policies are associated with overall levels of school connectedness. Mcneely et al., (McNeely et al., 2002) found that students reported significantly lower levels of school connectedness in schools with harsh and moderate discipline compared to schools with lenient discipline after controlling for school-level factors including school-level demographic characteristics and indicators of school climate.

Although varying conceptualizations of school connectedness and its dimensions exist in the literature, the School Connectedness Scale (SCS) is among the most widely used instruments for assessing perceptions of school connectedness (Furlong et al., 2011). The SCS taps into the quality of student’s relationships with peers and adults in the school, their perceptions of safety and their sense of belonging to the school (Furlong et al., 2011). Given the well-documented
relationships between school connectedness and emotional distress, and school connectedness and discipline severity, we examine whether the inclusion of school connectedness into our models reduce the overall impact of discipline on emotional distress.

Additionally, two underlying dimensions of school connectedness, perceptions of teacher fairness and school safety are also of interest. Adolescents’ perceptions that teachers in their school treat students fairly taps into students relationships with caring adults in the school setting, a protective factor against emotional distress (LaRusso, Romer, & Selman, 2008). For example, Larusso (2008) found that perceptions of teacher support were associated with lower levels of drug use and depressive symptoms and Respress et al. (Respress, Morris, et al., 2013) reported that perceptions of teacher fairness predicted fewer depressive symptoms among White and ‘Other minority’ students. Additionally, it is important examine the role that perceptions of school safety play given the association between safety perceptions in other contexts and emotional distress. For example, Meltzer and colleagues (Meltzer, Vostanis, Goodman, & Ford, 2007) reported that among 11 to 16 year-olds, the perception that their neighborhood was very unsafe was associated with nearly 7-fold odds for having an emotional disorder as measured by the Development and Wellbeing Assessment.

**Quantifying Exclusionary Discipline Policies**

To date, only a handful of studies have explored the role that disciplinary policies (as opposed to rates of suspensions and expulsions) play in behavioral, academic, and health outcomes. Using a continuous measure of policy severity, Matjasko (2011) found that participants who attended schools with more severe policies were actually more likely to commit criminal offenses in adulthood compared to their peers. Mcneely and colleagues (2002) found that students attending schools with lenient disciplinary policies had significantly higher levels of school connectedness than students in schools with modal or harsh policies.
Other studies have focused on the impact of specific policies (e.g. policies for drinking alcohol at school) on offending behavior and emotional distress. For example, Resnick et al (1997) explored whether school specific policies towards smoking, alcohol and illicit drugs effected risk behaviors and distress and did not identify any significant associations. Studies by Zimmerman and Rees (2014) and Maimon et al. (2012) did not identify direct deterrence effects for specific discipline policies on behavior, although their findings suggested that policies may play a more complex role in moderating risk factors for student behavior (Maimon et al., 2012; Zimmerman & Rees, 2014). For example, Zimmerman found that in schools with more exclusionary sanctions towards drinking, smoking and fighting in school, the effect of negative peer influence on these behaviors was significantly attenuated.

We build upon this earlier work on the impact of school disciplinary policies in order to examine the collateral consequences of exclusionary discipline policies on depressive symptoms among non-excluded adolescents by addressing the following research questions:

1) What is the association between exclusionary discipline policies and depressive symptoms, controlling for individual and school-level covariates?

2) Is this association attenuated after accounting for individual-level perceptions of school safety and teacher unfairness?

3) Is this association attenuated after accounting for individual-level perceptions of school-connectedness?

4) Are our results robust to two instrumentations of exclusionary discipline (e.g. sum of infractions compared to severity score)?
Methods

Sample

The Add Health study is a complex, stratified, cluster design-based survey that represents 132 schools located in 80 distinct U.S. communities. First, eighty high schools were selected from Quality Education Data Database (QED) to serve as the primary sampling frame. Schools were stratified according to region, urbanicity, school type, (public, private, parochial), ethnic mix and size and then selected with a probability for selection proportional to its size. A feeder middle school was selected with a probability proportional to the number of students it fed into the high school. Eighty high schools and 52 feeder schools agreed to participate in the study. To construct the Wave I in-home survey sample, students in each school were stratified by grade, gender and race. Roughly 17 students were selected with unequal probability from each stratum yielding subsample of 12,105 students. Supplemental special samples were drawn on the basis of race/ethnicity, relatedness (e.g. sibling pairs), adoption status, and disability resulting in N=20,745 adolescents interviewed in the Wave I In-home survey (Chen & Chantala, 2014). Wave II was collected in 1996 from all students who were in grades seven through eleven in Wave I (N=14,738); participants who had graduated from high school by Wave II were intentionally dropped. Two subsequent waves were collected to record adolescents’ transitions into adulthood: Wave III (N=15,170) and Wave IV (N=15,701) (Harris, Udry, & Bearman, 2013).

Data for this study come from Waves I and II in-home surveys, the Wave I parent survey and the school administrator survey. Our analytic sample based on 13,568 Wave I respondents who were successfully re-interviewed and had survey weights. We dropped 1,560 students who attended the nineteen schools with no school administrator data on school discipline policies
from the analytic sample\(^1\), and 111 respondents who were missing CES-D scores or history of suspensions and expulsions. As our research question concerns the impact of disciplinary policies on students without any history of suspension or expulsion, we restricted our sample to respondents with no history of suspension or expulsion yielding a final analytic sample of 8,973.

**Imputation Strategy**

We conducted multiple imputation using Multiple Imputation of Chained Equations (MICE) in Stata Version 14 to account for missing data for individual level control variables (StataCorp, 2015). Receipt of public assistance was missing responses for 12.3% of our sample. All other covariates were missing fewer than 1.0% of data. MICE allows for the imputation model of each variable with missing data to be imputed conditionally based on its respective distribution (White, Royston, & Wood, 2011). We selected this method of imputation because our variables with missing data came from binomial, ordinal, and normal distributions. Each imputation model accounted for the two-stage survey design and included all variables from our analytic models as predictors. The results of 25 imputations were pooled using Rubin’s rules to obtain our estimates and standard errors (White et al., 2011).

**Study Measures**

**Dependent variable.** We used the nineteen-item version of the Center for Epidemiologic Studies Depression Scale (CES-D) to assess depressive symptoms at Wave II. Wave II of the Add Health Study only includes nineteen of the original items 20 CES-D items. It asks questions about respondents’ mood, activities, thoughts and feelings over the past week. The response

---

\(^1\) The schools with missing disciplinary policy data were compared to the schools with complete data across percent of students receiving public assistance, median parental education, percent of students who feel safe in school, region, urbanicity and type (e.g. public v. private) using t-tests for continuous variables and chi-squared for categorical variables. No significant differences were found between the schools and they are there for assumed to be missing completely at random.
format is a four-point Likert scale ranging from 0 (never or rarely) to 3 (most of the time or all of the time). Three positive items were reverse coded. The nineteen-items were summed to create scale ranging from 0 to 57 where 57 indicates high levels of depressive symptoms.

**Independent variables.** School administrators were asked to rate their school’s discipline policies for 12 infractions on a 7-point Likert scale. One indicated no policy and 7 indicated expulsions. Using the available school policy data, we created two scales. First, we created a scale indicating the mean policy severity. Due to the relatively small numbers of schools endorsing more lenient policies, even for relatively minor offenses, we collapsed “no policy,” “verbal warning” and “minor action” to create a lenient category. Lenient policies were coded as 1, in-school suspension was coded as 2, out-of-school suspension was coded as 3 and expulsion was coded as 4. Consistent Matjasko (2011), we summed the responses across the 12 infractions. For ease of interpretation, we then took the average policy across the 12 infractions for each school (McNeely et al., 2002). Second, we created a variable indicating the sum of infractions resulting in out-of-school suspension or expulsion. To this end, we dichotomized each of the 12 policies into a dummy variable indicating out of school suspension or expulsion compared to all other punishments. We then summed the dummy variables for each of the 12 responses to create a scale ranging from 0-12.

**Individual Level Covariates**

In order to account for SES, we included a variable indicating whether the respondent’s parents received any form of public assistance including social security, railroad retirement, supplemental income security, Aid to Families with Dependent Children, food stamps, unemployment, worker’s compensation, or housing subsidies. Respondents’ self-reported race/ethnicity was categorized as Non-Hispanic white (white), non-Hispanic black (black), Hispanic, Asian/Pacific Islander (Asian). Due to the small proportion of Native American
respondents, they were collapsed with “other”. Additionally, we include respondents’ age and
gender because both of these variables are associated with depressive symptoms among
adolescents. Finally, we include individual-level perceptions of school-connectedness derived
from the Add Health’s School Connectedness Scale (SCS). The SCS measures five dimensions
of social integration in schools including “I feel close to people at this school,” “I feel like I am
part of this school,” “I am happy to be at this school,” “The teachers at this schools treat students
fairly,” and “I feel safe in my school.” Responses ranged from 1=strongly agree to 5=strongly
disagree. Responses were reverse coded so that scale represented higher perceptions of school-
connectedness. This scale has been widely used and was shown to have reliability between $\alpha=\.82$ to $\alpha=\.88$ across 18 sociodemographic groups (Furlong et al., 2011). Continuous individual-
level covariates were centered at their weighted grand means (Enders & Tofighi, 2007).

**School Level Covariates**

We included a series of school-level covariates that may be risk factors for depressive
symptoms among adolescents. We constructed a variable indicating the proportion of white
students using race/ethnicity reported in the Wave I in-home survey and aggregated it to the
school level using the grand-sampling weights. This specification is recommended over use of
the school survey due to reporting bias in the race/ethnicity data in the in-school survey
(Walsemann et al., 2011). To account for school-level SES, we included the proportion of
students whose families received public assistance across each school. All school-level
characteristics were derived using the grand sampling weights for the Wave I in-home survey so
that measures are representative of the student population within each given school. Finally, we
control for a set of school-level characteristics: region, size (<400, 401-1000, >1,000), and type
(public v. private), geographic region, and urbanicity (urban, suburban or rural). All continuous
school-level covariates were centered at the weighted grand-school mean (Enders & Tofighi, 2007).

**Complex Survey Design**

In order to adjust for the complex survey design of Add Health, modeling was performed using Stata, Version 14 survey procedures (StataCorp, 2015). Not accounting for these design features can lead to biased estimates and underestimation of standard errors resulting in false positive results (Chen & Chantala, 2014). Specifically, stratified sampling tends to increase the variance, whereas clustering and unequal probability for selection tend to decrease the variance. Using Stata survey procedures, we adjust for the poststratification variable census region, the primary sampling unit school identification code, and the Wave I school-level and respondent-level survey weight in our imputation and analytic models.

**Multilevel Linear Regression Models**

The Add Health study uses a two-stage sampling strategy. In the first stage, schools were sampled from the total population of United States schools in the Quality Education Database. In the second stage, students were sampled from within each school. Because only 132 schools were selected for inclusion in add health, we regard these schools as we would regard any random sample that is drawn from a population. As such, we must consider the random variability that exists between the schools selected for our sample. We selected multilevel regression in order to: 1) account for the unexplained variability (e.g. “random effects”) between schools in our models and 2) we are interested in testing the effects of the group-level variable student discipline. While a single-level fixed effect model is run under the assumption that all of the variability between groups is explained by fixed-effects, we believe that the variability in outcome (depressive symptoms) also depends on the groups (schools). We use the multilevel model specification to incorporate the variability among schools (e.g. random effects) (Snijders & Bosker, 2012).
Below we present three models, the-level-1 model, the level-2 model and the random intercept model:

**Equations for Two-Level Linear Regression Models**

\[ Y_{ij} = B_{0j} + B_1 x_{ij} + R_{ij} \] \[1\]

Is our level-1 model, where \( Y_{ij} \) is the outcome, depressive symptoms for person \( i \) in school \( j \), where \( B_1 \) is fixed in the population, \( B_{0j} \) is the intercept, and \( R_{ij} \) is the residual.

\[ B_{0j} = \gamma_{00} + U_{0j} \] \[2\]

Is the level-2 model where \( \gamma_{00} \) is the average intercept and \( U_{0j} \) is the random part of the intercept that varies depending on group membership.

\[ Y_{ij} = \gamma_{00} + \gamma_{10} x_{ij} + U_{0j} + R_{ij} \] \[3\]

Is the simple case of the mixed effects model, the random intercept model, which we obtained by substituting the level-2 model for the level-1 model intercept, where \( \gamma_{00} \) is the intercept for the average group, \( \gamma_{10} \) is the regression coefficient for \( x_{ij} \) fixed effect.

After running the empty model (with no student or school level predictors), we continued with a series of three multilevel linear regression models. In Model 1 we include the sum of infractions and all individual-level and school-level covariates. In Model 2, we add two dimensions of school connectedness, perceptions of teacher fairness and school safety. In model 3, we add the full school-connectedness to model 1. We repeated this modeling procedure to examine the association between mean discipline severity and Wave II depressive symptoms (models 1a-3a).
Results

Descriptive Statistics

Table 2.1 displays individual-level descriptive statistics for our sample of respondents who had never been suspended or expelled. Table 2.2 displays school-level characteristics. In Table 2.3, we show the breakdown of school discipline policies across infractions. As shown, both out-of-school suspension and expulsion policies are highly prevalent in American schools. In some instances, out-of-school suspension are used as a response to non-violent offenses (e.g. 3.5% for cheating and 39.5% for smoking). Sixty-eight percent of schools in our sample reported that students are suspended the first time they are caught fighting with a peer, whereas 70.3% of schools reported suspending students who are caught possessing alcohol for the first time. Additionally, overall rates of expulsion are high. Not surprisingly given the intended purpose of exclusionary discipline is to ensure student safety, students are the most likely to be expelled for bringing a weapon to school; seventy-six percent of schools reported that students are permanently removed from school for the first offense. Yet, expulsion is also high for other offenses; for example, 34.6% of schools expel students the first time they are caught using an illegal drug at school.

Two-level Linear Models

Table 2.4 displays models 1-3, the multi-level linear regression analyses modeling individual-level depressive symptoms on the sum of infractions resulting in suspension or expulsion, respondent’s age, gender, race, receipt of public assistance, and school-level covariates including racial composition, proportion receiving public assistance, region, school type and urbanicity. Model 1 shows that the sum of disciplinary infractions reported by the school administrator at Wave I was significantly associated with depressive symptoms among non-excluded students at Wave II controlling for school and individual level factors, although the
size of the effect was small (b=0.15, p<.05). In Model 2, both perceptions that teachers are unfair and that the school is not safe are significantly associated with higher depressive symptoms among non-excluded students. Perceptions that teachers are unfair was associated with a 1.56-point increase in CES-D (p<.001) and feeling safe at school was associated with a 1.21-point decrease in CES-D (p<.001). The inclusion of safety and unfairness did not have a significant impact on the association between school discipline and depressive symptoms. In model 3, school-connectedness was significantly associated with lower depressive symptoms (b=-0.46, p<.001) and the relationship between discipline severity and depressive symptoms among non-excluded students is no longer significant.

Consistent with our first set of models, models 1a-3a (Table 2.5), we identified a significant relationship between exclusionary discipline policies conceptualized as a scale ranging from less exclusionary to more exclusionary. A one-unit increase in discipline severity was associated a significant increase in depressive symptoms among non-excluded students (b=0.94, p<.05). Similar to the models in using the sum of infractions to predict depressive symptoms, accounting for perceptions that teachers are unfair or school safety did not significantly alter this relationship. However, accounting for the full school-connectedness scale brought the effect of school discipline on depressive symptoms among non-excluded students to non-significance suggesting that individual student perceptions of school connectedness helps to explain the relationship between depressive symptoms and discipline policies among non-excluded students.

**Discussion**

Taken together, we found that exclusionary discipline policies have collateral consequences for the emotional adjustment of non-excluded students. With respect to our first
research question, exclusionary discipline has a significant positive association with depressive symptoms controlling for a comprehensive set of individual and school-level covariates. This finding is consistent regardless of whether exclusionary discipline is instrumentalized as the sum of infractions resulting in out-of-school suspension or expulsion, or as a scale of severity. With respect to our second research question, the relationship between exclusionary discipline and depressive symptoms remains unchanged after adding individual-level perceptions of school safety or teacher fairness into the model. However, in regard to our third question, we found that after including individual-level perceptions of school-connectedness, the association between discipline policies and depressive symptoms among non-excluded students was no longer significant.

These findings suggest that school-connectedness may be an important mechanism through which discipline policies and depressive symptoms are linked among students with no history of suspension or expulsion. It is likely that schools with more exclusionary discipline also have higher rates of out-of-school suspension and expulsion. Therefore, non-excluded students will likely experience their friends, peers or relatives being removed from school, potentially weakening their bonds and placing strain on the school community, which are protective against emotional distress (Centers for Disease Control and Prevention, 2009b; Resnick et al., 1997; Shochet et al., 2006). Additionally, the relationships that adolescents have with their teachers is an important component of school connectedness. It is plausible that highly exclusionary contexts inhibit the development of caring, respectful relationships between teachers and students. There are also several other potential mechanisms beyond school connectedness that may elucidate this association that we were unable to test in this analysis. First, in highly punitive environments, it is possible that rule abiding students become preoccupied with
avoiding discipline in order to remain in school, thereby increasing anxiety and distress. Additionally, drawing from the work of Erving Goffman, Perry & Morris (Perry & Morris, 2014) proposed that students in schools with high rates of school suspension may experience “courtesy stigma” which they propose may lead to declines in academic achievement. Building on this idea, students in exclusionary contexts may be adversely affected by stigma towards the school’s reputation which could also impact emotional distress among non-excluded students.

Limitations

This study has several important limitations. Because Add Health only has administrators report on disciplinary policies in Wave I, we cannot establish whether a change in disciplinary policies across waves is associated with a change in depressive symptoms in order to establish causality. Second, the school policy data is self-reported by administrators and it is possible that administrators underreport school policies. Underreporting of the exclusionary nature of discipline policies could potentially bias our results towards the null hypothesis, that these policies have no effect on depressive symptoms. Third, although we control for an extensive set of individual and school-level covariates, there is the potential for residual confounding which could bias the results towards either the null or the alternative hypothesis. Additionally, although we use a two-level analytic strategy, we do not control for neighborhood level effects. It is possible that the broader neighborhood context could be simultaneously associated with depressive symptoms and school policies. Fourth, the participants in our study were enrolled in school during 1994-1995 and our findings are only generalizable to this population. However, in light of the fact that the rates of school exclusion have risen since the nineties, it is likely that this study underestimated the true prevalence of exclusionary disciplinary policies. Finally, administrators in the Add Health only report on the school’s disciplinary policy, not on adherence to the policy or disciplinary policies. Given the wide-spread use of zero-tolerance
discipline, it may also be important to explore the impact that the process through which discipline is administered (e.g. do administrators consider the context in which a rule was broken or provide the opportunity for due process?) has on mental health.

Conclusions

Despite these limitations, this study makes an important contribution to earlier research examining the impact of exclusionary discipline policies. Using a nationally representative survey, we established that exclusionary discipline policies have broader impacts on non-excluded students’ mental health, and second we found that school-connectedness may provide an important link between exclusionary policies and mental health. To our knowledge, this is the first study to explore how a full-scale of disciplinary policies influence mental health. By employing a multilevel analytic strategy, we controlled for a broad range of potential confounders at both the individual and school levels as well as within school clustering effects.

These findings are particularly concerning in light of pronounced racial and socio-economic disparities in the use of exclusionary discipline across American schools. Instead of leveling the playing field and creating opportunities for disadvantaged populations, exclusionary discipline policies may serve to further disadvantage already marginalized students. Future studies should continue to explore the role school connectedness as a mechanism linking exclusionary policies and depressive symptoms through formal mediation analyses. Additionally, future research should explore how actual rates of out-of-school-suspension and expulsion influence mental health. In light of these findings, careful consideration of alternative disciplinary strategies for schools is warranted. Alternative strategies including restorative justice is a promising alternative to exclusionary practices for deterring misbehavior and building positive school climates (Payne & Welch, 2017).
Table 2.1. Demographic characteristics of non-excluded students, weighted data (n=8,973)

<table>
<thead>
<tr>
<th>Individual level covariates</th>
<th>Proportion (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressive symptoms&lt;sup&gt;1&lt;/sup&gt;</td>
<td>10.42 (.21)</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>.59 (.043)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.14 (.019)</td>
</tr>
<tr>
<td>Black</td>
<td>.19 (.036)</td>
</tr>
<tr>
<td>Asian</td>
<td>.06 (.017)</td>
</tr>
<tr>
<td>Other</td>
<td>.03 (.0036)</td>
</tr>
<tr>
<td>Male</td>
<td>.46 (.0088)</td>
</tr>
<tr>
<td>Age&lt;sup&gt;1&lt;/sup&gt;</td>
<td>15.69 (.12)</td>
</tr>
<tr>
<td>Public Assistance</td>
<td>.24 (.011)</td>
</tr>
<tr>
<td>Attended same school across Waves</td>
<td></td>
</tr>
<tr>
<td>Perceive teachers are fair</td>
<td>.16 (.01)</td>
</tr>
<tr>
<td>Feel safe</td>
<td>.70 (.014)</td>
</tr>
<tr>
<td>School-connectedness</td>
<td>18.86 (.085)</td>
</tr>
</tbody>
</table>

<sup>1</sup>Means and standard errors indicated for continuous variables

Table 2.2. School characteristics, weighted data (n=113)

<table>
<thead>
<tr>
<th>School level covariates</th>
<th>Proportion (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean School Policy severity</td>
<td>2.77 (.10)</td>
</tr>
<tr>
<td>Average sum of infractions</td>
<td>8.17 (.55)</td>
</tr>
<tr>
<td>Percent non-Hispanic white</td>
<td>.70 (.06)</td>
</tr>
<tr>
<td>Mean Proportion on PA</td>
<td>.28 (.026)</td>
</tr>
<tr>
<td>Private schools</td>
<td>.19 (.071)</td>
</tr>
<tr>
<td>School region</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>.16 (.06)</td>
</tr>
<tr>
<td>Midwest</td>
<td>.35 (.11)</td>
</tr>
<tr>
<td>South</td>
<td>.34 (.07)</td>
</tr>
<tr>
<td>Northeast</td>
<td>.15 (.06)</td>
</tr>
<tr>
<td>Urbanicity</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>.23 (.07)</td>
</tr>
<tr>
<td>Suburban</td>
<td>.56 (.09)</td>
</tr>
<tr>
<td>Rural</td>
<td>.21 (.06)</td>
</tr>
<tr>
<td>School connectedness</td>
<td>19.15 (.16)</td>
</tr>
</tbody>
</table>

<sup>1</sup>Means and standard errors indicated for continuous variables
Table 2.3. School policies for first time infractions (n=113 schools)

<table>
<thead>
<tr>
<th>Infraction</th>
<th>No response</th>
<th>Verbal warning</th>
<th>Minor action</th>
<th>In-school suspension</th>
<th>Out-of-school suspension</th>
<th>Expulsion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheating</td>
<td>7.9%</td>
<td>16.5%</td>
<td>56.7%</td>
<td>15.0%</td>
<td>3.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Smoking at school</td>
<td>0.0%</td>
<td>4.7%</td>
<td>15.5%</td>
<td>39.5%</td>
<td>39.5%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Possessing alcohol</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3.1%</td>
<td>11.0%</td>
<td>70.1%</td>
<td>15.7%</td>
</tr>
<tr>
<td>Possessing illegal drug</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.8%</td>
<td>4.7%</td>
<td>59.8%</td>
<td>34.6%</td>
</tr>
<tr>
<td>Drinking alcohol</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.8%</td>
<td>8.6%</td>
<td>70.3%</td>
<td>20.3%</td>
</tr>
<tr>
<td>Using illegal drug</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3.2%</td>
<td>58.7%</td>
<td>38.1%</td>
</tr>
<tr>
<td>Stealing school property</td>
<td>0.8%</td>
<td>0.0%</td>
<td>4.8%</td>
<td>21.4%</td>
<td>67.5%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Fighting with another student</td>
<td>0.0%</td>
<td>2.3%</td>
<td>4.7%</td>
<td>24.2%</td>
<td>68.0%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Verbally abusing a teacher</td>
<td>0.8%</td>
<td>5.6%</td>
<td>11.9%</td>
<td>32.5%</td>
<td>48.4%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Possessing weapon</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.6%</td>
<td>22.6%</td>
<td>75.8%</td>
</tr>
<tr>
<td>Injuring another student</td>
<td>0.0%</td>
<td>0.8%</td>
<td>7.9%</td>
<td>19.7%</td>
<td>65.4%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Physically injuring a teacher</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.8%</td>
<td>30.4%</td>
<td>68.8%</td>
</tr>
</tbody>
</table>
Table 2.4. Multilevel linear regression modeling depressive symptoms on the sum of disciplinary infractions resulting in suspension or expulsion among non-excluded students, weighted data (n=8,973)

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>-0.22</td>
<td>0.31</td>
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<td>1.04</td>
<td>12.02***</td>
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</table>

* p<0.05, **p<0.01, ***p<0.001

1 Continuous individual covariates are centered around the weighted grand mean.
2 School-level covariates are centered around the weighted grand-school mean.
Table 2.5. Multilevel linear regression modeling depressive symptoms on the disciplinary severity scale among non-excluded students, weighted data (n=8,973)

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<tr>
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<th>Model 1a</th>
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<td>0.50***</td>
</tr>
<tr>
<td>Male</td>
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<td>-2.09***</td>
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<td></td>
<td></td>
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<tr>
<td>Hispanic</td>
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<td>0.68</td>
<td>2.46***</td>
</tr>
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<td>0.4</td>
</tr>
<tr>
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<td>1.85*</td>
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<td>1.90*</td>
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<tr>
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<td>1.57*</td>
<td>0.79</td>
<td>1.33</td>
</tr>
<tr>
<td>Public Assistance</td>
<td>1.79***</td>
<td>0.38</td>
<td>1.74***</td>
</tr>
<tr>
<td>Attend same school</td>
<td>-1.69*</td>
<td>0.83</td>
<td>-1.67*</td>
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<tr>
<td>Perception teachers are unfair</td>
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<tr>
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<td><strong>School-level covariates</strong></td>
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<tr>
<td>% white</td>
<td>0.86</td>
<td>0.80</td>
<td>1.01</td>
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<td>% on public assistance</td>
<td>3.09**</td>
<td>1.13</td>
<td>2.63*</td>
</tr>
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<tr>
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<td>Urbanicity (ref=urban)</td>
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</tr>
<tr>
<td>Intercept</td>
<td>12.20***</td>
<td>0.94</td>
<td>13.78***</td>
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* p<0.05, **p<0.01, ***p<0.001
1 Continuous individual covariates are centered around the weighted grand mean.
2 School-level covariates are centered around the weighted grand-school mean.
CHAPTER 3 The Cumulative Influence of Perceived Discrimination and Prejudice on Depressive Symptoms from Adolescence into Young Adulthood

Abstract

Perceived discrimination is an important source of stress that has tangible consequences for mental health and wellbeing. Life course theory posits that stressors that persist from early age into adulthood are especially detrimental to physical and mental health. We investigate whether the harmful effects of discrimination reported across adolescence and young adulthood have a cumulative association with depressive symptoms in young adulthood and whether this association varies across race/ethnicity. Data came from 14,631 respondents from the National Longitudinal Study of Adolescent Health collected in 1994-1995, when participants were in high school and in 2004-2005, when participants were young adults. When perceived discrimination was reported in both adolescence and young adulthood, it was associated with significantly higher levels of depressive symptoms than discrimination reported at either time point alone, in both the full sample and samples stratified by race/ethnicity. Additionally, in analyses stratified by race/ethnicity, perceived discrimination reported in one wave alone was only associated with depressive symptoms among black. This may be attributed to differences in how discrimination was measured in adolescence and young adulthood. These findings provide preliminary evidence for an accumulation of stress hypothesis for perceived discrimination across the life-course and suggests that further work is needed to understand the cumulative effects of discrimination.
The Cumulative Influence of Perceived Discrimination and Prejudice on Depressive Symptoms from Adolescence into Young Adulthood

Introduction

Scholarship exploring the social context of mental health supports the inimical consequences of discrimination across a range of mental health outcomes including depressive symptoms, self-esteem, and general psychological distress (Kessler, Mickelson, Williams, & Kessler, 1999; Paradies, 2006; Priest et al., 2013, 2017; Williams & Mohammed, 2009; Williams, Neighbors, & Jackson, 2003; Williams & Williams-Morris, 2015). This line of research has been instrumental in unpacking both cross-sectional and longitudinal relationships among various forms of discrimination and mental health outcomes. Whereas longitudinal studies tend to emphasize the influence of trajectories of discrimination across single developmental periods (e.g. adolescence) (Greene et al., 2006; Yip, 2015), less is known about how discrimination reported across multiple developmental periods (e.g. adolescence and young adulthood) accumulates to influence mental health. Here, we conceptualize adolescence as the ages 12-18 and young adulthood as the ages 24-34 (Newman & Newman, 2014).

Understanding the mental health consequences of discrimination requires close attention to how discrimination, in its various forms, is quantified across the life course. Guided by stress theory and the life course framework, we use the National Longitudinal Study of Adolescent to Young Adult Health (Add Health) to explore two questions: first, what is the cumulative association between perceived discrimination reported across two developmental periods - adolescence and young adulthood – on depressive symptoms in young adulthood; and second, is the association between cumulative discrimination across the life course and depressive symptoms moderated by race/ethnicity?
**Background**

Racial and ethnic disparities in depressive symptoms have been observed in both adolescents and young adults. Among adolescents, black, Hispanic, Asian, and American Indian youth report significantly higher levels of depressive symptoms than white youth (Respress et al., 2013; Allen et al., 2015; Walsemann, Bell & Maitra, 2011; Walsemann, Goosby & Bell, 2011; Adkins et al., 2009; Rushton et al., 2002). Similarly, among young adults, studies report higher levels of depressive symptoms among blacks and Hispanics compared to whites (Bromberger, Harlow, Avis, Kravitz, & Cordal, 2004; J. S. Brown, Meadows, & Elder, 2007; Walsemann et al., 2009). In order to explain these disparities, stress theory research has emphasized the ways in which the distribution of societal stressors such as economic strain and discrimination contribute to inequalities in health and wellbeing.

**Theoretical Orientation**

Central to the stress theory paradigm are three propositions: First, stressors are unevenly distributed throughout the population and this distribution reflects the social location of individuals (Brown et al., 2007; Thoits, 2010; Turner & Avison, 2003). Second, the impact of stressors on health outcomes varies depending on the material and psychosocial resources that one has available for mitigating their consequences (Brown et al., 2007; Lee & Turney, 2012; Thoits, 2010); and third, the health consequences of these stressors accumulate as the quantity and duration of stressors increases (Grollman, 2012; Pearlin, Schieman, Fazio, & Meersman, 2005; Thoits, 2010; Turner, Wheaton, & Lloyd, 1995). We extend the stress process literature by examining how stressors occurring during different developmental periods across the life course accumulate to influence health.

In addition to stress theory, the life course framework emphasizes the ways in which social and environmental stressors experienced early in life manifest on the mind and body in
adulthood and older age. Such stressors, particularly those linked to social status, are not temporally isolated, as Pearlin and colleagues note, “Because socially ascribed statuses are acquired at birth and continue to death, discriminatory experiences based on these statuses may be coextensive over the entire life course, repeatedly experienced from youth through old age (Pearlin et al., 2005, p. 209). Central to the life course framework, accumulation describes how stressors often accrue over the life course linking them to poorer health outcomes than stressors occurring in isolation (Kuh et al., 2003).

**Discrimination and Mental Health**

Prejudice, which refers to perceptual biases (e.g. negative stereotypes or beliefs), and discrimination, which refers to differential and unfair treatment (e.g. harassment), describe manifestations of distinct or intersecting systems of oppression (e.g. racism and sexism) (Grollman, 2012; Ong, Fuller-Rowell, & Burrow, 2009; D. Williams, Priest, & Anderson, 2016; Williams & Mohammed, 2009). Although distinct from discrimination, perceived prejudice has previously been used to capture discrimination when more precise measures are unavailable in longitudinal surveys such as the Add Health (e.g. Goosby and Walsemann, 2011; Le and Stockdale, 2011; Respress et al., 2013; Walsemann et al., 2011). Similarly, we use the available measure of peer prejudice as our measure of discrimination and discuss the implications this has for our findings and their interpretation. Henceforth, we refer to experiences of perceived discrimination and perceived prejudice collectively as discrimination. Discrimination is often a significant and painful source of stress (Brown et al., 2000). It is associated with feelings of injustice, negative self-appraisal, diminished self-esteem, increased anxiety, vigilance, and the perception of barriers imposed by one's social position (Hicken, Lee, Ailshire, Burgard, & Williams, 2013; Williams et al., 2016; Wong et al., 2003). It has also been associated with activation of physiologic stress response as indicated by multiple measures of allostatic load that
are implicated in the development of chronic illnesses such as diabetes and heart disease (Brody et al., 2014).

Who experiences discrimination varies depending on unique and intersecting social positions such as race/ethnicity, age, gender, and socioeconomic status (SES) with historically marginalized groups disproportionately bearing its burden (D’Anna, Ponce, & Siegel, 2010; Grollman, 2012; Lee & Turney, 2012). Although racial/ethnic minorities tend to report higher levels of discrimination than whites (Kessler et al., 1999), considerable variation exists across populations depending on historic and social contexts (Greene et al., 2006; Lewis et al., 2015; Walsemann et al., 2011a). Accordingly, variation in perceived discrimination has been documented across race, ethnicity, gender, and SES, as well as other markers of social context such as school racial composition (Walsemann et al., 2011a). For example, African American and Latino boys tend to report greater discrimination, as measured by the Schedule of Racists Events, from adults relative to their female peers (Greene et al., 2006). Similarly, experiences of discrimination vary across socioeconomic lines with higher-SES African Americans reporting more racial discrimination than lower-SES African Americans (Lewis et al., 2015).

While some research suggests that the magnitude of the association between discrimination and mental health outcomes varies across race and ethnicity, the literature is inconsistent. Kessler and colleagues (1999) found no variation in the association between discrimination and health across race/ethnicity. However, Green and colleagues (2006) found that as perceived discrimination by one’s peers increased over time, self-esteem decreased among blacks and Non-Puerto Rican Latinos, but remained stable among Puerto Rican Latinos, which the authors attributed to the relatively higher social status of Puerto Rican adolescents at
the particular school under study. Further, D’Anna (2010) found that racial/ethnic discrimination was more detrimental to the health of Latina women than non-Latina white women.

In an attempt to explain these varied findings, two perspectives have emerged. The first explanation maintains that discrimination may be more detrimental to the health of marginalized populations due to inequities in the distribution of buffering resources along the lines of marginalized status (Brown et al., 2007; Grollman, 2012). The second perspective maintains that greater exposure to discrimination among historically marginalized groups leads to the development of psychosocial coping strategies that help to mitigate its deleterious consequences (Mossakowski, 2003; Respress et al., 2013; Wong et al., 2003). However, it is not necessary that these perspectives contradict each other, but rather that the degree to which they are operative depends on unique individual and social contexts.

**Discrimination in Adolescence and Young Adulthood.** Both adolescence and young adulthood are important life course periods. Adolescence is implicated in the development of formal operational thought (Greene et al., 2006) and enhanced racial/ethnic identity and awareness (Brody et al., 2006; Greene et al., 2006). Adolescents experience increased autonomy facilitating their interaction with the world beyond family and school and exposure to mainstream culture (Greene et al., 2006). These gains in autonomy may also increase adolescents’ exposure to discrimination as they navigate new social spaces. As they develop racial/ethnic identity and increased racial awareness, they may become more attuned to and likely to perceive discrimination. Further, given the importance that adolescents place on acceptance by their peers, they may be particularly aware of and sensitive to prejudices observed in their peer group (Walsemann et al., 2011). Similarly, young adulthood is associated with increased independence and responsibility as young adults assume financial responsibility for
themselves and their families, and may spend more time in caretaker roles (National Research Counsil, 2015; Sorgi et al., 2015). Young adults’ increased exposure to new social environments such as places of work and housing markets may increase their exposure to discrimination (National Research Counsil, 2015).

Measuring Discrimination

Instruments used to measure discrimination vary in terms of the attribution for discrimination (e.g. race-based), type (e.g. major events, chronic treatment), frequency, and the time-frame over which the discrimination is reported. The most commonly used instruments record daily, non-specific forms of discrimination such as the Everyday Discrimination Scale, which captures discrimination over the past year (Kessler et al., 1999; Williams & Mohammed, 2009; Williams, Yu, Jackson, & Anderson, 1997). Other measures have conceptualized discrimination based on major life-time events such as being unfairly fired from a job (Kessler et al., 1999; Williams et al., 1997). However, Williams et al., (2003) note that measures of lifetime discrimination are often limited by their retrospective nature which may result in the underreporting of discrimination. Further, emphasis on major events may fail to capture the chronicity of discrimination. This is important in light of research showing that stressors experienced chronically are more damaging to health over time than major events (Thoits, 2010; Williams et al., 2007). For example, Williams and colleagues (1997) observed that when discrimination was conceptualized as a chronic, day to day stressor it was associated with increased psychological distress and lower levels of wellbeing. However, when it was conceptualized using major events, it was not associated with mental health. Often, the associations between discrimination and mental health are examined using cross-sectional data or longitudinally within a single developmental period (e.g. during
adolescence). These studies find that as perceived discrimination increases over time, so do depressive symptoms (Brody et al., 2006; Greene et al., 2006; Yip, 2015). While these studies provide important insight into the accumulation of discriminatory experience over adolescence, less is known about how discriminatory experiences accumulate across different developmental periods (Williams et al., 2003). Exploring this has been difficult given many existing longitudinal surveys do not capture discrimination consistently through follow-up (Williams et al., 2003).

While more formal examinations of the accumulation hypothesis using a life course framework exist within the stress literature, they have tended to focus on the cumulative burden of socioeconomic disadvantage (Lindström, Hansen, & Rosvall, 2012; Murray et al., 2011; Singh-Manoux, Ferrie, Chandola, & Marmot, 2004). Although few studies explore the accumulation of discrimination across survey waves, Gee and Walsemann (2009) found that employment discrimination reported across multiple years in young adulthood was more strongly associated with work-related impairment than discrimination reported in a single year. Further, studies of socioeconomic disadvantage across the life course report that those who experienced socioeconomic disadvantage across multiple developmental periods had poorer self-reported physical and mental functioning (Singh-Manoux et al., 2004) and poorer self-rated health (Lindström et al., 2012).

To address these limitations, the present study makes two important additions to the study of discrimination and mental health. First, using a nationally representative survey, we formally test whether the influence of discrimination measured during two distinct developmental periods bears a cumulative burden on depressive symptoms in young adulthood controlling for a set of covariates that have been associated with both perceived discrimination and depressive
symptoms. Second, in order to address inconsistencies in the literature exploring variation in the
discrimination and mental health association across race/ethnicity, we examine whether the
association between cumulative perceived discrimination and depressive symptoms is modified
by race/ethnicity. Specifically, we hypothesize that, 1) Reporting discrimination across both
adolescence and young adulthood will be associated with higher levels of depressive symptoms
in early adulthood compared to reporting discrimination in one period alone or not reporting
discrimination in either period; and 2) The association between cumulative discrimination and
depressive symptoms will be moderated by race/ethnicity.

Method

Study Sample

Data were drawn from the National Longitudinal Study of Adolescent Health (Add
Health). Add Health is a nationally representative, longitudinal study of adolescents who were
followed into young adulthood. It was first administered between 1994 and 1995 to participants
in grades seven through twelve (Harris et al., 2013). The data used in the present study are from
the in-home surveys administered at Waves I, II and IV, and the parent questionnaire
administered in Wave I. In Wave I, the majority of respondents were between the ages of 12 and
18, and in Wave IV, they were between the ages of 26 and 32.

Complex Survey Design

The school-based survey uses a complex, stratified, cluster design and 132 schools
located in 80 distinct U.S. communities were sampled. Initially, eighty high schools were
selected from Quality Education Data Database (QED), which served as the primary sampling
frame. Schools were selected with a probability for selection proportional to the school’s size,
and a feeder middle school was selected with a probability proportional to the number of
students it feeds into the high school. Overall, 80 high schools and 52 feeder schools agreed to participate in the study. Schools were stratified according to region, urbanicity, school type, (public, private, parochial), ethnic mix and size. To construct the Wave I in-home survey sample, roughly 17 students were selected with unequal probability from each stratum yielding subsample of 12,105 students. Supplemental special samples were drawn on the basis of race/ethnicity, relatedness (e.g. sibling pairs), adoption status, and disability resulting in N=20,745 adolescents who were interviewed in the Wave I In-home survey (Chen and Chantala, 2014).

Wave II was collected in 1996 from all students who were in grades seven through eleven in Wave I (N=14,738); participants who had graduated from high school by Wave II were intentionally dropped. Two subsequent waves were collected to record the respondents’ transitions into adulthood: Wave III (N=15,170) and Wave IV (N=15,701) (Harris et al., 2013). 14,800 of Wave I respondents who were re-interviewed in Wave IV had survey weights and we dropped and additional 169 respondents who reported their race as “other” or were missing our primary outcome variable the Center for Epidemiologic Studies-Depression Scale (CES-D), resulting in an analytic sample of 14,631 respondents. Subsequent assessments of non-response bias conducted the Survey Research Unit at the University of North Carolina, determined that non-response bias for several items included in Wave IV CES-D was small and not statistically significant (Brownstein et al., 2010)

**Missing Data**

Multiple imputation was conducted using Multiple Imputation by Chained Equations (MICE) in Stata, Version 14 (StataCorp, 2015). A major advantage of MICE is that it allows analysts to impute each variable using the imputation model that is appropriate given the
variable’s distribution (White et al., 2011). We opted for a cautious number of imputations (m=50). The imputation models include all independent variables included in the analytic models, the dependent variable (Wave IV CES-D) and two auxiliary variables (Wave I and IV welfare status) that were closely related to income. We ran the imputation models stratified by race/ethnicity which allowed us to preserve the hypothesized effect modification by race/ethnicity in the imputation models (White et al., 2011).

**Measures**

Dependent variable. We used the nine-item version of the CES-D in order to assess depressive symptoms because Wave IV of Add Health only includes nine of the original 20 CES-D items. The nine-item subscale has been used previously in studies of depressive symptoms (see Walsemann et al., 2011). It asks questions about respondents’ mood, activities, thoughts and feelings over the past week. The response format is a four-point Likert scale ranging from 0 (never or rarely) to 3 (most of the time or all of the time). Three positive items were reverse coded. The nine-items were summed to create scale ranging from 0 to 27 where 27 indicates high levels of depressive symptoms.

**Main independent variable.** The primary independent variable of interest was cumulative perceived discrimination across adolescence (Waves I and II) and young adulthood (Wave IV). In adolescence, perceived discrimination was captured by the question “Students at this school are prejudiced” where ‘1’ indicated strong agreement and ‘5’ indicated strong disagreement. Respondents who agreed or strongly agreed at either Wave I or Wave II were coded as reporting discrimination during adolescence. This single item measure of discrimination has been used in previous research documenting the relationship between perceived
discrimination and health and academic and behavioral outcomes (Goosby and Walsemann, 2011; Le and Stockdale, 2011; Respress et al., 2013; Walsemann et al., 2011).

To capture perceived discrimination at Wave IV, we used the question “In your day-to-day life, how often do you feel you have been treated with less respect or courtesy than other people?” Responses were indicated using a four-point Likert scale ranging from ‘1’ (“never or rarely”) to ‘3’ (“most of the time or all of the time”). Respondents who indicated “a lot of the time” or “most of the time or all of the time” were coded as having experienced discrimination in Wave IV. Previous research by Everett et al. (2016) used this measure to capture experiences with day to day discrimination. Because Add Health did not ask about discrimination in Wave III, this wave was excluded from analyses. Finally, to create our measure of cumulative discrimination, the dichotomous indicators for discrimination in adolescence and in adulthood were summed resulting in values of 0, 1, or 2. Because each potential cumulative discrimination score represents a discrete category, the variable was treated as an ordinal variable coded into two dummy variables indicating whether the respondent reported discrimination in one wave or two waves compared to participants who did not report discrimination in either wave.

**Individual-level covariates.** Given scholarship documenting variation in the distribution of discrimination across gender (Greene et al., 2006), SES (Lewis et al., 2015), race/ethnicity (D’Anna et al., 2010; Respress et al., 2013), and school racial composition (Walsemann et al., 2011), and that depressive symptoms are associated with these status groups (Pratt, Ph, & Brody, 2014), all models are adjusted for this set of covariates. In order to account for multiple dimensions of SES (e.g. income), we included two measures of family SES at Wave I and Wave IV, respectively. In both waves, annual household income was categorized as <$25,000, $25,000-49,999, $50,000-74,999 and =>$75,000. In Wave I, parental education was categorized
as less than high school, high school graduate or GED, some college but no degree, and college graduate and higher. The same categories were used to sort respondents’ education in Wave IV. Respondents’ self-reported race/ethnicity from Wave I was categorized as Non-Hispanic white (white), non-Hispanic black (black), Hispanic, Asian/Pacific Islander (Asian), and American Indian/Alaska Native (American Indian). Four categorical dummy variables were then created to indicate black, Hispanic, American Indian and Asian race/ethnicity using white as the reference group. Finally, we adjusted for school racial composition using the proportion of white students attending the respondent’s school. We constructed a variable indicating the proportion of white students. In order to construct this variable, we used student’s race/ethnicity as reported in the in-home survey and aggregated it to the school level using the grand-sampling weights. This specification is recommended over use of the school survey by Walsemann and colleagues (2011) due to significant reporting bias that exists in the race/ethnicity data in the in-school survey.

**Analytic Approach**

All modeling was performed using Stata, Version 14 survey procedures including SVY set and SVY reg commands to obtain valid estimates and standard errors (StataCorp, 2015). In the first model, we ran ordinary least square (OLS) regression analysis to assess whether cumulative discrimination predicts Wave IV depressive symptoms in the full sample. Model 1 adjusts for Wave I and Wave IV household income, Wave I parental education, Wave IV respondent education, gender, race/ethnicity and Wave I school racial composition. In Model 1, the primary predictor, cumulative discrimination, is indicated with two dummy variables comparing whether the respondent reported discrimination in one wave or two waves compared to participants who did not report discrimination at either wave.
To explore whether the associations between cumulative discrimination and Wave IV depressive symptoms were moderated by race/ethnicity, we ran a second set of OLS regression models stratified by race/ethnicity. Each of these models is adjusted for the same set of covariates included in Model 1. An adjusted $R^2$ was calculated for each model using the mibeta command (StataCorp, 2015).

**Results**

**Sample Characteristics**

**Wave I.** Descriptive statistics for the imputed sample ($N=14,631$) are displayed in Table 1.1. On average, participants were 16.16 years old. There were slightly more female respondents than male and the majority of the sample was white. The majority of respondents’ parents had at least a high school diploma. Nearly one-quarter of respondents reported annual household income between $25,000 and $49,999, while just over 20% reported household income below $25,000. More than half of respondents reported that their peers were prejudiced. During adolescence, American Indian (70.27%) and white respondents (61.76%) were the most likely to report that their peers were prejudiced, while black respondents were the least likely to report that their peers were prejudiced (36.16 %). Across all participants, respondents attended schools where 65.0% of students were white; on average, Hispanic, black and Asian participants attended schools where the proportion of white students was just over one-third.

**Wave II.** Nearly one-third of respondents reported an annual household income of $75,000 or higher, while nearly a quarter of participants reported annual household income between $25,000 and $49,999. The majority of respondents had at least a high school diploma and nearly one-third of respondents had graduated from college. Respondents had a mean CES-D of 5.25 (95% CI: 5.12, 5.38). Black respondents had the highest mean CES-D score (5.88, 95 % CI: 5.57, 6.19). White respondents had significantly lower CES-D scores than all racial/ethnic...
groups with the exception of Hispanics. Approximately one-quarter of the entire sample at Wave IV reported discrimination in young adulthood. Nearly one-third of black participants reported discrimination compared to fewer than one-quarter of white participants.

*Ordinary least square regression predicting Wave IV CES-D*

We first examined the association between cumulative discrimination and Wave IV CES-D in the full sample. As displayed in Table 2, respondents’ sex, race, Wave IV education and income, and cumulative discrimination were all significantly associated with Wave IV CES-D. On average, males had CES-D scores that nearly one-point lower than females. Compared to whites, black respondents’ CES-D scores were roughly half a point higher (p<.001) and Asians’ CES-D scores were nearly 1-point higher (p<.001). American Indian respondents CES-D scores were .73 points higher than whites. Overall, higher household income and education in Wave IV was associated with lower levels of depressive symptoms. Controlling for all of the variables in the model, Wave I socioeconomic indicators were not significantly associated with Wave IV CES-D.

For our main predictors, cumulative discrimination, respondents who reported discrimination at one study wave had a half-point increase in Wave IV CES-D score (p<.001) compared to those who did not report discrimination in either wave. Reporting discrimination across both waves conferred a 2.78-point increase in CES-D score (p<.001). This finding supports our main hypothesis that while exposure to discrimination during one period is harmful for mental health, the effects of multiple exposures accumulate over time and posing an increasingly potent threat to mental health later in life.

**Effect Modification by Race/ethnicity**

In the final set of regression models (Table 1.3), we examined whether respondents’ race/ethnicity modified the effect of cumulative discrimination on Wave IV depressive
symptoms. Among black respondents, discrimination at only one wave was associated with a 1.13-point increase in CES-D score (p<.001) and among white participants it was associated with a 0.43 point-increase in CES-D score (p<.001). There were no significant associations between reporting discrimination at one wave and CES-D score for other racial/ethnic groups. However, reporting discrimination across two waves was associated with significantly higher CES-D scores across each racial/ethnic group when compared to participants who did not report discrimination at either wave. The magnitude of the association between cumulative discrimination and depressive symptoms was similar across all racial and ethnic groups, ranging from 2.36 points among Asians to 2.83 points among American Indians. For example, among American Indians, reporting discrimination across both periods was associated with a 2.83-point increase in CES-D scores (p<.05).

Finally, we ran post-hoc analyses to explore the finding that exposure to discrimination during one period was associated with depressive symptoms only among black and white participants. Table 1.4 displays the breakdown of discrimination exposure across adolescence and young adulthood among participants who only reported exposure to discrimination during one wave. Black participants (43.58%) followed by Hispanic participants (26.74%) were more likely to report discrimination in adulthood compared to all other racial/ethnic groups.

**Discussion**

These analyses revealed several key findings: First, respondents who reported discrimination across both adolescence and young adulthood had significantly higher levels of depressive symptoms than those who reported discrimination during one period alone even after adjusting for important sociodemographic characteristics in adolescence and young adulthood. In the full-sample, discrimination across both periods was associated with a 2.78-point increase in depressive symptoms, more than 5-times the increase associated with discrimination during one
period. Second, we identified a significant association between exposure to discrimination during one period among the full sample, although it was significantly smaller in magnitude (i.e. a .56-point increase) compared to respondents reporting discrimination across both periods. Third, in the models stratified by race/ethnicity, exposure to discrimination during one period was associated with an increase in adulthood depressive symptoms among black and white participants although it was not significant for any other racial/ethnic group.

Our first finding echoes the stress literature highlighting the added burden that stressors that are more chronic in nature have on health outcomes (Pearlin et al., 2005; Thoits, 2010; Williams et al., 1997) and provides preliminary evidence for an accumulation of stress hypothesis for discrimination. This is consistent with Gee and Walsemann’s (2009) finding that repeated reports of employer discrimination across two study points in young adulthood were more strongly associated with work-related limitations compared to single reports. Additionally, it aligns with earlier work revealing how other stressors, such as economic strain, accumulate when they persist across the life course (Lindström et al., 2012; Murray et al., 2011; Singh-Manoux et al., 2004). Several mechanisms through which chronic discrimination may influence depressive symptoms have been proposed. For example, discrimination may place strain on coping resources over time, as Brody et al. describes “The psychological cost of striving to maintain a positive sense of self while facing frequent exposure to discriminatory experiences can tax youths’ coping resources (2006, p. 1184); and, it may confirm negative self-appraisal leading to internalized discrimination and decreased self-esteem (Williams, Davis & Williams-Morris, 2000).

Our finding that the association between discrimination during only one period and depressive symptoms was only significant for blacks and whites requires careful attention. We
posit that it may result from the instrumentation of discrimination used in adolescence and young adulthood, respectively, and racial/ethnic variation in how participants reported discrimination across the two periods. First, the item used to assess discrimination in adolescence should be interpreted with caution as it explicitly asked respondents to assess whether or not their peers are prejudiced, not whether the respondent received discriminatory treatment. This is in contrast to the discrimination item used in young adulthood which asks whether the respondent was treated with less respect, making it difficult to compare the two measures. The lack of association between exposure to discrimination during a single period and depressive symptoms among all racial/ethnic groups except for blacks and whites may be an artifact of this instrumentation. According to our post-hoc analyses examining the racial/ethnic distribution of exposure to discrimination across each developmental period, Hispanics, American Indians, and Asians who reported discrimination during one period only were all more likely to have reported discrimination during adolescence compared to blacks. We hypothesize that our young adulthood measure of discrimination has a stronger association with depressive symptoms as it explicitly refers to the respondents’ personal experiences as opposed to perceptions of peers’ attitudes and beliefs. The findings that discrimination across one period among whites however may warrant a different interpretation. This finding may confirm research maintaining that exposure to discrimination among marginalized groups leads to the development of psychosocial coping strategies that help to buffer against its consequences compared to whites (Mossakowski, 2003; Respress et al., 2013; Wong et al., 2003). However, when taken together with adulthood discrimination, peer prejudice still appears to bear an additional influence on depressive symptoms.
Additionally, the peer prejudice item raises important questions about how it should be appropriately interpreted. Although the peer prejudice item does not capture respondents’ own treatment, it has been used as an indicator of perceived discrimination in several previous studies (Goosby and Walsemann, 2011; Le and Stockdale, 2011; Respress et al., 2013; Walsemann et al., 2011). While these studies corroborate our finding that, overall, black adolescents were the least likely to report discrimination and white respondents were the most likely to report discrimination, this finding merits further explanation. Respress and colleagues (2013) explain the finding that fewer black respondents report peer prejudice using the concept of ordinariness from Critical Race Theory. According to ordinariness, because racism is so entrenched in the day to day lives of people of color, they may learn to ignore it leading black respondents to underreport discrimination (Respress et al., 2013). We posit that black participants were less likely to report discrimination due to how the question was conceptualized and the school-specific context of many black adolescents in the United States. Consistent with earlier work, we found black adolescents were more likely to attend schools where the majority of students are non-white (Walsemann et al., 2011). However, it is likely that black students are more likely to report discrimination in predominantly white schools where they tend to be more marginalized and isolated than their black peers attending predominantly non-white schools (Walsemann et al., 2011).

Limitations
In addition to the important differences in the instrumentation of discrimination in adolescence and adulthood, our study has several other limitations. First, the single item discrimination questions used in adolescence and adulthood do not capture the specific nature or severity of the discrimination, which could bias our results toward the null hypothesis. Second, the racial/ethnic categories used to capture our effect modifier do not capture heterogeneity
across racial/ethnic groups, obscuring potential differences. Third, in adolescence, we only include a measure of discrimination by peers framed within the school context and we do not have information about discrimination faced in other social contexts, which may underestimate the prevalence of perceived discrimination in adolescence. Fourth, we are unable to infer causation due to the fact that depressive symptoms were measured simultaneously with discrimination in adulthood.

Despite these limitations, we leveraged a novel approach for testing an accumulation hypothesis for discrimination by examining exposure to discrimination across two distinct developmental periods. Respondents reported on discrimination at each survey wave minimizing recall bias to which scales of lifetime discrimination are prone (Williams et al., 2003). Additionally, data come from a large nationally representative cohort study and we control for a comprehensive set of potential confounders in both adolescence and adulthood. To date, research examining the cumulative impact of stressors across the life course has focused on socioeconomic stressors. This study provides an important and novel extension of this research by focusing on the cumulative influence of another important stressor, discrimination.

Conclusions

This study highlights the how repeated exposures to perceived discrimination across the life course influence depressive symptoms. We also draw attention to the ways in which discrimination is conceptualized, measured and interpreted in epidemiologic and social science research. While earlier studies have used peer prejudice as a proxy measure for perceived discrimination, our findings suggest that caution be taken in interpreting this measure. This underscores the need for longitudinal studies that comprehensively measure discrimination consistently over time. In addition to exploring the accumulation of discrimination and prejudice,
other life course concepts, such as sensitive periods and linked lives, may also be insightful for understanding the relationships between discrimination and mental health.
Table 3.1. Sample descriptive statistics, (N=14,631), adjusted for complex survey design

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<th>Black N=3,218</th>
<th>Asian/Pacific Islander N=937</th>
<th>American Indian/Alaska Native N=261</th>
<th>White N=7,863</th>
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<td>(6.97, 5.14)</td>
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<td>2.26%</td>
<td>1.47%</td>
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<td>27.47%</td>
<td>36.76%</td>
</tr>
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<td>36.16%</td>
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<td>&lt;$25,000</td>
<td>Mean school proportion white (95% CI)</td>
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<td>18.16%</td>
<td>11.91%</td>
<td>14.79%</td>
<td>0.65 (0.59, 0.71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.60%</td>
<td>4.57%</td>
<td>11.56%</td>
<td>0.34 (0.26, 0.43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.32%</td>
<td>5.16%</td>
<td>26.60%</td>
<td>0.35 (0.26, 0.43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18.66%</td>
<td>10.90%</td>
<td>8.95%</td>
<td>0.34 (0.22, 0.47)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17.06%</td>
<td>13.11%</td>
<td>15.60%</td>
<td>0.63 (0.50, 0.76)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>23.54%</td>
<td>16.31%</td>
<td>12.88%</td>
<td>0.80 (0.77, 0.83)</td>
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</tr>
</tbody>
</table>
Table 3.2. Ordinary least squares regression models predicting Wave IV depressive symptoms (N=14,631), adjusted for complex survey design.

<table>
<thead>
<tr>
<th></th>
<th>β</th>
<th>(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>-0.88***</td>
<td>(0.10)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.31</td>
<td>(0.19)</td>
</tr>
<tr>
<td>Black</td>
<td>0.62***</td>
<td>(0.16)</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>0.97***</td>
<td>(0.21)</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>0.73*</td>
<td>(0.33)</td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wave IV education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>1.85***</td>
<td>(0.24)</td>
</tr>
<tr>
<td>High school graduate</td>
<td>1.23***</td>
<td>(0.14)</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>0.57***</td>
<td>(0.11)</td>
</tr>
<tr>
<td>College graduate or higher</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Wave IV household income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$25,000</td>
<td>1.69***</td>
<td>(0.18)</td>
</tr>
<tr>
<td>$25,000-$49,999</td>
<td>0.50***</td>
<td>(0.12)</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>0.27</td>
<td>(0.14)</td>
</tr>
<tr>
<td>=&gt;$75,000</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Wave I parental education</td>
<td></td>
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<tr>
<td>Less than high school</td>
<td>0.10</td>
<td>(0.21)</td>
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<td>High school graduate</td>
<td>-0.01</td>
<td>(0.14)</td>
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<td>Some college, no degree</td>
<td>0.11</td>
<td>(0.14)</td>
</tr>
<tr>
<td>College graduate or higher</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Wave I household income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$25,000</td>
<td>0.09</td>
<td>(0.18)</td>
</tr>
<tr>
<td>$25,000-$49,999</td>
<td>-0.11</td>
<td>(0.15)</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>-0.09</td>
<td>(0.15)</td>
</tr>
<tr>
<td>=&gt;$75,000</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Wave I school proportion white</td>
<td>-0.02</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Cumulative discrimination</td>
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</tr>
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<td>No experiences</td>
<td>Reference</td>
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<tr>
<td>Experience</td>
<td>Value</td>
<td>SE</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Experienced during one period</td>
<td>0.56***</td>
<td>(0.11)</td>
</tr>
<tr>
<td>Experienced during two periods</td>
<td>2.78***</td>
<td>(0.17)</td>
</tr>
<tr>
<td>Intercept</td>
<td>3.73***</td>
<td>(0.21)</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>0.13</td>
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</tbody>
</table>

* p<0.05, ** p<0.01, *** p<0.001
Table 3.3. Ordinary least squares regression models predicting Wave IV depressive symptoms, stratified by race/ethnicity (N=14,631), adjusted for complex survey design.

<table>
<thead>
<tr>
<th></th>
<th>Hispanic (SE)</th>
<th>Black (SE)</th>
<th>Asian (SE)</th>
<th>American Indian (SE)</th>
<th>White (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wave IV education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>-1.17***</td>
<td>-0.57</td>
<td>-0.78</td>
<td>-1.44*</td>
<td>-0.89***</td>
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<td>(0.31)</td>
<td>(0.45)</td>
<td>(0.59)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>High school graduate</td>
<td>1.24*</td>
<td>2.28***</td>
<td>3.04*</td>
<td>3.44**</td>
<td>1.77***</td>
</tr>
<tr>
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<td>(0.53)</td>
<td>(0.63)</td>
<td>(1.19)</td>
<td>(1.17)</td>
<td>(0.29)</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>1.37***</td>
<td>1.19***</td>
<td>0.99*</td>
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</tr>
<tr>
<td></td>
<td>(0.37)</td>
<td>(0.30)</td>
<td>(0.48)</td>
<td>(0.67)</td>
<td>(0.16)</td>
</tr>
<tr>
<td>College graduate</td>
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<td>0.76*</td>
<td>0.48</td>
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<td>(0.33)</td>
<td>(0.39)</td>
<td>(0.55)</td>
<td>(0.13)</td>
</tr>
<tr>
<td><strong>Wave IV income</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$25,000</td>
<td>1.52**</td>
<td>0.95</td>
<td>0.73</td>
<td>1.32</td>
<td>1.87***</td>
</tr>
<tr>
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<td>(0.52)</td>
<td>(0.56)</td>
<td>(0.97)</td>
<td>(0.23)</td>
</tr>
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<td>0.90</td>
<td>0.62</td>
<td>0.62***</td>
</tr>
<tr>
<td></td>
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<td>(0.43)</td>
<td>(0.51)</td>
<td>(0.79)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
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<td>-0.05</td>
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<td>0.35*</td>
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<td>(0.45)</td>
<td>(0.42)</td>
<td>(0.91)</td>
<td>(0.15)</td>
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<td>=&gt;75,000</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wave I education</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>-0.54</td>
<td>0.60</td>
<td>0.11</td>
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<td>0.12</td>
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<td>(1.01)</td>
<td>(1.08)</td>
<td>(0.30)</td>
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<td>(0.61)</td>
<td>(0.93)</td>
<td>(0.16)</td>
</tr>
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<td>-0.04</td>
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<td>(0.35)</td>
<td>(0.59)</td>
<td>(0.98)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>College graduate</td>
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<td>-1.97</td>
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<td>(0.58)</td>
<td>(0.93)</td>
<td>(1.59)</td>
<td>(0.20)</td>
</tr>
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<td>$25,000 - $49,999</td>
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<td>0.46</td>
<td>-2.21</td>
<td>-0.12</td>
</tr>
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<td>(0.51)</td>
<td>(0.75)</td>
<td>(1.44)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>0.23</td>
<td>-0.16</td>
<td>0.55</td>
<td>-0.71</td>
<td>-0.11</td>
</tr>
<tr>
<td></td>
<td>(0.54)</td>
<td>(0.55)</td>
<td>(0.72)</td>
<td>(1.36)</td>
<td>(0.16)</td>
</tr>
<tr>
<td>=&gt;75,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wave I school proportion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>0.02</td>
<td>0.05</td>
<td>-0.12</td>
<td>0.15</td>
<td>-0.08**</td>
</tr>
<tr>
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<td>(0.07)</td>
<td>(0.04)</td>
<td>(0.09)</td>
<td>(0.10)</td>
<td>(0.03)</td>
</tr>
<tr>
<td><strong>Cumulative discrimination</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No experiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experienced during one period</td>
<td>0.46</td>
<td>1.13***</td>
<td>0.54</td>
<td>0.25</td>
<td>0.43***</td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
<td>(0.24)</td>
<td>(0.41)</td>
<td>(0.80)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>Experience during two periods</td>
<td>2.61***</td>
<td>2.58***</td>
<td>2.36**</td>
<td>2.83*</td>
<td>2.79***</td>
</tr>
</tbody>
</table>

57
Table 3.4. Discrimination in adolescence and adulthood among respondents reporting discrimination in one wave (N=7,594), stratified by race/ethnicity.

<table>
<thead>
<tr>
<th></th>
<th>Wave I discrimination</th>
<th>Wave IV discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>73.26%</td>
<td>26.74%</td>
</tr>
<tr>
<td>Black</td>
<td>56.42%</td>
<td>43.58%</td>
</tr>
<tr>
<td>Asian</td>
<td>82.00%</td>
<td>18.00%</td>
</tr>
<tr>
<td>American Indian</td>
<td>86.25%</td>
<td>13.75%</td>
</tr>
<tr>
<td>White</td>
<td>83.34%</td>
<td>14.66%</td>
</tr>
</tbody>
</table>

* p<0.05, ** p<0.01, *** p<0.001
CHAPTER 4 “School became messin’ with my mental health”: Marginalization in primary and secondary school among adults with mental illness

NIMH Funded Study: Alisa K. Lincoln, #1R01MH096707-02

Abstract

Adults with mental illness often face challenges to their wellbeing and livelihood including poor educational outcomes, unemployment, limited literacy, stigmatization, and high rates of trauma. Yet, little is known about how these adults understand the role and meaning of schooling for their personhood. Given, the importance of primary and secondary schooling for shaping one’s social position in adulthood, it is important to understand how schools contribute to the marginalized social position and compromised wellbeing of adults with mental illness. We analyze forty-five qualitative interviews with public mental health service users to explore their experiences in primary and secondary school and understand how these experiences relate to their social position and wellbeing as adults. Among school-level factors, participants emphasized stratification into special education classes, poor educational quality, school-exclusion, and non-existent academic and emotional support. Additionally, participants described multiple forms of victimization and social exclusion from their peers in school. Our findings suggest that these factors may influence their marginalized social position as adults with mental illness by inhibiting their access to the fundamental educational and social resources required for full and meaningful participation in society.

Introduction

Despite the unequivocal role of schools for cognitive and social development, inequity in schooling is among the most important problems facing the United States (Brint, 2017). In addition to disparities in high school and college graduation across race, ethnicity, and
socioeconomic status, there is a well-documented, bi-directional association between mental health status and educational attainment (Breslau, Javaras, Blacker, Murphy, & Normand, 2008; Vander Stoep, Weiss, Kuo, Cheney, & Cohen, 2003). However, less is understood about the role and meaning of primary and secondary schooling for adults with mental illness (MI). Although the symptoms of MI may arise during childhood or adolescence, often, they are not diagnosed or treated until adulthood (Chandra & Minkovitz, 2006). In addition, exposure to trauma, including physical and sexual abuse is common in the lives of adults with MI (Cusack, Frueh, & Brady, 2004). Both trauma exposure and mental health problems that emerge in early life may pose learning and social difficulties in school. As a result, students with mental health problems are at an elevated risk for peer victimization and school suspension (Arseneault, Bowes, & Shakoor, 2010; Breslau, Lane, Sampson, & Kessler, 2008; Krezmien et al., 2006; Porche, Fortuna, Lin, & Alegria, 2011).

Qualitative research exploring the meaning of schooling is important for understanding the specific challenges that adults with MI may have encountered in school settings. To date, such research has focused on experiences in settings of higher education (Dougherty et al., 1996; Knis-Matthews, Bokara, DeMeo, Lepore, & Mavus, 2007; Weiner, 1999). This body of research suggests that adults with mental illness encounter cognitive and social barriers to learning, stigma, and limited social support. On the other hand, their experiences in college provide opportunities for self-redefinition as students rather than patients, and instill them with hope (Knis-Matthews et al., 2007; Weiner, 1999). However, little attention has been paid to understanding the role and meaning of primary and secondary schooling among adults with MI. Extending this is important in order to identify the barriers to school completion and social integration that adults with MI may face in primary and secondary school settings. Furthermore,
illuminating these barriers may inform the development of school-based interventions that target academic achievement and social integration among youth experiencing trauma or the symptoms of mental illness

**Background**

**Social Stratification in Schools**

In addition to exposure to trauma and emergent symptoms of MI, the role that schools play in the social reproduction of inequality is important for understanding the educational experiences of adults with MI. The function of schools for either enabling or prohibiting social mobility has been described using the contrasting images of a ladder and a sieve. To view education as a ladder, schools are imagined as a gateway to higher social status via improved job prospects, income, and prestige and power. In contrast to a ladder, the sieve imagines schools as instruments for deterministically stratifying the students who will be successful in school and reap the associated rewards from those who will not (Brint, 2017). A large body of research from the sociology of education documents the ways in which schools perpetuate and legitimize social inequalities. For example, schools stratify students through processes such as academic tracking and exclusionary discipline (Brint, 2017; Gamoran, 1986, 1992; Gamoran et al., 1995; Kupchik & Ellis, 2008; Walsemann & Bell, 2010) and there are well-documented social inequalities in American schools across characteristics such as classroom resources and student-to-teacher ratios (Brint, 2017; Condron, Tope, Steidl, & Freeman, 2013). Over time differences in the application school practices and disparities in the distribution of resources translate into large gaps in educational and occupational attainment.

**Trauma and Peer Victimization**
Research on the educational outcomes of trauma exposed youth and youth with mental health problems suggests that these students may be particularly vulnerable to forces of stratification within schools. For example, Porche and colleagues (2011) examined the trauma and mental health correlates of high school graduation in a national sample of young adults. They reported that 19.8% of students who had experienced a major trauma dropped out of high school compared to 13.0% of students without a history of trauma. Among those who had experienced child abuse, the rate of high school drop-out was nearly one-third. Similarly, nearly 20.0% of students with one or more DSM diagnoses dropped out of high school compared to 13.6% of students with no diagnosis (Porche et al., 2011). Others have found that exposure to violence is associated with missed school days, decreased grade point average, and significant deficits in IQ and reading ability (Delaney-Black et al., 2002; Hurt, Malmud, Brodsky, & Giannetta, 2001).

Research suggests that both trauma exposure and MI are associated with cognitive and behavioral impairments that can adversely impact learning and social integration in school settings (Porche et al., 2011). Despite these challenges, schools often provide only fragmented support for these students (Ko et al., 2008; West et al., 2014), and many educators feel they lack the training and resources needed to adequately support students with mental health problems in the classroom (Reinke, Stormont, Herman, Puri, & Goel, 2011; Reker, 2016; Toros & Tiirik, 2016). Rather than receiving the appropriate support and services, youth and adults with mental health problems experience less favorable educational outcomes and youth with MI are more likely to be suspended from school than their peers (Breslau, Javaras, et al., 2008; Porche et al., 2011; Vander Stoep et al., 2003). For example, Krezmien and colleagues (2006) compared school suspension among students with and without disabilities, and found that students who
were labeled with “emotional disturbance” fared the worst compared to disabled and non-disabled peers. The association was even more pronounced for certain racial/ethnic groups. Whereas white students with emotional disturbance had nearly nine-times the odds for suspension compared to white students without any disability, African American students with emotional disturbance had nearly fourteen-fold odds for suspension (Krezmien et al., 2006).

In addition to difficulties in academic achievement, both students with mental health problems and those who are experiencing trauma at home are at an elevated risk for peer victimization (Finkelhor, Ormrod, & Turner, 2007; Moses, 2010). Bullying is a form of peer-victimization that is characterized by aggressive verbal, physical or relational (e.g. spreading rumors) behavior that is explicitly intended to harm a less-powerful other, repeatedly, over time (Nansel et al., 2001). Bullying is pervasive in schools across the United States and upwards of 20.0% of American youth report some form of bullying (Nansel et al., 2001). While bullying was once considered a normal childhood experience, it has recently been recognized that neither bullying nor its sequelae should be regarded as typical (Finkelhor et al., 2007). Indeed, bullying can result in serious psychological distress among youth, and its effects may extend well into adulthood (Arseneault et al., 2010; Carlisle & Rofes, 2007; Duncan, 1999). Both cross-sectional and longitudinal research documents the association between bullying victimization and poorer mental health and psychosocial functioning (Carlisle & Rofes, 2007; Duncan, 1999; Espelage, Hong, & Mebane, 2016; Nansel et al., 2001). Students who are bullied report more internalizing mental health symptoms including insecurity, anxiety, depression and loneliness relative to their peers (Nansel et al., 2001). In a qualitative study on the long-term effects of bullying, Carlisle and Rofes (2007) described how participants connected their early experiences with bullying in schools to avoidant attachment and difficulties in interpersonal relationships as adults. In a larger
study of college students, Espeleage et al. (2016), found that retrospective reports of bullying were associated with depression, anxiety and posttraumatic stress symptoms controlling for other forms of childhood victimization.

Despite the complex interactions among mental illness, trauma, bullying, and education, little is understood about how adults with mental illness interpret and make meaning around the role of schools in their lives. In order to better understand this, the present study uses 45 qualitative interviews with mental health service users to answer three primary research questions:

1. How do adults with mental illness remember and make meaning around experiences of marginalization in schools?
2. How do they relate trauma and mental health problems to their schooling?
3. How does schooling relate to their wellbeing and marginalization as adults?

**Method**

The data used in the current study were collected as part of a multi-stage, mixed-methods study exploring the role of limited literacy in the lives and recovery of public mental health service users. Data was collected using a Consumer Based Participatory Research (CPBR) approach in which a Consumer Consulting Group (CCG) provided input at different phases of the research. The CCG consisted of five mental health service users attending one of the study sites. Specifically, the CCG provided guidance regarding recruitment and aided in developing the research instruments. The research was approved by the institutional review board at each participating institution.

**Participants**

Participants were selected from two urban, public, mental health outpatient clinics. Site 1 was a large safety-net hospital affiliated with an academic hospital. There are no eligibility criteria required to receive services at Site 1, and patients are served regardless of their financial
resources and insurance status. Site 2 was a state-funded, outpatient mental health facility affiliated with a teaching hospital. Patients at this site were required to meet Department of Mental Health eligibility criteria including the diagnosis of serious and persistent mental illness. Both sites serve racially and ethnically diverse patient populations with a wide range of mental health diagnoses.

Patients aged 18 and over, who spoke English, and received services at one of the sites were eligible to participate. First, structured interviews were administered to 294 participants. Medical record review data including diagnostic information was collected from 263 participants who consented to have their records released. Then, a subset of forty-five participants who had completed the structured interview were sampled to participate in the qualitative interview. Purposive sampling was used in order to oversample individuals with limited literacy based on the battery of literacy assessments administered in the structured interview. At Site 1, 20 interviews, including 12 with participants with limited-literacy were conducted. At Site 2, 25 interviews, including 19 with participants with limited-literacy were conducted.

**Materials and Procedure**

The semi-structured qualitative interview guide was developed based on preliminary analyses of the structured interview data in collaboration with the CCG. The interview consisted of questions examining the role of literacy in participants’ day to day lives, experiences with stigma and discrimination, ideas about recovery, and experiences in educational settings. The interview guide is presented in Appendix 1. Interviews were conducted by two graduate students and the project manager, all of whom were trained to administer the interview. The interviews were approximately 30 to 60 minutes in duration. Forty-four interviews were audio-recorded, and for the remaining interview, the interviewer took detailed notes.
The data were analyzed using thematic analysis (TA) in order to identify common experiences and patterns of meaning shared among the participants in our sample. TA is a flexible method of qualitative analysis, which can be conducted within a variety of research paradigms (Braun & Clarke, 2012, 2014). Our analysis process was inductive meaning that “the codes and themes derive from the content of the data themselves” (Braun & Clarke, 2012, p. 58).

The thematic analysis was conducted in two stages following the steps laid out by Braun and Clark (2012). First, a qualitative research team consisting of the project manager, a graduate student, and the principle investigator reviewed three transcripts and underlined information deemed relevant to the original research questions. After convening as a group to review the underlined data extracts, the team created tags. The tags were one or two-word descriptions of the underlying text. The project manager organized the tags into clusters containing related information. The team reviewed the clusters of tags and generated preliminary codes. Codes were further developed through an iterative process in which the codes were reviewed and refined by the team until they reached mutual agreement regarding their definitions. The project manager then coded all 45 transcripts, and the graduate student coded every fifth transcript to ensure consistency in the coding.

In the second qualitative analysis stage, M.E. read and listened to a subset of ten transcripts. She coded this subset according to the original codebook developed in stage one in order to establish consistency between her coding and the original coding. She then read the 45 transcripts and listened to interview recordings for clarification when necessary. M.E. underlined information that was relevant to the specific research questions presented in this paper and used these data to generate several new tags. These tags were organized into new codes and reviewed by A.L. M.E. then read all of the transcripts and applied the new codes where appropriate, as
well as applying original codes when they appeared to be missing from the original iteration of coding. Some of the new codes developed overlapped with existing codes. For example, the code “school discipline” often overlapped with the original code “leaving school.”

**Results**

**Participant Demographic and Diagnostic Data**

On average, participants were 47.9 years old (SD=12.8 years). The majority of participants identified as black (44.2%) or white (42.2%). About forty-percent of participants had not completed high school or had obtained their GED. Almost thirty-percent of participants had a high school diploma and 31.1% of participants had attended some college or graduated from college. Diagnostic data were missing for 10 participants, five of whom did not consent to releasing the MRR and five participants for whom the MRR could not be located. Among those with an available MRR, all participants had been diagnosed with at least one mental illness. Psychiatric comorbidity was high in this sample with over sixty percent receiving two or more diagnoses. Approximately sixty-two percent of participants had been diagnosed with a serious mental illness including schizophrenia, bipolar disorder, and major depressive disorder. Over one-third of participants had been diagnosed with any depressive disorder. Just under one-third had been diagnosed with posttraumatic stress disorder (PTSD), and 37.8% were diagnosed with a substance use disorder.

**Qualitative Data**

Although no medical data prior to adulthood was collected, information regarding mental health diagnoses and treatment or service use during participant’s childhood and adolescence was gathered from the semi-structured qualitative interview. About one-half of participants described receiving some form of mental health care or treatment while they were still in school. Some participants reported having psychiatrists and therapists. Others reported psychiatric
hospitalizations related to suicide attempts and drug overdoses. While about one-half of participants did not receive any type of mental health treatment or diagnosis while in school, many described experiencing mental health problems and exposure to violence and trauma.

We identified four major themes in relation to participants’ experiences in school. These themes capture a reciprocal relationship among institutional practices, exposure to trauma and violence, and mental health. Problems in one domain often led to problems in other domains. As one participant described “It was both. [school] became messin’ with my mental health… then the mental health side messin’ with school. So, it went, I think, both ways.” The four major themes we identified were:

1. “My education, it wasn’t being met”: Perceptions of educational quality and support
2. “We don’t think you can make it in school”
3. “Problems at home lead to problems in school”: The impact of violence and trauma at home on school
4. Relationships with peers: Bullying, fighting and social isolation in school

“My education, it wasn’t being met”: Perceptions of educational quality and support

Participants voiced discontent regarding the quality of the education that they received in school. Even among participants who had graduated from high school, many believed that they hadn’t acquired the basic knowledge and skills such as reading. In order to learn these skills, participants felt that they had to go about it on their own. For instance, one participant stated “And I feel like the class that I was in, they didn’t give me the proper, you know, training, to teach me how to go about, you know reading and stuff. I had to do it basically all from what I know.” Additionally, participants described a pattern of being “passed through” the educational system. Some participants were advanced to the next grade level without meeting the necessary achievement requirements. This led participants to feel “cheated” out of their education. Underlying this concern, was the sense that it was easier for the schools to give them “a way out,” rather than supporting their unique learning or emotional needs. As one described, “It’s like
they gave me a way out, but they gave me the wrong way. I don’t want a way out, but they cheated me.”

In addition to discontent about the educational quality of the schools, they also noted the absence of emotional support provided by schools. While the majority of participants described how both mental health problems and the trauma that they experienced at home impacted their experiences in school, many also reported that resources to support their mental health needs were not in place in the schools. One participant who was dealing with both bullying in school and problems at home described how she needed a safe space to go and cool off when she was upset. However, the school didn’t provide this and walking out often resulted in suspension. She said “I was actually 18 and nobody really just said, just took me aside and just talked to me. Every time I would try to go off on a walk, I would either on a pass or get suspended.” They also described the specific types of resources that they believed would have helped them in school such as one-on-one support from teachers to help them learn to express their emotions in different ways.

**Special education and alternative schools**

The forces of stratification were clearly at play in participants’ narratives of school, and special education was the most common way that schools attempted to support students’ needs, although they often fell short. About one-third of participants reported placement in special education classes or alternative schools for students with special needs. Participants were of two minds regarding special education and alternative schools. On one hand, while they revealed a desire for enhanced support in school, several did not consider the special education classes to be helpful because the educational content was lacking in these classes. These participants reported that not much learning went on in special education classes, and the teachers functioned as
babysitters rather than providing instruction or school work. This was frustrating for participants who wanted to learn and further their education. As one participant described:

And even now, when I look back now, them teachers should have been fired. We didn’t learn anything, and we passed. They would be sitting there at their desk while we were just sitting there talking or whatever. There was really no school work going on in the special education classes at the time. Whereas if I would have been pushed…take a little more time be tutored.

Participants also expressed that special education was often geared towards students with behavioral problems, which they distinguished from their own emotional problems. For example, one participant said: “The other schools were dealing with behavior. That wasn’t the problem.” and another described the special education classes as “smaller classroom setting with, probably, kids that have behavioral issues that I didn’t have.” Additionally, taking classes with students with behavioral problems made it difficult for them to concentrate in school. One participant said that he had “problems with dealing with what the other students had” in the special education classes. He went on to describe how transitioning into the general education class where “the majority of the kids were there to learn and had a desire to learn” (219) was helpful for managing his own ADHD.

On the other hand, several participants who described being in special education found this separation helpful. Participants described these classes as respecting their individualized needs, affording them greater freedom to learn what interested them, providing individualized support, and holding them accountable for their education. These factors inspired them to complete the work and remain in school. One participant said: “It was really small classes a lot of teacher attention and that really worked for me. When I have accountability it sort of made me do more work.”
“We don’t think you can make it in school”

In addition to the poor educational quality and the lack of emotional support that participants experienced in the school, they described being treated and spoken to in ways that actively discouraged them from staying in school. Sometimes these messages were transmitted directly to participants from school staff. However, more often, the messages from the schools were transmitted subtly through institution wide practices and policies. These practices included tracking into special education classes, and frequent suspension and expulsion from school. The synergy among school practices, inadequate resources, and the absence of positive reinforcement impacted participants’ education and self-esteem. One participant described the consequences of their mental health symptoms coupled with dropping out of school:

My first two high schools were just really bad ideas in different ways. And I just felt extremely alienated and so I just started getting depressed and I started getting even more alienated and even more depressed. So next I stopped going to school and I sort of felt like a complete failure…so I started to think of myself as a delinquent as someone who is not a student.

Participants explained that when school staff behaved indifferently to their learning, they found it difficult to care themselves. One woman said, “But when I got to high school, felt like they didn’t care, so I didn’t care…and I dropped out.” (157). Additionally, many participants experienced exclusionary discipline in school including detention, and out of school suspension and expulsion. This exclusion sent the message that “the schools didn’t want [them]”. As one woman described, “I got kicked out of that school and had to go to another school. And mostly all the schools didn’t want me when they looked at my school record”.

Violence and Trauma: “Problems at home led to problems at school”

Trauma and violence in participants’ lives figured prominently into their narratives about school. Many participants reported childhood physical or sexual abuse including rape and
beatings by relatives and caretakers. Several participants described the ways in which the consequences of trauma impacted their ability to stay focused and do their school work. The connection between both the emotional and cognitive consequences of trauma, and the learning difficulties participants encountered in school was reiterated across interviews. These consequences of trauma led to difficulty concentrating, blackouts, dissociation, and an inability to ‘free [their] mind’ and had a direct negative impact on participants’ ability to do school work and their academic outcomes:

I couldn’t wrap my head around math, you know. I think it was cuz of the abuse it was like I was suppressing so much. You know feeling and thought and stuff, sort of afraid, and stuff so I couldn’t free my mind up, so I could really absorb like how much two and three is, you know I just couldn’t. I had too much on my mind.

Another participant described how early sexual abuse made it difficult to read and think as he was able to prior to the abuse: “And I got to a place I couldn’t think like I used to, read things like a I used to. Figure like I used to.”

Abuse from parents and caretakers also highlighted the absence of trusted adult figures to care for participants and provide them with safety or security in their early lives. Participants who lacked adult caretakers were responsible for supporting themselves physically and emotionally, which left little time for school work. Without being held accountable, these participants were less likely to stay engaged in their school work. For instance, one participant said “My teenage years were awful, I actually didn’t finish high school. I was on my own at 16. I really didn’t have no one to answer for, so I just you know didn’t go.”

**Relationships with Peers.**

Distressing interactions with peers arose repeatedly in participants’ accounts of what they didn’t like about school. In particular, participants described being bullied by their peers and getting into physical fights with other students. As a result of these experiences many
participants described feeling socially isolated, ‘hating school,’ and wanting to leave school. Bullying took on multiple forms including being beat up, teased, and ostracized. Others talked about having things stolen from their lockers or being the butt of practical jokes. Participants described bullies attempting to get a rise out of them to see how they would react or how far they would go. Many attributed the bullying they experienced to ways in which they stood out and were perceived as different from their peers such as having a cleft lip, their weight, or their style of dress.

I used to get teased a lot, I used to get beat up a lot…because I had a cleft lip, they used to call me names…they used to tease me all the time. You know I’d go home and cry and stuff, but I hated school.

Often, however, bullying was indirect and relational. Rather than verbally or physically assaulting the victim, bullies would use tactics such as spreading rumors to isolate the victim from peers. As one participant described “I was so unpopular with people that girls I had gotten along with in grammar school, it was almost like unpopular to be friends with me. They would get picked on for being my friend.”

Bullying was primarily perceived as social rejection, and it took a toll on participants’ self-esteem. Several participants described bullying as a reason that they didn’t want to go to school. As one said “I got to the point that I didn’t want to go to school. Yeah, I felt bad about myself. Another participant described not feeling “good enough for them [the bullies].” Although this was not the norm among interviews, one participant directly linked bullying to their mental health. She described bullying as transforming her into a “crazy person” and impacting her ability to trust others: “People started stealing, stealing out of my locker. And I think that’s what started transforming me into this crazy person…I feel like I couldn’t trust nobody.”
Descriptions of physical altercations with peers, and sometimes teachers came up often. Sometimes fighting was a way to cope with harassment and bullying from peers:

That’s why I got into fights. Cuz I didn’t get to know people as well, and then they would come up to me, and say like ‘why do you have a white mother and a black father?’ I would get mad and slug on one or something.

Participants didn’t only talk about fighting as a response to bullying, others talked about fighting as a way to fit in at school and gain popularity. For example, one said “I used to get into fights back then. I think between sixth and eighth grade I used to get into fights all the time to be more popular.” However, several participants described their resistance to engaging in fights, even when they were being egged on by an antagonistic peer. For instance, one participant described a bully who was constantly trying to get her to engage in a fight, which the participant resisted. “And this bully Susan, she tried so hard to get me to fight her. I wouldn’t do anything, and she didn’t understand that, you know why I wouldn’t fight her. You know, and she would do everything to get my goat and she would throw bubble gum in my hair anything she could think of.” Nearly all of the participants were bullied described feeling helpless and unable to stop the bullying. For example, one participants described “I was picked on by almost everybody. And I really couldn’t do anything they would get away with it. I would get in trouble and push comes to shove I would get suspended from school.”

Discussion

Participants in our study experienced multiple forms of marginalization in schools and at home. In addition to mental illness, particularly SMI, histories of trauma were common, and the majority of participants faced diminished educational and employment outcomes as adults. The analysis presented here suggests that their experiences in primary and secondary school played a
powerful role in shaping their disadvantaged social position as adults. In particular, experiences of marginalization in school ranged from stratification into poorly resourced classes and programs to social exclusion from peers and school communities. Consistent with scholarship documenting the social reproduction of inequality in schools, our findings highlight the roles of stratification and socialization processes for shaping participants’ educational trajectories and their social status as adults. To date, most research on social reproduction has focused on the reproduction of socioeconomic and racial inequality. Students who are socioeconomically disadvantaged, and students of color tend to have fundamentally different educational experiences compared to their advantaged, often white peers. For example, students who come from more marginalized backgrounds typically attend schools of poorer quality (e.g. have higher pupil-teacher ratios and fewer educational resources) and often receive different treatment by school personnel compared to their peers (e.g. are more likely to be suspended or expelled) (Walsemann, Gee, & Ro, 2013). Our findings suggest that in addition to the reproduction of socioeconomic and racial inequality, primary and secondary schooling has important implications for the marginalized social position of adults with mental illness.

Children and adolescents spend more time in school than in any other social institution and schools play a critical role in their socialization, imparting values, mores, and behavioral standards to students. Socialization is achieved through the “rules and routines” that make up a typical school day such as detention for inappropriate behavior or waiting in line in the cafeteria (Brint, 2017). Socialization also serves to both construct and reinforce existing social inequalities and the socialization literature is rife with examples of racial, gender, and class bias in the classroom (Brint, 2017). Similarly, differences have been observed in the socialization of students who fall outside the realm of what is regarded as intellectually, physically, or socio-
emotionally typical in schools (Sherman, Rasmussen, & Baydala, 2008; Shifrer, 2013). For example, teachers alter their behavior when working with students with learning disabilities (Shifrer, 2013) and ADHD (Sherman et al., 2008), significantly influencing students’ academic achievement, behavior, and self-concepts.

In this vein, the participants interviewed encountered both direct discouragement from teachers and more subtle school-level practices that tempered their personal aspirations and educational expectations and limited their academic achievement. This was especially apparent in the practice of being passed to the next grade before students had met the academic requirements, simultaneously signaling school personnel’s lack of confidence in participants, and directly inhibiting them from gaining necessary academic skills. This echoes findings from our larger study of literacy among public mental health service users (Lincoln et al., 2017). Even among participants who had graduated from high school, we identified a high prevalence of limited literacy, suggesting that marginalization within school also may also contribute to their disadvantaged social position as adults. While literacy is critical for academic achievement in school contexts, limited literacy inhibits full participation in the major institutions of social and civic life in adulthood (Lincoln et al., 2017). For example, limited literacy is a barrier to following transportation timetables, reading the news, voting, and filling out job applications. Furthermore, limited literacy serves as a barrier in healthcare settings causing difficulties interpreting clinical jargon and following treatment regiments, which may be particularly problematic for participants as they manage multiple mental health problems and physical ailments (Lincoln et al., 2008).

Finally, these data speak to the multiple forms of social exclusion that adults with mental illness face in primary and secondary school settings. Social exclusion was both interpersonal
and institutional in nature. At the institutional level, frequent suspensions and expulsions effectively banished them from school communities, contributing to both social dislocation and academic failure. High rates of suspension and expulsion in American schools have generated considerable attention over the last decade and research suggests that they are associated with a host of long and short-term consequences for students. These consequences include increased rates of school dropout, contact with the criminal justice system, and poorer mental health (Rushton et al., 2002; Wolf & Kupchik, 2017). This is especially concerning given the high rates of trauma exposure among participants in our study. Punitive responses to trauma-related behavior can be especially harmful, as West notes “[traumatized] students are at risk of ‘sanctuary trauma’—exacerbating their trauma experience—as they manage exposure to triggers and other stimuli from the environment.” (2014b, p. 63).

At the interpersonal level, victimization by school peers was not only traumatizing, but alienated participants from potential friends, peer groups, and wider school communities. The emotional toll of social exclusion on mental health has been widely explored and the type of supportive, reciprocal relationships that are recognized for protecting against mental health problems (Moses, 2010) were largely absent from participants’ experiences in school. While a few participants attributed bullying and exclusion to their perceived physical abnormalities, many did not identify a source for their victimization or exclusion. It is possible that peers distance themselves in reaction to the symptomatic behavior displayed by participants in school. Consistent with this, many in our sample disclosed problematic behaviors and emotional reactions in school such as withdrawal, aggression, and dissociation (Moses, 2010). Accordingly, we posit that youth with mental health problems are stigmatized by their peers, e.g. perceived as different from the “significantly powerful” “in group” members due to the presence of a
particular personality trait or identity (Phelan, 2005) leading to discrimination, victimization and social exclusion.

Together, our findings highlight the multiple forms of disadvantage that participants contended with in primary and secondary schools. Further, their exposure to multiple forms of disadvantage and exclusion in schools remain prominent in their lives as adults. An important strength of this study is our use of the CPBR design. Specifically, the CCG was instrumental in all phases of research from developing the informed consent to interviewing participants. The CCG provided us with input that reflected the unique experiences and social position of public mental health service users in order to establish mutual respect with participants and develop relevant and sensitive interview items. We were also able to combine data from multiple sources including the medical record review. This provided us with rich diagnostic and sociodemographic in which we could contextualize findings from the in-depth qualitative interviews.

Limitations

Our study has several important limitations. Our interview was designed to study literacy in the lives of public mental health service users. Although a large portion of the interview addressed experiences in school, these questions were broadly worded and additional questions or prompts surrounding these experiences may have benefited the interpretation of these findings. Despite this, participants often described their experiences in school in relation to other sections of the interview (e.g. those related to social exclusion and stigma). Second, we asked participants to recall upon experiences from several decades prior. Therefore, it is possible that participants misremembered specific experiences or events. This may be a particular concern in this sample due to cognitive problems associated with prescribed psychotropic drugs, as well as cognitive impairments related to serious mental illness and long-term substance abuse.
Conclusion

This research contributes to the nascent qualitative literature examining the role and meaning of school among adults with mental illness and, to our knowledge, is the first to focus on primary and secondary schooling. Here, we documented that the role and meaning of school is shaped by a constellation of interpersonal and institutional factors that impact participants’ wellbeing long after their schooling has ended. We suggest that these factors influence participants’ marginalized social position in adulthood through constraints placed on learning and educational attainment, and social exclusion. Accordingly, we propose several important implications for future research and practice. First, we focused specifically on schooling among adults with mental illness. Given the important ways in which schools reproduce social inequality across the lines of race and socioeconomic status, future research should explore the intersections among multiple identities to understand similarities or discontinuities in the role and meaning of school among adults with mental illness.

Second, by 2030, the population of adults over the age of 65 is expected to reach 71.5 million (Centers for Disease Control and Prevention, 2009a). Yet, according to data from the National Assessment of Adult Literacy (NAAL), adults over the age of 65 have the lowest prevalence of functional literacy (as measured by prose, document, and quantitative literacy) among all age-segments of the adult population (Kutner, Greenburg, et al., 2007). Given remarkable gains in the longevity of older adults, it is critical that we work to promote their full participation in society. Although initial steps have been taken to better understand and improve health literacy among older adults (Centers for Disease Control and Prevention, 2009a), there is much work to be done to address the limited functional literacy in this population. While formal education has often been reserved for the young, our findings underscore a growing need for
literacy education among older adults, particularly those with mental illness in order to promote their autonomy, social inclusion, and full participation in society.
Table 4.1. Participant Demographic and Diagnostic Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>n (%) or m (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study site</strong></td>
<td></td>
</tr>
<tr>
<td>Site 1</td>
<td>20 (44.4%)</td>
</tr>
<tr>
<td>Site 2</td>
<td>25 (55.6%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>47.9 (SD=12.8)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>19 (42.2%)</td>
</tr>
<tr>
<td>Female</td>
<td>26 (57.8%)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
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</tr>
<tr>
<td>Less than high school</td>
<td>15 (33.3%)</td>
</tr>
<tr>
<td>GED</td>
<td>3 (6.67%)</td>
</tr>
<tr>
<td>High school</td>
<td>13 (28.9%)</td>
</tr>
<tr>
<td>Some college</td>
<td>8 (17.8%)</td>
</tr>
<tr>
<td>College graduate and above higher</td>
<td>6 (13.33%)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>19 (42.2%)</td>
</tr>
<tr>
<td>Black</td>
<td>20 (44.4%)</td>
</tr>
<tr>
<td>Multiple</td>
<td>5 (11.1%)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (2.2%)</td>
</tr>
<tr>
<td><strong>Diagnoses</strong></td>
<td></td>
</tr>
<tr>
<td>Any depressive disorder</td>
<td>19 (42.2%)</td>
</tr>
<tr>
<td>Major depressive disorder</td>
<td>16 (35.6%)</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>12 (26.7%)</td>
</tr>
<tr>
<td>Bipolar disorder</td>
<td>5 (11.1%)</td>
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<tr>
<td>Substance use disorder</td>
<td>17 (37.8%)</td>
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<tr>
<td>Anxiety disorder</td>
<td>8 (17.8%)</td>
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<tr>
<td>Posttraumatic stress disorder</td>
<td>13 (28.9%)</td>
</tr>
<tr>
<td>Serious mental Illness</td>
<td>28 (62.2%)</td>
</tr>
<tr>
<td>Two or more diagnoses</td>
<td>28 (62.2%)</td>
</tr>
<tr>
<td>Missing medical record review</td>
<td>10 (22.2%)</td>
</tr>
</tbody>
</table>
Appendix 4.1. Qualitative Interview Guide

1. So we have just gone through the consent process again. This is a pretty wordy and complicated document. We know a lot of people struggle with this form, which is why we summarize it. These types of forms are often used in health care. What was it like for you to read through the consent form?
   a. Can you remember other times you’ve come across these kinds of documents (maybe a medical document or one for housing)? What was that like?
   b. If you have trouble, what do you do?

2. A number of other people have mentioned to us how often reading difficulties come up in everyday life and how hard they are to talk about. Think back to the last thing you read (other than our consent form) that gave you trouble – can you remember what that was?
   [Identify document, sign, internet post, menu, religious prayer, whatever: __________ ]
   a. How would you describe the difficulty?
   b. How did you manage to get around it? [THEN: comment on the effort involved – Wow, that sounds like a lot of work! Or: That’s a really ingenious solution! Something positive.]

3. What about when you have an appointment at the clinic – can you tell me what sort of reading challenges occur there? I’m thinking of things like filling out forms, reading prescriptions, understanding psychiatric jargon, figuring out appointment schedules, etc. Do any of those things give you trouble?
   a. How would you describe these kinds of challenges? [Can you give me an example?] 
   b. How do you manage to get around it? [THEN: comment on the effort involved – Wow, that sounds like a lot of work! Or: That’s a really ingenious solution! Something positive.]
   c. Clinicians will often talk about side effects of medications and their likelihood. For instance, they might say something like, “this medication has a 5% chance of causing headaches or weight gain.” This can be really confusing and difficult for people. Have you ever had something like this happen?
   d. What about prescriptions? Sometimes a doctor or pharmacist might say something like “Take 2 pills 3 times a day.” Do you ever have any trouble with those kinds of instructions?
e. If yes, what is this like for you? [What do you do? Is there anyone you can ask for help? If so, who?]

4. How about more generally with respect to mental health: where do you find the most useful information about your mental health?
   a. Identify volunteered sources: ________________________________

   b. How do you get this information and make use of it? Explore how reading/interacting (e.g., internet discussion) figures in these venues:

      Briefly describe:
      PROBE: If few/nothing mentioned beyond clinic, mention possible sources – what about brochures or informational sheets, self-help groups, the internet or advocacy groups?

   c. What about giving someone else information about mental health – have you done that with any friends or acquaintances?
      i. IF yes, briefly describe:
      ii. Have you ever tried writing down some of what you’ve learned about managing mental health issues? How did that go?

5. Now, let’s talk a bit about what school was like for you. Some people have really different kinds of experiences in elementary school than they do in junior high & high school, so we can talk about both.

   In general, what was elementary school like for you? [Did you like it or dislike it? Why?]
   What about junior high & high school – what was that like?
   a. Was there a school subject you liked most?
   b. …..least?
   c. What did you like most about school?
   d. What did you like least?
   e. Were there things that made school hard or difficult for you?
   f. Do you think that your health or mental health impacted school?
   g. What helped with those challenges?

6. We have had a lot of people talk to us about times they have been treated poorly or with less respect than other people because they have a mental health problem or use mental health services. Some people talk about stigma. Can you tell us about these types of experiences you have had? Or stigma or discrimination you have experienced?
a. because you use mental health services?
b. related to difficulties with reading or math?
7. Finally, have you ever heard – or read about – recovery in people who use mental health services? If yes: What's your sense about how it works – what does it means for someone using services to recover?
CHAPTER 5 Conclusion

Taken as a whole, the three studies comprising this dissertation highlight the ways in which schooling, above and beyond educational attainment, impacts mental health and wellbeing. Although many examinations of the influence of educational attainment on mental and physical health exist in the literature, scholarship investigating other aspects of schooling has emerged only recently. This nascent scholarship has identified how facets of schooling including school resources, academic tracking, school segregation, and the psychosocial environments of schools influence both physical and mental health (Frisvold & Golberstein, 2011; Goosby & Walsemann, 2011; Walsemann & Bell, 2010). This research has helped us to develop a richer understanding of the ways in which inequality is socially reproduced through educational institutions, and how this inequality manifests on the physical and mental health of populations lending to disparities in health and wellbeing. Informed by social reproduction theory and a life course framework, this dissertation was undertaken in order to build upon this literature by examining how the institutional policies and interpersonal dynamics within schools contribute to health and wellbeing from adolescence into adulthood.

Whereas it was once believed that education served as the great equalizer, enabling social mobility, social reproduction theory posits that schools both legitimize and perpetuate social inequality (Brint, 2017). As discussed, social reproduction in schools occurs through the processes of stratification and socialization, which synergistically shape educational expectations, aspirations, outcomes, and interpersonal dynamics in school settings. Stratification refers to the ways in which students are sorted across schools and classrooms. Importantly, students are often sorted across socioeconomic and racial/ethnic lines (Brint, 2017). Socialization, on the other hand, refers to the explicit and implicit messages that are conveyed in
schools and serve to privilege specific groups of students. In particular, stratification and socialization often enable privileged segments of society to maintain their social status and resources while inhibiting marginalized groups from the access to these resources. While the role of social reproduction in education for shaping social inequality is well established in sociological and educational literatures, historically, its relevance for health has not been fully leveraged.

**Multi-methods Approach**

To address this, we examined how the processes of schooling influence mental health by employing a multi-methods approach. This approach allowed us to integrate findings from complementary qualitative and quantitative analyses to inform a richer, more detailed interpretation of findings and their implications (Johnson, Onwuegbuzie, & Turner, 2007). To this end, we used a nationally representative dataset to, first, examine the collateral consequences of exclusionary discipline policies on depressive symptoms among non-excluded students. Secondly, using the same dataset, we examined the cumulative influence of prejudice in adolescence with discrimination in early adulthood on depressive symptoms. Then, in the qualitative study comprising the fourth chapter of this dissertation, we used 45 interviews with public mental health service users to gain insight into the role and meaning of primary and secondary schooling.

**Summary of Three Studies**

In chapter 2, we used a multilevel modeling approach to examine the impact of exclusionary school discipline policies on depressive symptoms among students who have never been suspended or expelled. This study extended the theory of collateral consequences to school settings, positing that exclusionary school discipline not only leads to diminished achievement and wellbeing among excluded students, but also impacts their non-excluded peers by disrupting
students’ sense of connectedness to the school. Consistent with our hypothesis, we found that exclusionary discipline policies were associated with a small but statistically significant increase in depressive symptoms among non-excluded students, controlling for a comprehensive set of school and individual-level factors that are associated with depressive symptoms. In the second set of models, we examined whether or not the association was explained by individual student’s sense of school-connectedness and two dimensions of school-connectedness, perceptions of school safety and teacher fairness. Once school-connectedness was added into the model, the association between exclusionary discipline was completely attenuated. We suggest that in schools with more exclusionary policies, the frequent movement of students out of the school may disrupt the formation of healthy relationships among students. Additionally, more exclusionary and punitive disciplinary policies may inhibit students and teachers from establishing strong ties with one another.

In Chapter 3, we tested an accumulation hypothesis for perceived prejudice and discrimination across the life course. This study was built upon the central propositions of stress theory (Thoits, 2010): 1) Stressors are unevenly distributed across the population; 2) The uneven distribution of stressors across the population corresponds with social position such as SES and race/ethnicity; and 3) as the quantity and duration of stressors accumulate, they exert a stronger influence on mental health and wellbeing compared to isolated stressors. Accordingly, we hypothesized that participants who were exposed to discrimination during both adolescence and young adulthood would present with higher levels of depressive symptoms compared to those who were not exposed to discrimination and those exposed during one period alone. Secondly, we hypothesized that the association between cumulative discrimination and depressive symptoms would be modified by race/ethnicity.
We found that the influence of perceived peer prejudice during adolescence and discrimination in young adulthood was cumulative in nature. Participants who reported discrimination during both periods had significantly higher levels of depressive symptoms compared to those who had not experienced peer prejudice or discrimination in either survey wave. This finding was consistent in our analyses of the full sample and those stratified by race/ethnicity. We also found that perceived discrimination during one period was associated with a significant increase in depressive symptoms compared to no exposure to discrimination at either wave. These findings provided preliminary support for an accumulation of discrimination hypothesis.

Chapter 4 builds on themes from both chapters 2 and 3, providing a more nuanced understanding of the institutional and interpersonal qualities of schooling that also contribute to wellbeing. Using 45 qualitative interviews with public mental health service users, we explored the role and meaning of primary and secondary schooling in the lives of adults with mental illness. Four themes were identified in these interviews. First, participants felt that their educational and emotional needs were unmet by the schools. Second, participants felt that the schools did not believe they could succeed. These attitudes were internalized by participants and influenced their academic performance and decisions to drop out of school. Third, bullying and social exclusion from peers at school was a salient source of distress among participants. Finally, we found that, within our sample, exposure to trauma including physical and sexual abuse, and neglect, were exceedingly common. Participants’ exposure to trauma and emergent symptoms of mental illness posed both emotional and cognitive difficulties for participants which impacted their ability to function academically and socially in school.
Synthesis of Three Studies

Taken together, the studies comprising this dissertation fill gaps in the literature by highlighting three central themes: First, each study reveals how the processes of schooling, including socialization and stratification, reproduce social inequality. Further, social inequality transmitted through the processes of schooling patterns exposure to social disadvantage and stressors that contribute to diminished wellbeing in the short-term and over time. Second, relationships with ones’ peers and teachers are salient for mental health, and school environments influence the formation of relationships among students and teachers within schools. Finally, exposure to social disadvantage and stressors in schools not only impacts mental health and wellbeing during adolescence but also influences mental health and wellbeing later in life.

Social Reproduction of Inequality

Inequality is considered to be “reproduced” through educational institutions because schools facilitate the transmission of social, cultural, and economic capital and these resources in turn shape one’s opportunities in adulthood. However, school resources are not distributed evenly across the population. Marked variation exists across schools in terms of quality, resources, and policies. In particular, students from socially advantaged backgrounds, particularly white students and students from higher SES families, are granted educational resources that enable them to maintain their privileged social position as adults. Here, we focused on one form of inequality across schools: exclusionary school disciplinary policies. Schools in which the majority of students are black and Hispanic, and come from socioeconomically disadvantaged backgrounds have significantly higher rates of suspension and expulsion (Christle et al., 2004). As a result, these students are not only more likely to experience exclusion, but their non-excluded peers are more likely to be exposed to the spillover effects of
exclusionary discipline. These spillover effects include diminished levels of school-connectedness and increased levels of depressive symptoms. Because disciplinary policies are so closely aligned with the racial and socioeconomic composition of schools, we posit that they may be an under-examined source of disparities in depressive symptoms among adolescent populations.

Further, the qualitative findings from our study of schooling among public mental health service users revealed some of the ways in which schools perpetuate social inequality at the individual level. The role of social stratification, especially in the form of tracking into special education, was central to many participants’ narratives of schooling. Participants discussed how special education courses failed to provide effective environments for learning. In addition to their failure to meet their educational needs, the absence of encouragement and support in special education dampened participants’ educational aspirations, which participants tied to academic failure and dropping out of school. These findings are important in light of differences in the application of policies that often cut across the lines of race/ethnicity, socioeconomic status, and disability status (Krezmien et al., 2006; Skiba & Rausch, 2006). Stratification into different schools and classrooms patterns the environmental and social stressors to which different segments of the population are exposed. When stratification aligns closely to marginalized social position, it can serve to exacerbate disparities in wellbeing across segments of the population who are already marginalized.

*Interpersonal Relationships and School Connectedness*

Each of the three studies within this dissertation highlighted the importance of relationships and social connections for wellbeing. Children and adolescents spend the majority of their waking hours in school settings and the relationships that they develop with their peers,
teachers, and other adults in schools are important sources of support and encouragement. On the other hand, interpersonal relationships can be sources of marginalization and victimization. In recent decades, scholars have underscored mutually respectful relationships among students and teachers as the basis for school connectedness (Furlong et al., 2011). In addition to relationships among students and adults in the school, perceptions of safety at school and the extent to which students feel a sense of belonging to the school community are also considered important aspects of school connectedness (Furlong et al., 2011). Although there are varying conceptualizations of school connectedness in the literature, it has been consistently linked to a range of positive mental health and behavioral outcomes (Resnick et al., 1997).

While the quality of these relationships is conceptualized differently within each of the three studies comprising this dissertation, each highlights the importance of interpersonal relationships for wellbeing. Importantly, our findings indicate that policies and practices within schools contribute to the social integration or dislocation of students. In Chapter Two, we found that school disciplinary policies impact school climate, thus influencing school-connectedness, an important protective factor against a wide range of emotional and behavioral problems among adolescence. In Chapter Four, we found that the poor educational achievement and outcomes among adults with mental illness have important consequences for their social integration as adults. Schools’ failure to meet the basic educational needs of students, such as reading, may influence full social integration in adulthood and older age.

**Role of Schools over the Life Course**

Life course frameworks are useful for understanding how experiences during infancy, childhood and adolescence all contribute to health and wellbeing in adulthood and older age. Here, we highlighted two elements of the life course framework. First, accumulation describes...
how multiple forms of disadvantage occurring either simultaneously or over the life course are linked to an accumulation of stress that is detrimental to both physical and mental health over time (Kuh, Ben-Shlomo, Lynch, Hallqvist, & Power, 2003). Second, disadvantage tends to proliferate, and one form of disadvantage tends to trigger a domino effect (Kuh et al., 2003). Consistent with the life course framework for stress, we found that the toll of discrimination on mental health was cumulative across adolescence and young adulthood. Participants who were exposed to discrimination or prejudice during multiple developmental periods had significantly higher levels of depressive symptoms as adults compared to participants who were not exposed, or exposed during one period only.

Additionally, among members of the qualitative sample, the majority of whom were older adults during the time of the interview, experiences in school were directly connected to their marginalized social position as adults. Among these adults, educational disadvantage in primary and secondary school influenced high school graduation and their access to college, both of which are associated with occupational and health outcomes in adulthood. Importantly, even among those who had graduated from high school, many had not acquired basic skills such as reading in school. While these skills are essential for many occupations, they are also necessary for full integration in society. Reading enables individuals to be autonomous participants in all aspects of society from reading the news paper to taking the bus, and are necessary in order to carry out civic duties such as voting. Failure on the part of schools not only inhibited participants’ occupational outcomes, but also influenced their exclusion from key social institutions as adults.

**Strengths and Limitations**

By leveraging a multi-methods approach to answer our research questions, we were able to first, explicitly test our hypotheses about how exclusionary school discipline and
discrimination impacted depressive symptoms using a nationally-representative sample of schools and respondents. The representative population-level data set allowed us to generalize these findings to the broader United States population. Although we were missing data for several important control variables including household income and educational attainment, we were able to account for this data in our estimates by using multiple imputation with chained equations in order to maintain our sample size and correct the standard errors of our estimates. Additionally, the comprehensive array of individual and school-level variables available in the Add Health Study allowed us to control for factors that could potentially confound the observed associations. The qualitative study allowed us to understand how a specific sample of adults made meaning about the role of schools and to identify patterns in their perspectives and experiences. These narratives simultaneously helped to illuminate the diverse ways in which school impacts mental health and wellbeing into older adulthood. Additionally, the themes that we identified in the qualitative interviews raised new questions that can be explored in future research using quantitative, qualitative, and mixed-methods approaches.

Nonetheless, these studies had several important limitations. In both quantitative studies temporality could not be established. Because discipline policies were only reported by school administrators in Wave I, we could not establish whether a change in discipline policies was associated with a change in depressive symptoms over time. In the study of cumulative discrimination, the outcome, depressive symptoms in adulthood was measured during the same time period as discrimination in adulthood, and there is the possibility of reverse causation. Additionally, data in the national longitudinal study of adolescent health was collected during the 1994-1995 school years, so our findings are only generalizable to schools during this time period. Similarly, in our study of mental health service users, the majority of participants
attended schools many decades prior, and their experiences likely differ from those in contemporary schooling.

**Recommendations for Policy and Practice**

Recently, public health researchers and professionals have advocated for a “health in all policies” approach to addressing social disparities in health (Rudolph et al., 2013). This approach calls for interdisciplinary action to address the social inequities responsible for health disparities. By extending current knowledge about the ways in which schools reproduce social inequality and contribute to disparities in health, this body of works provides several important implications for public health and education policy makers alike. First, best practices for school discipline have remained a divisive issue in the arenas of education and juvenile justice. Advocates for strict school sanctions such as suspension and expulsion claim that these practices deter school crime and improve the safety of schools for all students (Zimmerman & Rees, 2014). Yet, decades of research has revealed that exclusion does little to improve safety in schools (Cook et al., 2010; Zimmerman & Rees, 2014). Restorative justice programs in schools are a particularly promising avenue for addressing student misbehavior and handling conflict among students. Restorative justice in schools attempts to deter delinquency by developing community capacity in order to improve school safety and strengthen the connections among students and adults in schools (Payne & Welch, 2017). Given the relevance of school-connectedness for the health of students, restorative justice is promising not only for mitigating student misbehavior, but also for promoting wellbeing among students.

Second, taken together these findings add to literature supporting the need for trauma informed classrooms and teaching. The three primary goals of trauma-informed classroom management are to establish students’ safety, facilitate positive attachments with teachers, and support students as they learn to manage their emotions (West et al., 2014b). Accordingly,
educators should be made aware of the ways in which trauma manifests in the classroom and taught effective techniques for addressing trauma-related behavior in the classroom (West et al., 2014). Instead of punitive responses to trauma-related behavior such as suspension, which can be retraumatizing and alienate trauma exposed students, trauma-informed practices can be leveraged to encourage healthy attachment among students and teachers and improve students’ sense of safety (West et al., 2014b).

Finally, findings from our qualitative study highlight the far-reaching impact that schooling may have over the life course. As we continue to make gains in the life expectancy of older adults in the United States, it is essential that we also work towards promoting their full integration into society (Centers for Disease Control and Prevention, 2009a). Given that adults over the age of 65 have the lowest-levels of functional literacy of any age-group (Kutner, Greenberg, et al., 2007), programs that focus on the education of older adults are essential for ensuring their health and wellbeing as they age.

**Future Directions**

We propose several directions for future research. First, this dissertation highlighted the role that school-connectedness plays in linking school-level policies to student wellbeing. While there is ample evidence supporting the mental health and physical health benefits of school-connectedness, less is understood about how to best foster school-connectedness. To this end, qualitative and quantitative research should explore the perspectives of both students and educators in order to better understand the characteristics and practices of schools that can promote connectedness among students and adults within schools.

Secondly, social reproduction theory posits that schools reproduce broader social inequalities. Accordingly, research should examine the social context in which the associations between schooling and mental health are embedded. Research employing multilevel modeling
strategies can be leveraged to simultaneously examine the nested influence of schools and the contexts in which they are embedded (e.g. neighborhoods, geographic regions). Such research can inform a deeper understanding the relative influence of nested environments on mental health. Finally, such research may also improve our understanding how stressors originating from multiple contexts accumulate and proliferate across the life course.

Third, substantial evidence reveals that exclusionary school discipline disproportionately impacts certain segments of the population. Students from low-SES backgrounds, black and Latino children and adolescent, males, and students with disabilities, are all significantly more likely to be suspended or expelled from school compared to their peers (Aud et al., 2010). Given this, future research should examine the extent to which sociodemographic characteristics and disability status modify the associations between depressive symptoms and school disciplinary policies. Finally, our study focused on school disciplinary policies. Future research should also look at aggregate rates of suspension and expulsion in schools in order to understand how closely exclusion rates correspond to schools’ policies and to assess their association with mental health outcomes.


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