

School Absenteeism and Neighborhood Deprivation and Threat: Utilizing the Child Opportunity Index to Assess for Neighborhood-Level Disparities in Passaic County, NJ

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Abstract

Leveraging publicly available data about schools' absenteeism from the New Jersey Department of Education, the present study examined how neighborhood-level resource deprivation and violent crime related to chronic absenteeism in Passaic County's elementary, middle, and high schools. Results highlighted

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geographic disparities in Passaic County, New Jersey, whereby predominantly racial/ethnic, under-resourced, communities of color have significantly greater levels of resource deprivation and threat. Additionally, greater neighborhood-level resource deprivation and neighborhood violent crime were associated with higher rates and trajectories of absenteeism across three academic school years. These findings highlight the importance of considering neighborhood context in absenteeism prevention programs.

Keywords

academic achievement urban education, violence social, poverty social, minority academic success urban education

Absenteeism is a significant problem with long-term negative consequences for youth. A wealth of studies has highlighted the role of absenteeism on negative school outcomes (Allen et al., 2018). Many of these studies have focused on comparing students with higher versus lower rates of absenteeism and their subsequent outcomes (Gottfried, 2019). Yet, education research has acknowledged that few studies have focused on chronic absenteeism (Gottfried, 2019). The U.S. Department of Education defines chronic absenteeism as students who miss 10% or more of school days in a school year for any reason, which is equivalent to 18 missed days of school (Balfanz & Byrnes, 2012). Chronic absenteeism affects as many as 6.5 million students nationwide across elementary, middle, and high schools; research suggests that between 10% and 15% of U.S. students would be considered chronically absent by Balfanz and Byrnes 2012 definition. Rates of chronic absenteeism include both students who miss school for both excused and unexcused absences (i.e., those who are truant). Importantly, chronic absenteeism begins early—as many as 10% of kindergarten and first-grade students miss a month or more of the school year; a statistic that increases to 19% in high school students (Reyes, 2020). Research over the past decade has illuminated several reasons why students are absent from schools. Both quantitative and qualitative studies in this area have identified multiple themes, including family problems (e.g., children having to care for younger siblings or other family members), financial concerns (e.g., students having to work to contribute to family finances), environmental limitations (e.g., lack of affordable and accessible transportation to school), view of education (e.g., not viewing education as a priority), and school-to-parent communication (e.g., schools not informing parents about absent youth; for review, see Black & Zablotsky, 2018; Sahin et al., 2016).

Importantly, education policy efforts and conversations have centered around the negative effects of chronic absenteeism and how to reduce it (Gottfried, 2019). However, little attention has been given to the role of the built neighborhood environment and its association with chronic absenteeism. Additional research is needed to highlight the role of the neighborhood environment in contributing to chronic absenteeism and to inform comprehensive multi-system interventions to address chronic absenteeism at systemic levels. The goal of this study is to investigate neighborhood-level factors such as neighborhood resource deprivation and neighborhood violent crime as contextual predictors of school-level chronic absenteeism across three academic school years. Furthermore, the current study investigates geographic disparities in Passaic County, New Jersey with a special focus on Paterson, which is the largest city in Passaic County. Specifically, it hopes to highlight disparities in resource allocation, violent crime, and absenteeism between schools in resource-dense and resource-deprived areas located within the same county. The present analyses used publicly available data at the school-level to address these questions. Importantly, school-level data provides one unit of analysis to inform school administration and stakeholders about institutional-level outcomes and intervention recommendations to effect institutional changes for the better of all children. Furthermore, student-level data on chronic absenteeism and its effects can be biased as children who more frequently miss school are less likely to participate in these research studies (e.g., due to low responsiveness, or difficulty acquiring adequate consent/assent forms from parents/guardians; Johnson, 2014).

Neighborhood-Level Disparities in Student Absenteeism

Research highlights that chronic absenteeism, its antecedents, and negative outcomes are more pronounced in urban communities (Balfanz & Byrnes, 2012; Connolly & Olson, 2012; Gottfried, 2019). Traditional definitions of urban schools have relied on factors such as the school's geographic location and the population of the surrounding area. However, new definitions have challenged a population-specific perspective by focusing more broadly on the social context surrounding the school, which includes economic, social, and/or educational factors (Schaffer et al., 2018). Specifically, newer definitions incorporate factors such as poverty levels of a school's student population, racial and ethnic diversity, low achievement scores, inadequate facilities, or under-qualified teachers (Gadsden & Dixon-Roman, 2017; Schaffer et al., 2018). Milner and Lomotey (2014; Milner, 2012) suggests a framework based

on both the population and context of the surrounding community by recognizing systemic, social, economic, and academic factors that impact schools. This multi-tiered approach deconstructs the ambiguous “urban schools” term into three categories while recognizing common aspects and themes across these schools (i.e., urban intensive, urban emergent, and urban characteristic; for review, see Milner & Lomotey, 2014; Schaffer et al., 2018). The most well-known type of urban school, known as urban intensive, is found in large cities with populations of more than one million people. The second category, urban emergent, refers to schools located in cities with fewer than one million residents. Although the population is smaller than that of urban intensive schools, these urban emergent schools mirror the diversity in the student demographics found in urban-intensive districts. Milner’s third category of urban schools, “urban characteristic schools”, are in areas that many people would not consider urban. In fact, urban characteristic schools may be in suburban or rural areas with relatively low populations. However, like urban intensive and urban emergent districts, urban characteristic schools are also experiencing the same demographic “shifts and realities” seen in much larger districts (Milner & Lomotey, 2014). In the present study, urban schools in Paterson, New Jersey are consistent with Milner’s third category of urban schools—urban characteristic schools. Schools in Paterson have similar trends to population-dense urban areas, including (1) increased racial, linguistic, cultural, and socio-economic diversity in their student enrollments and (2) school neighborhoods characterized by greater resource deprivation, neighborhood violence, and systemic disinvestment (Milner & Lomotey, 2014; Milner, 2012; Sahin et al., 2016). The present study adds to the current literature as research has historically focused on these associations in urban intensive and urban emergent schools as these are more consistent with traditional definitions of “urban.”

Like urban intensive and urban emergent schools, urban characteristic schools face similar disadvantages, including higher rates of chronic absenteeism. Importantly, several scholars (e.g., Johnson, 2013; Anderson, 2016; Schaffer et al., 2018) highlight racism and inequality as factors deeply rooted within the nation’s schools—and are also evident in absenteeism rates. Racial/ethnic and socioeconomic disparities exist within chronic absenteeism, such that lower income students, students of color, and differently abled students have the highest rates of absenteeism. The term, “students of color” is used to describe students whose racial and ethnic backgrounds have been historically marginalized and minoritized (Opara et al., 2019). Lower income students (those who qualified for free or reduced-price lunch), students with disabilities (those who had individualized education programs), Hispanic English language learners, Native American students,

and Black students were most likely to be absent from school, according to the 2019 National Assessment of Educational Progress (NAEP). In states such as New Jersey, similar patterns emerge. Specifically, children from low-income families were more likely to be chronically absent (5% higher than the statewide average) and 28% of homeless children were chronically absent (Institute for Children, Poverty, and Homelessness, 2015). Furthermore, children of color in New Jersey are more likely to miss 10% or more of the school year than their peers. Black students make up 16% of New Jersey's total student population but made up 25% of the state's chronically absent students (Chen & Rice, 2016). Similarly, Hispanic students comprise of about 26% of NJ's population but account for 32% of chronically absent students. Importantly, within the state of New Jersey, there are further disparities between and within counties. For example, historically under-resourced communities in New Jersey, such as Paterson, have seen a substantial increase in chronic absenteeism, well above the state's average, with chronic absenteeism as high as 84% in some schools (New Jersey Department of Education, 2017).

Guiding Theoretical Framework

An ecological systems perspective provides a useful framework through which researchers, policymakers, and practitioners can study absenteeism and devise multi-system intervention approaches to address this problem. This study utilizes Bronfenbrenner's social ecological theory (1979), which posits that the microsystem (i.e., most proximal factors including home environment), mesosystem (i.e., school environment), exosystem (i.e., neighborhood environment) and macrosystem (i.e., most distal factors including policies, cultural beliefs, and values) can all influence a child's development. Extending this theory to educational research, a child's school performance and engagement may be influenced by factors within their home (e.g., parental education and literacy; Liu et al., 2018), their schools (e.g., school size; Shin, 2012), neighborhoods (e.g., violence; Ruiz et al., 2018), and systemic factors (e.g., racist educational policies; Rumberger & Palardy, 2005). Consistent with ecological systems theories, the present study will examine how neighborhood resources and violent crime predict school-level chronic absenteeism rates.

Importantly, when considering the neighborhood environment, it is critical to consider how the built environment influences education attainment. Consistent with Bronfenbrenner's ecological systems theory, the built environment, or the way communities and neighborhoods are designed, is increasingly recognized as a predictor of psychological and physical health (Dannenberg et al., 2003; Evans, 2003; Srinivasan et al., 2003).

Specifically, historically under-resourced neighborhoods have greater rates of violence, limited access to healthy foods, an oversaturation of processed, unhealthy, and fast foods, residential overcrowding, unsafe air and water, and a higher percentage of older buildings that are more likely to contain lead-based paint (Hopson, 2014; Opara et al., 2020). These neighborhood conditions are present in environments where children live, play, and learn. For example, in Bradshaw's (2007) review of theories of poverty and antipoverty, the author suggests that there are geographical disparities that result from some regions" having more financial, social, and political resources that enable them to thrive compared to others. Thus, schools in neighborhoods with greater resources are more likely to have better financial, social, and political resources and are likely to have better academic outcomes and higher school attendance. Racism and inequality play an important role in the role of the built environment and geographic disparities (Johnson, 2013). Consistent with Milner's framework for conceptualizing urban schools, racism and inequality are intertwined with discussions about the built environment of urban schools. Specifically, urban schools enroll high numbers of students who identify as racial/ethnic children of color, have lower student-to-teacher ratios, resulting in large classroom sizes, enroll a greater percentage of students of lower socioeconomic status, and have less safe surrounding neighborhoods (Johnson, 2014). These geographic disparities are more likely to exist in urban environments and are often associated with poorer academic performance and educational attainment (Johnson, 2013, 2014).

Neighborhood Level Resource Deprivation, Violent Crime, and Absenteeism

There is substantial research to suggest that indicators of neighborhood-level resource deprivation impact students' academic performance and engagement in school. There is a robust literature suggesting the role of neighborhood level poverty on academic outcomes, including chronic absenteeism (D'Agostino et al., 2019; Gottfried, 2009; Myers Jr et al., 2004). According to research, higher poverty and lower educational attainment in more disadvantaged neighborhoods inadvertently reinforce for children that school isn't important, despite their participation (Jargowsky & El Komi, 2011). In a study of urban schools in the Philadelphia school district, Gottfried (2014b) found that as neighborhood poverty (i.e., the percent of residents in the census tract block living at or below poverty level) increased, rates of absenteeism also increased. These findings were consistent with other

indicators of neighborhood-level socioeconomic status, including the average income of the neighborhood, household size, and home ownership status. While many of these studies have investigated the effects of children's residential neighborhood environment, research on the effects of the school environment is consistent (Ruiz et al., 2018).

Consistent with the literature on neighborhood resource deprivation, indicators of neighborhood level threat, such as exposure to neighborhood crime, have been associated with lower academic outcomes (Bosworth et al., 2011; Ruiz et al., 2018; Wang et al., 2014). Chronic absenteeism is a mechanism by which neighborhood level threats may impact students' academic outcomes. Studies have shown that most of the learning for children takes place in schools; therefore, students who do not attend school are at an academic disadvantage (Morrissey et al., 2014). Furthermore, youth who do not feel safe or who are concerned about neighborhood safety may avoid walking to school and instead stay at home or in a safer location other than school (Milam et al., 2010). In a recent study, Burdick-Will and colleagues (2019) found that students whose estimated routes to school required walking along streets with higher violent-crime rates had higher rates of absenteeism throughout the year. These effects were not found when students traveled to school by riding on public transit, even when controlling for factors such as demographic characteristics, prior school attendance, and exposure to violent crime around homes and schools (Burdick-Will et al., 2019). Other studies have found that awareness of crimes may discourage youth from engaging in outside activities such as going to school or playing outside with other peers (Harding, 2010; Rosenblatt & DeLuca, 2012), while simultaneously increasing parents' restrictive behaviors and supervision due to concerns about their child's safety (Horowitz et al., 2005). In sum, the literature suggests that neighborhood-level resource deprivation and threat have important implications for students' levels of absenteeism and subsequent academic outcomes.

Research on the association between neighborhood resource deprivation and threat have been conducted in urban schools, which Milner would conceptualize as urban intensive and urban emergent (Milner, 2012). However, fewer studies have investigated similar processes in urban characteristic schools. As Milner described, these schools are not located in big cities but experience challenges evident in urban contexts, including racial and socioeconomic segregation. This study will extend the current body of literature by examining how the *school* neighborhood environment influences chronic absenteeism in an urban characteristic community in Passaic County, New Jersey.

The Present Study

The present study extends current literature by examining the association between the neighborhood environment and chronic absenteeism in schools” geographically disparate areas in Passaic County, New Jersey. Research thus far has primarily focused on Milner’s conceptualization of urban intensive and urban emergent schools. Thus, this study will address a gap in the current literature by examining how these factors are equally prevalent in urban characteristics schools. To supplement ongoing dialogue on student absenteeism, the present study seeks to encourage broader changes to improve the lives and well-being of children in urban schools across different geographic areas of the United States. Specifically, using publicly available data, the present study investigated the role of resources and violent crimes in neighborhoods surrounding schools and their subsequent effects on school-level rates of chronic absenteeism across three academic school years. Finally, we investigated the association between absenteeism and other indicators of school performance and climate, including high school dropout rates, high school graduation rates, and college enrollment. We hypothesized that:

- (H1) In latent growth models, schools with greater neighborhood resources will have lower rates and trajectories of chronic absenteeism over time.
- (H2) In latent growth models, schools in neighborhoods with greater rates of violent crime will have higher rates and trajectories of chronic absenteeism over time.
- (H3) Paterson, New Jersey will have lower rates of neighborhood-level resources, higher rates of neighborhood violent crime, and higher rates of absenteeism compared to other towns in Passaic County, New Jersey.
- (H4) Greater chronic absenteeism rates will be negatively related to high school graduation and college enrollment rates, but positively related to dropout rates.

Methods

Study Location

Paterson, New Jersey, was selected as the location of interest given the research team’s work in Paterson to address substance use and mental health outcomes amongst youth [removed for review]. Specifically, as part of recent community-based participatory efforts in Paterson, the team will

be collaborating with Paterson youth to develop brief substance use and mental health interventions for chronically absent youth who do not always have access to school-based substance use interventions, or mental health programs [removed for review].

Community Contexts

Passaic County is one of the most populous and dense counties in New Jersey. Although Passaic County has a diverse population (37.4% Hispanic; 62.6% White, 12.8% Black/African American, 0.67% Native American, 5.0% Asian,.03% Pacific Islander, 15.1% other races, and 3.71% two or more races) cities within Passaic County, such as Paterson, New Jersey, have among the highest percentages of underrepresented racial groups (U.S. Census, 2021). This suggests that the county remains racially segregated (Flaxman et al., 2013).

Paterson, New Jersey is one of the largest rates of people of color living in the county and within the state of New Jersey, with 61.4% identifying as Hispanic, 25.7% as African American or Black, and 27.2% as White, 8.3% identifying as Non-Hispanic White, 4.5% identifying as Asian, and 42.5% of residents were born outside of the United States (U.S. Census 2021). In addition, Paterson continues to be one of the most economically disadvantaged communities in New Jersey. Specifically, the poverty rate in Paterson is 19% above the state's average. Approximately, 29.1% of residents living in this city live below the poverty line, with a median household income of \$33,000 compared to the \$71,180 median income for the entire state (U.S. Census, 2015). Paterson's child poverty rate is 41%, which is higher than New Jersey's rate of children in poverty (16%; Advocates for Children of New Jersey, 2015). Given the disparities that exist within communities like Passaic County, it is important to leverage research questions to inform the development of interventions to address systemic disparities that continue to affect youths in communities like Paterson, New Jersey.

Data Sources

Publicly available data from the New Jersey Department of Education was used to assess school absenteeism from public elementary, middle, and high schools (including charter, specialized, and alternative schools) in Passaic County, New Jersey (n = 132) across three academic school years (2016–2019). Each school represents a single unit of analysis. The data was represented across all 19 cities and towns in Passaic County. There were 92 (69.7%) schools serving pre-K through any grade (n = 92; 69.7%),

14 (10.6%) schools serving 6th–8th grade, and 26 (19.7%) schools serving 9th–12th grade. Given that there were several schools that served various grades (e.g., K-5, K-8, K-12th), and age ranges, the analyses did not examine or control for differences in school type. Schools varied in their racial and ethnic diversity, ranging from 0–99%, with higher percentages indicative of a greater racial and ethnic underrepresented student population ($M = 59.79$, $SD = 36.86$) and socioeconomic status (i.e., percentage of students receiving free or reduced-price lunch), ranging from 2.1–100% ($M = 51.55$, $SD = 32.70$).

It is important to note that data was not acquired or available at the individual student level; thus, we cannot be sure that students in the school are from that specific neighborhood/district. While the Paterson school district does not allow students to attend schools that are not within their designated district unless they qualify for special education services that the district does not have, only two towns within Passaic County qualified for students to attend schools outside of their district, indicating that most schools in the present study were more likely to enroll students from within their district.

Measures

Child Opportunity Index. The *child opportunity index (COI)* is a measure of the resources and conditions that matter for children to develop in a healthy way in the neighborhoods where they live (Acevedo-Garcia et al., 2020). The Child Opportunity Index (COI) was developed as a publicly available and readily accessible index which includes a range of measures enumerating relative opportunity in educational, health and environmental, and social and economic domains across all United States neighborhoods (Acevedo-Garcia et al., 2020; Noelke et al., 2019). The opportunities in each neighborhood are then compared to the level of opportunities in the average neighborhood of other children across the United States in a single metric. This provides an assessment and visualization of disparities that exist within access to opportunities in the United States.

The COI consists of three latent predictors of opportunity: educational opportunity, health and environmental opportunity, and the social and economic *opportunity* indices. Each index was converted into a standardized score (z-score) given measurement variability within and between each index (Roubinov et al., 2018). Higher standardized scores reflect greater levels of opportunity (i.e., a census tract with a z-score of + 1.0 on a given indicator is one standard deviation above the mean on that indicator relative to all other census tracts). See Table 1 for a list of indicators for each opportunity index. Indicators were constructed using data collected from large-

Table 1. Indicators of the Child Opportunity Index

Child Opportunity Indices (Latent Variables)	Opportunity indicators (Observed variables)
Educational Opportunity	School poverty rate (eligible for free or reduced-price lunch) Student math proficiency level Student reading proficiency level Proximity to licensed early childhood education centers Proximity to high quality early childhood education centers Early childhood education participation High school graduation rate Adult educational attainment
Health and Environmental Opportunity	Retail healthy food environment Proximity to toxic waste release sites Volume of nearby toxic waste release Proximity to parks and open spaces Housing vacancy rate Proximity to healthcare facility
Social and Economic Opportunity	Foreclosure rate Poverty rate Unemployment rate Public assistance rate Proximity to employment

scale, nationally representative surveys (e.g., U.S. Census Bureau American Community Survey, and U.S. Environmental Protection Agency Toxic Release Inventory).

Violent Crime Exposure. Crime data was obtained through ArcGIS from Applied Geographic Solutions, which aggregates and analyzes data from the FBI Uniform Crime Reporting Program. Personal crime (murder, rape, robbery, assault) and property crime (burglary, larceny, motor vehicle theft) data were collected. *Incidences of violent crime* were used as the metric of violence exposure for this study. Violent crime exposure is conceptualized in accordance with the Federal Bureau of Investigation guidelines that define violent crimes as “offenses, which involve force or threat of force” (U.S. Department of Justice, 2011). The total number of robberies, rapes,

murders, and assaults within a 20-min walking distance of the school were summed up to create a total incidence score. This score was standardized based on the per capita rate (i.e., the number of people living within a 20-min radius of the school in all directions) to account for how differences in population size influence total violent crime incidences (Ruiz et al., 2018).

School Culture and Climate. Student absences, dropout rates, high school graduation, and college acceptances provide important information about a school's culture and climate. All data on school climate was obtained from the New Jersey Department of Education (New Jersey DOE, 2020).

Chronic absenteeism was operationalized as being absent for 10% or more of the days enrolled during the school year. An absence is defined as a student who is not present for any reason, whether excused, unexcused, or for disciplinary action. The data on chronic absenteeism reflects the overall percentage (aggregated across grades) of students who were chronically absent for the academic school year.

Dropout rates were defined as the percentage of students in grades 9 through 12 who dropped out during each academic school year.

Adjusted high school graduation rates were defined as the number of students who graduated from high school. The Department of Education calculated these rates by dividing the number of students who graduated within four years of entering the 9th grade by the total number of students who started high school four years earlier (Heckman & LaFontaine, 2010). Rates were adjusted for students who transferred in or out of the district during this time in accordance with the graduation rate formula that is mandated by the federal government (US Department of Education, 2017–2020). Rates for this project were obtained as adjusted rates from the New Jersey Department of Education; no further calculations or adjustments were conducted on the data.

College enrollment rates were defined as the percentage of graduates that had enrolled in a 2-year or 4-year institutions within 16 months of graduating from high school. This data was originally collected from the National Student Clearinghouse by the New Jersey DOE.

Dropout rates, high school graduation, and college enrollment were only available for a subset of the sample (high schools; $n = 22-23$).

Economic disadvantage rates for each school were defined as the percentage of low-income students that are eligible for free or reduced lunch.

Analytic Strategy

School addresses were geocoded into spatial coordinates and mapped in ArcMap 10.3. The child opportunity indices for each census tract where

schools are located were merged using the spatial join tool in ArcMap 10.3. Within the sample, schools were clustered into 79 census tracts that ranged in size from 1 to 4 schools. Preliminary analyses were conducted to visualize spatial relationships among neighborhood disparities (*i.e.*, higher rates of violent crime, greater school economic disadvantage), resources (*i.e.*, child opportunity indices) and rates of chronic absenteeism (*i.e.*, higher levels of absenteeism). For example, see supplemental Figures 1 to 3.

Next, chi-square analyses were conducted to determine if there were any significant differences in missingness across study variables between Paterson and the other towns in Passaic County. Preliminary analyses consisted of running bivariate correlations to assess the relationship between neighborhood disparities, resources, and chronic absenteeism across three academic school years. Next, independent sample t-tests were conducted to examine if study variables differed between Paterson and other towns in Passaic County (see Table 2).

A mixed factorial ANCOVA was used to examine differences in rates of chronic absenteeism across the three academic school years between Paterson and other towns in Passaic County (see Table 3). The school's economic disadvantage was included as a covariate in the model after Ruiz and colleagues (2018) discovered evidence that disadvantaged neighborhoods do not always reflect poorer school outcomes and vice versa. The Huynh-Feldt correction was used when Mauchly's sphericity test was violated (Armstrong, 2017). To assess town by academic year differences, a Bonferroni correction post-hoc analysis was performed (significance was accepted at the $p < 01$ alpha level; Bender & Lange, 2001).

Latent growth models were estimated in Mplus (Muthén & Muthén, 2017) with robust maximum likelihood estimation to assess trajectories of chronic absenteeism over time, with neighborhood resources and violent crimes as primary predictors. The root means square error of approximation (RMSEA ≤ 0.05), the comparative fit index (CFI ≥ 0.95), and the Tucker-Lewis index (TLI ≥ 0.95) were used to indicate good model fit (Hu & Bentler, 1999).

Results

Missing Data Analysis

Given that the analyses in this paper are based on publicly available data, there is a greater likelihood of missingness. However, absenteeism rates were low across all variables in the current study (absenteeism rates: 2–5, economic disadvantage: 11, dropout rates: 3, graduation rate: 2, and college

Table 2. Descriptive Statistics, Bivariate Correlations, and Independent Samples t-Tests

	<i>n</i>	<i>M(SD)</i>	<i>t</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Violence Crimes	131	4.65 (3.93) x 10 ²	-16.46**							
Educational Index	132	32.45 (27.31)	9.11**	-.78**						
Health Environmental Index	132	43.89 (29.11)	8.12**	-.72**	.91**					
Social Economic Index	132	39.67 (32.10)	9.63**	-.83**	.87**	.83**				
Absenteeism 2018–2019	130	14.80 (13.64)	-9.07**	.61**	-.47**	-.50**	-.45**			
Absenteeism 2017–2018	127	15.20 (13.35)	-8.74**	.59**	-.44**	-.47**	-.43**	.92**		
Absenteeism 2016–2017	128	10.62 (9.93)	-3.16**	.25*	-.27**	-.25**	-.26**	.68**	.77**	
Economic Disadvantage	121	51.55(29.34)	-10.49**	.79**	-.89**	-.87**	-.87**	.46**	.47**	.24**

Note. *M* = mean; *SD* = standard deviation. Independent t-test between Paterson and other towns in Passaic County across study variables are denoted by the *t* value. Significant negative *t*-values indicate that Paterson have higher rates compared to other towns in Paterson, NJ and significant positive *t*-values indicate that Paterson have lower rates compared to other towns in Paterson, NJ.

Significance indicated by †*p* < .10; **p* < .05; ***p* < .01

Table 3. One-way Mixed ANCOVA Results, Controlling for School Economic Disadvantage

	Sum of Square	df	Mean Square	F	p	partial η^2
Absenteeism	680.07**	1.75	388.59	14.16	<.001	.112
Absenteeism* Disadvantage	62.43	1.75	35.67	1.30	.273	.011
Absenteeism* Location	1964.64**	1.75	1122.60	40.89	<.001	.267
Error	5381.10	196.01	27.45			

Note. N = 132. Df = degrees of freedom. Significance indicated by †p < .10; *p < .05; **p < .01

enrollment: 2), and missingness did not differ between Paterson and other towns in Passaic County on any variable ($p > 0.05$) except economic disadvantage [$\chi^2(1) = 4.42, p = 0.31$]. There was no missingness across the other study variables.

Bivariate Associations

Basic descriptive statistics, bivariate correlations, and independent sample t-test between Paterson and other groups in Passaic County for study variables are presented in Table 2. Results of the bivariate association suggest that greater educational, health/environmental, and social/economic opportunities are inversely associated with violent crime, economic disadvantage, and absenteeism across three academic school years. Conversely, higher levels of violent crime are associated with greater economic disadvantage and higher rates of absenteeism across three academic school years. Additionally, greater economic disadvantage was associated with higher rates of absenteeism.

Differences in Deprivation, Threat, and Chronic Absenteeism

Given the focus on Paterson, we assessed differences across the study variables between Paterson and other towns in Passaic County. Results of the independent samples t-test revealed significant differences between violent crime ($M_{Dif} = 6.80 \times 10^2, p < .001$), educational opportunities ($M_{Dif} = 34.89; p < .001$), health and environmental opportunities ($M_{Dif} = 34.56; p < .001$), social and economic opportunities ($M_{Dif} = 42.38; p < .001$), absenteeism

2018–2019 ($M_{\text{Dif}} = 17.48$; $p < .001$), absenteeism 2017–2018 ($M_{\text{Dif}} = 16.76$; $p < .001$), absenteeism 2016–2017 ($M_{\text{Dif}} = 5.48$; $p < .001$), and economic disadvantage ($M_{\text{Dif}} = 41.11$; $p < .001$). These results suggest that Paterson City have higher levels of disadvantages (*i.e.*, higher rates of violent crime, greater school economic disadvantage), lower levels of advantage (*i.e.*, child opportunity indices) and poorer school outcomes (*i.e.*, higher levels of absenteeism) compared to other towns in Passaic County.

Neighborhood Deprivation and Threat on Rates of Chronic Absenteeism

Mauchly's Test of Sphericity for the mixed ANCOVA indicated that the assumption of sphericity had been violated, $\chi^2(2) = 21.92$, $p < .05$, and therefore, a Huynh Feldt correction was used. Results of the ANCOVA revealed a significant effect of time, suggesting that mean absenteeism significantly differed between time points, when controlling for the school's economic disadvantage [$F_{H-F}(2,224) = 14.16$, $p < .001$, $\eta^2 = .11$]. Post hoc tests using the Bonferroni correction revealed that absenteeism in the 2016–2017 school year significantly differed from the 2017–2018 academic year ($M_{\text{Dif}} = 6.62$; $p < .01$) and the 2018–2019 academic year ($M_{\text{Dif}} = 6.37$; $p < .01$). Further, there was a significant interaction of time and place, suggesting that the trajectories of absenteeism across 3 academic years differed between schools in Paterson and the other towns in Passaic County [$F_{H-F}(2,224) = 40.81$, $p < .001$, $\eta^2 = .27$, see Figure 1]. Post hoc tests using the Bonferroni correction revealed that 2016–2017 absenteeism rates were similar across Paterson and other towns in Passaic County ($M_{\text{Dif}} = 2.07$; $p > .01$). However, Paterson and other towns in Passaic county differed between the 2017–2018 ($M_{\text{Dif}} = 16.98$; $p < .01$) and the 2018–2019 ($M_{\text{Dif}} = 18.11$; $p < .01$) academic years, see Table 3.

Chronic Absenteeism Trajectories Influenced by Neighborhood Deprivation and Threat

Next, we examined the association using latent growth modeling between neighborhood level resource deprivation and threat on chronic absenteeism trajectories from the 2016–2017 through the 2018–2019 school years. Higher rates of violent crime predicted an increase in chronic absenteeism trajectories over three academic school years (slope: $= .77$, 95% CI: 0.595–1.051, $p < .001$). Although greater neighborhood resources predicted an increase in chronic absenteeism trajectories over three academic school

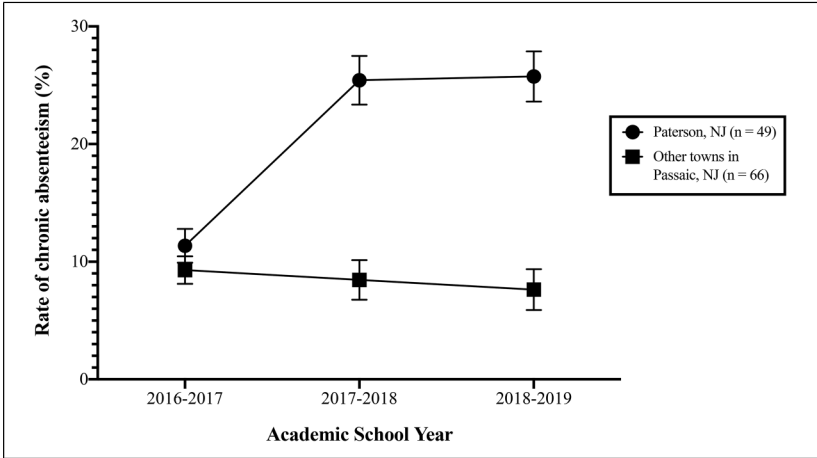


Figure 1. Effect of location (paterson city versus other towns in passaic county) on rates of chronic absenteeism over time. Error bars represent + 2 SE of the mean.

years (slope = .22, $p = .03$), greater neighborhood resources were associated with lower absenteeism rates in the 2018–2019 school year (intercept: $\beta = -.27$, $p < .03$, see Table 4).

Exploratory Analyses

Finally, we conducted exploratory analyses to investigate the association between absenteeism and other measures of school climate (*i.e.*, high school graduation, college enrollment, and dropout rates across the three academic years). Given that graduation rates, college enrollment, and high school dropout rates were only available for high schools ($n = 23$), the results are considered exploratory and should be interpreted with caution. Bivariate associations between absenteeism and additional measures of school climate suggest that greater absenteeism was associated with higher rates of dropout, lower high school graduation rates, and lower college enrollment (see Supplemental Table 1).

Discussion

Several studies have linked specific indicators of neighborhood level deprivation to poorer academic outcomes among urban schools (Bosworth et al., 2011; D'Agostino et al., 2019; Myers Jr et al., 2004; Park et al., 2002;

Table 4. Estimate Parameters of the Latent Growth Model

	Estimate (B)	Estimate (β)	SE	Est./S.E	p	95% CI	
						Lower	Upper
Intercept of Absenteeism							
Child Opportunity Index	-2.610*	-0.269*	0.128	-2.091	0.037	-0.507	-0.057
Violent Crime Exposure	-1.411	-0.146	0.176	-0.830	0.407	-0.418	0.100
Slope of Absenteeism							
Child Opportunity Index	0.931*	0.220*	0.109	2.028	0.043	0.089	0.403
Violent Crime Exposure	3.265**	0.774*	0.155	4.982	<.001	0.595	1.051

Note. N = 132. Model fit statistics indicated good fit: RMSEA < 0.00, CFI/TFI > 0.95. SE = Standard Error, Est./S.E = Estimate divided by the Standard Error, and CI = Confidence interval, correspond to the standardized estimate.
Significance indicated by †p < .10; *p < .05; **p < .01

Ruiz et al., 2018; Sheehan et al., 2017). Much of the research thus far has primarily focused on Milner's conceptualization of urban intensive and urban emergent schools, which includes larger schools in more densely populated areas (e.g., New York City). This study sought to address a gap in the current literature by highlighting the association between neighborhood-level resources and violent crime and chronic absenteeism among urban characteristic schools. Given that urban characteristic schools are not located in densely populated areas and have lower political representation, these schools are often not included in conversations about predictors of chronic absenteeism and ways to curtail absenteeism among youth. Using publicly available data from the New Jersey Department of Education, the present study examined resources and violent crimes in neighborhoods surrounding schools and the subsequent effects on school-level rates of chronic absenteeism across three academic school years. Finally, we investigated the association between absenteeism and other indicators of school performance and climate, including high school dropout rates, high school graduation rates, and college enrollment. Findings from this study support the hypothesis that (H1) schools with greater neighborhood resources have lower rates of chronic absenteeism; (H2) schools in neighborhoods with greater rates of violent crime, have higher rates of absenteeism; (H3) Paterson, New Jersey had lower rates of neighborhood level resources and higher rates of neighborhood threat and absenteeism compared to other towns in Passaic County, New Jersey; and (H4) rates of absenteeism were negatively associated with high school graduation and college enrollment rates, and positively associated with high dropout rates.

Preliminary analyses were carried out across Passaic County to visualize and spatially relate neighborhood disparities (i.e., higher rates of violent crime, greater school economic disadvantage), resources (i.e., child opportunity indices), and rates of chronic absenteeism (i.e., higher levels of absenteeism). Initial visualization of the maps suggested that concentrated neighborhoods were disadvantageous in areas such as Paterson, whereas surrounding areas were more affluent. Specifically, Paterson City has among the lowest child opportunity scores ($M = 11.38$) compared to the average across other towns in Passaic County ($M = 55.02$) and higher resourced neighboring towns such as Wayne ($M = 83.02$). Similarly, rates of violent crime were significantly higher in Paterson, even when accounting for potential inflation in crime due to larger population density. Furthermore, the association between greater disadvantage and higher rates of absenteeism was evident in the mapped illustration. Spatial mapping was useful in visualizing neighborhood resources in a way that may encourage researchers, policymakers, and other relevant stakeholders to contextualize environmental factors and their impact on outcomes, especially among youth.

Findings from this study suggest that Paterson has higher levels of disadvantages (*i.e.*, higher rates of violent crime, greater school economic disadvantage), lower levels of advantage (*i.e.*, child opportunity indices) and poorer school outcomes (*i.e.*, higher levels of absenteeism) compared to other towns in Passaic County. Furthermore, in bivariate associations, greater educational, health/environmental, and social/economic opportunities are inversely associated with violent crime, economic disadvantage, and absenteeism across three academic school years. Additionally, higher levels of violent crime are associated with greater economic disadvantage and higher rates of absenteeism across three academic school years. While results suggested no significant differences in the 2016–2017 school year, absenteeism rates in the 2017–2018 academic year began to show extreme divergence between Paterson and other towns in Passaic County, with absenteeism rates in Paterson exponentially increasing. Of note, during the 2016–2017 school year, Paterson district schools received a substantial decrease in funding. As a result, Paterson public schools had to cut several school programs, including their student support programming designed to help students stay engaged in school. These school personnel were responsible for contacting parents when children were late to, or absent from schools, serving as a buffer to curtail absenteeism among youth. Such a decrease in programming had substantial effects on absenteeism. Further, even in the context of resource-deprived neighborhoods, there were specific schools in Paterson that maintained low levels of absenteeism. Future work will include engaging with schools to identify strengths that can be duplicated in other areas of the city that are low-resourced and have high absentee rates.

In order to assess longitudinal associations, latent growth models were estimated to examine how neighborhood conditions (from 2015) predict trajectories of academic performance from the 2016–2017 to 2018–2019 academic year. The current findings indicate that neighborhood level deprivation (*i.e.*, lower educational, health/environmental, and social/economic opportunities) and threat (*i.e.*, exposure to violent crime) are associated with increased rates and increasing trajectories of chronic absenteeism. Previous research in the area has found that neighborhood level resource deprivation such as increased air pollution

(Gilliland et al., 2001; Mohai et al., 2011; Park et al., 2002; Sheehan et al., 2017), poverty (D'Agostino et al., 2019; Gottfried, 2009, 2014a; Myers Jr et al., 2004) and exposure to crime (Bosworth et al., 2011; Ruiz et al., 2018; Wang et al., 2014) are associated with decreased academic performance and increased absenteeism among youth. These findings are not only consistent with previous literature but add to the extant literature on the role of neighborhood level indicators on chronic absenteeism using geospatial analyses and latent growth modeling.

These findings were in line with Bronfenbrenner's social ecological theory. The present study suggests that factors in the exosystem, including neighborhood level resources and crime, have important implications for youth's development, specifically their academic outcomes and school engagement. Furthermore, multi-level interventions may be important to address chronic absenteeism among students and neighborhood factors that create a cycle of resource disparity and violence. For example, guided by research on neighborhood-level factors and child maltreatment, the Strong Communities for Children intervention uses outreach workers and leverages community resources to enhance neighborhood cohesion and promote a shared investment in family and child well-being (Melton, 2014). Thus, programs that include community level resources and participation can be adapted to address school absenteeism.

Finally, the results of exploratory analyses suggested that greater absenteeism was associated with higher rates of dropout, lower high school graduation rates, and lower college enrollment. These results are consistent with previous research that highlights the long-term consequences of absenteeism. Specifically, absenteeism has been associated with higher dropout and lower graduation rates (Garase, 2017; Mireles-Rios et al., 2020), and other difficulties transitioning to adulthood (Broadhurst et al., 2005; Gubbels et al., 2019). Given that these analyses were exploratory in nature and only consisted of a very small sample size, we are limited in our ability to generalize these results. However, they do provide preliminary evidence of the long-term consequences of absenteeism and further highlight the need for immediate intervention.

Limitations

The limitations of our study can guide directions for future research. First, the use of publicly available data did not allow for an examination of individual-level variables. In the present study, data were collected at the school level, so each school represents a single unit of analysis. Although this allowed us to assess institutional level performance, we were not able to assess individual differences in absenteeism among students or assess important individual-level moderators of school absenteeism. Additionally, given that data were collected at the individual school level, we cannot be sure that students in the school reside in that neighborhood. Specifically, there is an increasing number of schools that accept students from other districts. While the Paterson school district does not allow students from other districts to attend their schools, students from lower income neighborhoods may receive vouchers or applications to attend charter and private schools in

neighboring, higher-income neighborhoods or for special-needs services that may not be provided within the district. Next, given the use of publicly available data, we could not control or account for the rigor of the data collection, reporting, or possible measurement issues. Furthermore, the study includes chronic absenteeism rates across all public schools in Passaic County. As such, we did not account for grade by absenteeism effects. Although research suggests that chronic absenteeism begins as early as kindergarten, reasons for chronic absenteeism may differ based on grade. For example, research shows that students in older grades are likely to be absent as a result of truancy (i.e., unexcused absence from school). Despite not assessing these interactions, the present study found that neighborhood level chances may be beneficial to address chronic absenteeism regardless of its motivations. We encourage future studies to examine how these factors may differentially relate to motivations of absenteeism.

Despite the limitations of this study, the use of publicly available data allows for the objective examination of institutional level data (Ruiz et al., 2018). Future work should also include qualitative data collection from both children and their families, which could allow for a deeper understanding of predictors of absenteeism. Additionally, while there may be differences in neighborhood-level resources and threats between students' residences and the school's location, the present study allows us to assess how the geography of the school affects rates of chronic absenteeism. Future studies should utilize longitudinal data in order to effectively predict the causation of school outcomes in specific neighborhoods.

Implications

While this study focused on Paterson, New Jersey due to the disparities experienced by the community compared to other more resourced cities in Passaic County, the study findings can be applicable to other cities that have high rates of poverty and residential segregation. Our study findings are consistent with literature on neighborhoods' impacts on educational outcomes, which can be applied to other urban, under-resourced communities. We, therefore, encourage more research to explore other neighborhood-level resources in urban communities across the nation that can be either enhanced or eliminated to reduce absenteeism rates for youth. As our findings reveal, the significant disparities between cities that have a large population of people of color compared to less diverse and more resourced cities, policymakers need to act to resolve such inequities as they can have dire consequences for youth. Researchers and policymakers often suggest the formation of policies that may further disenfranchise marginalized groups, such as reporting families

of students with a high number of absences to child welfare agencies or threatening legal action against parents or guardians. Such punitive actions against youth and their families may exacerbate problems in underserved urban communities. A solution to understanding the unique needs of vulnerable populations, such as youth living in urban communities, is to allow youth to be part of prevention planning and research through every step of the process. Such an approach allows education researchers to engage in quality community-based participatory research, which has been shown to have beneficial results for such populations (Satcher, 2005). Community organizations can coordinate group drop-offs to schools and check-ins with students and schools to ensure that children are going to and staying in school throughout the day. Thus, findings from this study will serve as evidence for the importance of developing a community-based prevention program to address disparities for youth, including those that are chronically absent in Paterson, New Jersey. Recent work conducted in Paterson, New Jersey revealed that youth described symptoms of community trauma, including a collective sense of hopelessness and a lack of support from their schools (removed citation for review). Thus, community-based efforts to address disparities within these communities are warranted.

Conclusion

The academic success of our most vulnerable youth, specifically youth of color living in under-resourced, poor, urban communities, remains precarious. All youth should have equal access to a high-quality education and reside in communities with limited geographic disparities that place them at risk and decrease their probability of educational success. Findings from this study provide an important contribution to understanding the role of neighborhood threat and resource deprivation in predicting absenteeism in elementary, middle, and high schools in a segregated county in New Jersey. Our study used innovative mapping strategies to illustrate patterns of resource allocation and neighborhood-level threats as they relate to absenteeism. These findings highlight that children living in low-resourced, high-crime communities have greater rates of absenteeism. Such ecological findings begin to shift the burden of responsibility away from the youth themselves, instead focusing on the impact of context on their lives and well-being. This study does not negate the significance of understanding school climate, but instead positions the significance of context across time in predicting patterns of absenteeism in low-resourced urban school districts with increased rates of violence. In view of these findings, we need to consider drawing on empowerment-based approaches that view and treat

vulnerable youth and their communities as resourceful and resilient in the face of adversity, particularly in the development of community-based prevention programs and interventions that can positively influence the lives of youth.

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Supplemental material

Supplemental material for this article is available online.

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David T. Lardier Jr. is an assistant research professor in UNM's Department of Psychiatry and Behavioral Science, Division of Community Behavioral Health. His research interests include the implementation and evaluation of substance misuse, mental health, and sexual health prevention-intervention programming; evaluation and scale development; statistical methodology for multi-level prevention-intervention research; the implementation of evidence-based practices in ethnically-diverse and rural communities; and both youth and community empowerment and resiliency.