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The Influence of Community Elements on School Engagement among HRSA Region IV Students Aged 6-17 Years: Analysis of 2011-2012 National Survey of Children's Health (NSCH)

Breyanna Mikel

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ABSTRACT

THE INFLUENCE OF COMMUNITY ELEMENTS ON SCHOOL ENGAGEMENT AMONG HRSA REGION IV STUDENTS AGED 6-17 YEARS: ANALYSIS OF 2011-2012 NATIONAL SURVEY OF CHILDREN'S HEALTH (NSCH)

By

BREYANNA MARSHAY MIKEL

APRIL 12, 2019

INTRODUCTION: Evidence in the literature suggests that the Southeastern United States is a region with poor academic outcomes, such as school engagement. While there is research suggesting a myriad of influences of school engagement, the relationship between the built environment and school engagement is an area of research that is not well understood. More focus has been placed on the social environment of a neighborhood and restoring the sense of trust and safety within a community, without addressing the structural and physical components that influence the perceptions of a neighborhood or community.

AIM: The purpose of this study is to examine the association between school engagement and detracting community elements. Additionally, the study aims to determine the demographic characteristics associated with school engagement and the demographic characteristics associated with detracting community elements.

METHODS: A cross-sectional analysis of the 2011-2012 National Survey of Children's Health (N= 95,677) survey data was conducted. Children between the ages 6 and 17 years living in HRSA Region IV were included in the study bringing the study sample to 8,668 children. Statistical methods used included descriptive statistics and multiple logistic regression to determine the prevalence, unadjusted, and adjusted odds ratios.

RESULTS: The results suggest significant associations between school engagement and detracting community elements (OR=1.51, 1.34-1.71 95% CI). Students that lived in neighborhoods that are considered unsafe (OR=0.50, 0.42-0.58 95% CI) and have violence (OR=2.661, 2.33-3.07 95% CI) were all less likely to have school engagement. Male students (OR=0.45, 0.40-0.50 95% CI), Black students (OR=1.34, 1.18-1.53 95% CI), and students coming from two-parent stepparent family structures (OR=2.36, 1.99-2.79 95% CI) were all less likely to experience school engagement.

DISCUSSION: There are not any differences among states within HRSA Region IV when examining the association of school engagement and detracting community elements. However, the study found that there is an association between school engagement and detracting community elements, overall. More research is needed to examine individual states to determine if there are differences at the state level.

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APPROVAL PAGE

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Author's Statement Page

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Chapter I: Introduction

Education is an influencer that we are all introduced to as toddlers and follows us for the rest of our lifespan as we maneuver through primary and secondary school, make decisions after secondary school – whether that be attending trade school, a college or university, the military, or diving directly into the workforce. Education is a factor that shapes who we are – through the introduction of socialization skills among peers to shaping an individual's perception and self-awareness to setting the metaphorical stage for success. Despite education being a crucial indicator for the success of an individual, there are various risks that threaten the ability and opportunity to have a quality level of education across the United States. Neighborhood characteristics, such as the structural components and the social cohesion, can serve as protective factors or risk factors – especially, during a sensitive time period like childhood and adolescence.

With education, an important, but often overlooked component, is the location of the school in respect to where students reside. Those schools that are situated in safer communities with more amenities are likely to have better performance, commitment, and engagement by students, teachers, parents, and the community alike. Congruently, those schools that are placed and situated in neighborhoods with more detracting elements and are deemed unsafe, are likely to have less disengagement and commitment from students, teachers, parents, and the community. Both the unsafe neighborhoods and detracting elements are related to violence.

Violence is a public health concern that greatly affects disadvantaged and marginalized communities. To date, there has been very limited research exploring the relationship between the built environment of a community or neighborhood and school engagement and academic success among school-aged youth. If investments were made in restoring properties, reducing blight, and adding community amenities – even something as simple as ensuring streetlights are

in working condition – then that would make a great difference in the perception of safety in the neighborhood. Additionally, those that live in the neighborhood or community would become more accountable because they have self-efficacy as it relates to their community. Further, these investments would address the disparities that are often overlooked and stem from limited school engagement and poor academic performance.

The overlap of disparities – both health and academic – are apparent in states within the southern region of the United States. Consistently, the South has higher incidence and prevalence of chronic health diseases and of performing below the national average when it comes to elementary and middle school milestones. With preliminary data from both the Nation's Report Card and the National Center for Education Statistics, the states that are included in the Health Resources and Services Administration's (HRSA) Region IV – Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee – are all performing below or significantly below the nation's average. This can be illustrated in a comparison of state performance to national performance among 4th and 8th graders in 2013. Additionally, the Southern Regional Education Board (SREB) provides insight on the challenges that exist within the South as well as policy recommendations and interventions that can be used to assist students, teachers, administrators, and other stakeholders.

As funding issues, policy barriers, academic achievement, and school engagement continue to manifest, we find that disparities – both educational and health - continue to drastically increase furthering the gap and further supporting a broken system that posits into a vicious cycle of: communities with limited amenities and resources, schools with limited support systems and resources for students, student falling through the cracks and having a hard time keeping up with school, dropping out without a high school diploma, leading to limited

employment opportunities, culminating in crime, and – ultimately – resulting in limited social capital and investments in a given neighborhood or community.

Purpose of Research/Rationale

Historically, the Southeastern region of the United States has higher prevalence of poverty in comparison to other regions of the country. Additionally, the Southeastern region has less funding available to invest in education and must put funds towards more pertinent resources (New America, n.d.). Further, there are a variety of disparities that arise between different states, within states, and within school districts (New America, n.d.). Additionally, trends showcase this region has high rates of poverty and lower rates of academic achievement, higher rates of chronic health conditions, and higher concentrations of racial minority populations – proving to be serious overlap and displaying intersectionality in terms of the social issues that exist. Because of the profound social impact this has in the Southeast region, there is a definite need for additional research for education and health disparities in the South and the Southeast.

While there is a myriad of information on the influence that social neighborhood elements and disorder have on youth, there is limited research on the association between the built environment of a community or neighborhood and youth - particularly, school-aged youth's school engagement. The purpose of this study is to determine the influence that the built environment has - specifically, the presence of physical disorder as indicated by the Broken Windows Theory - on school engagement among youth ages 6-17 years of age in the Southeastern United States. The following research questions guide the study:

1. What demographic characteristics are associated with school engagement?

a. Hypothesis 1: The demographic characteristics associated with school engagement are race, gender, and repeating a grade.

2. What psychosocial characteristics are associated with detracting community elements?

a. Hypothesis 2: The psychosocial characteristics associated with detracting community elements are exposure to community violence and absence of neighborhood supports.

3. What are the risk factors for low school engagement?

a. Hypothesis 3: Risk factors for school engagement include living in an unsafe neighborhood and repeating a grade.

Thus, by providing the findings for this current study we aim to fill the research gap that our study aims to explore.

Chapter II: Review of the Literature

2.1 School engagement

      Education provides a plethora of lessons for individuals to learn and grow from that stem far from simply performing well on assessments. While grades and excellent scoring is important, education allows for youth to build character as they navigate through classes – lessons such as how to prepare for assessments, making friends, how to react and overcome different challenges. All of these are simple examples of school engagement.   School engagement is a concept that was originally targeted and used toward postsecondary students to gauge their level of commitment and interest in academic; however, it has since expanded to include primary and secondary students and includes a variety of variables - such as, participating in extracurricular activities, academic success and performance, and feeling connected to the school that student attends (Caranfil and Robu, 2017).

      The concept of school engagement is one that is often referred to as a plethora of names, including – "student engagement, academic engagement, engagement in school work, student engaged learning," in addition to many more names (Fredricks et al., 2011). Despite the different terminology for the concept, the overall measure of it and definition remains the same. School engagement, as it will be referred as in the remainder of this paper, is a combination of observable behaviors, emotions, and cognitive investment that results in "meaningful student involvement throughout the learning environment" (Martin and Torres, 2016; Brophy, 1983; Natriello, 1984; Connell, 1990; Finn, 1989; Fredricks, Blumenfeld, and Paris, 2004; Pintrich and DeGroot, 1990; Miller et al., 1996).

      School engagement is a significant precursor to school and academic success among youth. There is evidence in the literature that decreased school engagement threatens educational

and professional success. Specifically, it contributes to growing dropout rates – which often, are the result of years of being overlooked and disengaged in the school setting – and poor secondary education outcomes, poverty, limited employment opportunities, and crime (Fredricks, Blumenfeld, and Paris, 2004; Finn, 1989). There are various determinants that influence school engagement among school-aged youth. Previous research by Quin and colleagues (2018), provides an ecological framework to identify potential correlates impacting school engagement – also referred to as academic engagement in the literature – which focuses on the individual, family, peer, school, and community levels. When utilizing the ecological framework as a guide, the individual level includes inter- and intrapersonal factors, such as genetic factors, personal attitudes and belief systems, and lived experiences as determinants of school engagement. Examples of this include participating in extracurricular activities, and personal involvement, motivation, and interest as well as such negative elements such as truancy and absences.

Additionally, the student's gender, age, grade level, overall health and well-being plays a significant role in the student's school engagement. As part of the student's individual level of school engagement in the ecological framework, is the influence of family. Students who come from households where the parent/guardian plays an active role in the child's academic success are likely to have increased school engagement (Galster et al., 2016). Moreover, as students get older and advance in their grade level their peer group and social network posit into the overall trend in decreased school engagement (Marks, 2000; National Research Council and Institute of Medicine, 2004). Finally, the school level focuses primarily on the teacher's support, while the community level fundamentally accounts for how students feel about the community that they reside in.

Upon review of the literature, school engagement is not a new construct; however, there has been a recent uptake and increased interest among researcher, educators, academic administrators, social workers, and other stakeholders. There has been a wide array of tools and instruments used to measure school engagement – including the several components of school engagement: behavioral, emotional, and cognitive (Fredricks et al., 2011). To provide further context, examples of the aforementioned components of school engagement will be provided. Examples of behavioral, emotional, and cognitive components include: completing work and participating in class activities (behavioral), feelings of belonging and acceptance (emotional), and utilizing different techniques to learn and retain information (cognitive) (Fredricks et al., 2011). With student spending a significant amount of time in an academic or educational setting, school engagement is a multifaceted topic that posits itself to being important in the developmental framework of youth and adolescents.

In a report compiled in 2011 by the Regional Educational Laboratory (REL) Southeast and the Institute of Education Science's National Center for Educational Evaluation and Regional Assistance, a meta-analysis was performed to evaluate and compare the success, reliability, and validity of 21 instruments related to school engagement. While there is an interest in school and student engagement, there are inconsistencies by researchers as what data points and information related to school engagement are worth collecting and using for research and policy purposes.

Arguably, the instruments compiled by REL is the first attempt in the literature to present a list of common variables and constructs that can be measured, collected, and analyzed. These instruments include student self-reports, teacher reports, and observational reports that capture a snapshot of what is going on at either the school or classroom level. Some of the variables that

are measured include how much effort the student puts towards certain assignments, how a student feels about different subjects, how student feels about the teacher and learning environment, strategies that the student uses to be a better learner, and their individual behaviors related to school work (e.g., working hard, listening attentively). As presented in later sections, there is some overlap between these variables and constructs and the ones that are of interest for the data analysis portion of this thesis.

Within the National Survey of Children's Health (NSCH), school engagement is a measure that consists of a.) cares about doing well and b.) completion of homework. While the NSCH includes and defines school engagement as such, it must be noted that the definition must not be limited to simply a.) caring about doing well in school and b.) completing all required homework, as seen previously in the variables and constructs listed by REL. According to a survey utilized by the State of North Dakota, school engagement can encompass how interested the student is in his/her respective classroom – including how the student feels about doing similar tasks every day, how he/she prepares for a test, and how they like in-class activities (North Dakota Department of Public Instruction, 2018). Further, the survey dives deeper into how students feel about their school as a whole – including the different afterschool programs and activities, school rules, and the teachers and administrations (North Dakota Department of Public Instruction, 2018).

Additionally, the Elementary Student Engagement Survey provides an effective answer of school engagement and provides insight on the concept of school connectedness, a component of the CDC's Whole School, Community, Child (CDC Healthy Schools, 2018). The CDC's Whole School, Community, Child (WSCC) model is another aspect of school engagement – the larger school and community level as well as the feeling connected, safe, and affective reactions

by the student. Additionally, the model integrates various topics and themes common among public health, school health, and education – such as, the psychosocial climate of a school, nutrition services, and physical and health education - to seamlessly provide supports to students to allow them to feel more connected. The WSCC moves away from solely focusing on questions related to behavioral or emotional questions and focusing more on having friends, having a teacher that listens, having a mentor, being involved in clubs and extracurriculars, having parents involved, and – ultimately, having an extended network of support – that students flourish more and have better post-secondary outcomes, self-efficacy, and opportunities.

With children and adolescents spending a great deal of their time in an educational setting outside of the home, it is evident that education plays a large role in the development processes in a child's life. It has been identified in the literature that there are certain populations that have lower school engagement and academic achievement, such as non-Hispanic Black students and low-income students (Jacobson, 2018; Sturgis, 2012). Further, there is evidence that school engagement reduces the likelihood of engaging in risky and unsafe behaviors (Dolzan et al., 2015; Dube and Orpinas, 2009). Thus, positing that those affected populations have a greater likelihood of partaking in risky and unsafe behaviors.

2.2 Violence and Crime

Violence, unintentional injuries, and crime are all public health issues that stem from risky behaviors and result in domino effects on other avenues of life - primarily, as a negative influence on quality of life and developmental skills. Community violence and neighborhood disorder is a growing issue that impacts vulnerable populations - specifically, children and adolescents. Community violence and neighborhood disorder is defined and characterized as a

"breakdown of order and social control, that can undermine the quality of life" (Marco et al., 2015). This lack of "order and social control" that is referred to is extensive and includes physical disorder, in addition to societal norms. Neighborhood disorder includes behaviors demonstrated by community residents, such as robberies, gang violence, prostitution, and other instances of crime (Marco et al., 2015). It also includes aspects of the built environment, often referred to as physical disorder, such as detracting and negative community elements - specifically, the presence of abandoned buildings, dilapidated housing, litter, graffiti, and broken glass (Marco et al., 2015).

Both community violence and neighborhood disorder are diseases that plague the area that they're in - severely, impacting the residents, the infrastructure, the social capital, and financial investments and economic return for those particular communities and/or neighborhoods. While there is a plethora of information and research about the impact that social neighborhood disorder has on youth - primarily through literature related to adverse childhood experiences (ACEs) - there is a need for additional research on how physical neighborhood disorder negatively influences children and adolescents. On an ecological level, community factors have a substantial influence on children and adolescent developmental outcomes - such as, physical health, mental health, behavioral health, socialization, and academic performance.

The built environment that a child or adolescent resides in as well as their culminated lived experiences shape a multitude of outcomes - including educational and mental and behavioral health outcomes. When youth are exposed to social neighborhood disorder, such as witnessing violent crimes, fights, and/or arguments, they are more prone to develop a form of trauma - commonly, in the form of post-traumatic stress disorder (PTSD). Those neighborhoods with social neighborhood disorder have a greater likelihood of experiencing and having physical

neighborhood disorder - primarily, due to the limited social capital and societal and community factors from an ecological perspective (Volker, 2017). Under the Broken Windows Theory, which acts as a feedback loop, the quality of the physical built environment in a neighborhood or community dictates the behaviors of the social climate in the same neighborhood or community (Walker and Schuurman, 2015; Wilson and Kelling,1982). With increased litter, graffiti, abandoned cars, and decayed amenities - such as, broken street lights, dilapidated housing, and abandoned housing, there will be an increased presence of violent crimes (Wilson and Kelling,1982; Volker, 2017).

The presence of this blight and its resulting violent community-level behavior ultimately impacts the youth living in those neighborhoods. In particular, simple day-to-day activities, such as walking to school or playing in the neighborhood have profound public health consequences (Webb Jamme et al., 2018). When exposed to physical and social disorder, school-aged youth are more prone to have poor mental health outcomes and are at a 38% increase in developing poor health outcomes (Boynton-Jarrett et al., 2008; Fowler et al., 2009). Dealing with physical, mental, and behavioral health issues that result from the consistent exposure to blight has an impact on school performance among youth. Per the Broken Windows Theory, the physical disorder accompanied by the social disorder of a neighborhood instills a sense of worry and unease and feeling unsafe among youth. The overwhelming feelings culminate into stress and increased cortisol levels resulting in somatic symptoms (Hart et al., 2012). With the loud and lasting background noise emitting from the community and neighborhood disorder, that "noise" potentially manifests within the child - making it hard to focus and concentration on the curriculum. Further research is needed to examine how the physical built environments affect educational outcomes children and adolescents in the school setting.

2.3 Built Environment

While there is an abundance of literature related to neighborhood safety and supportiveness as it relates to reducing risky behaviors among youth, reducing the likelihood of crime and violence, and increasing cohesiveness in the community, there is limited research on how the physical, built environment can reduce or promote risky behaviors, crime, violence, and cohesiveness in the community - aside from the Broken Windows Theory – as it relates to children and adolescents. Typically, in the literature, the built environment and subsequent violence is related to decreased physical activity, accessibility to healthy foods, walkability, and location of public transportation when focusing on children and adolescents (Echeverria et al., 2014). There is more focus on the social environment of a neighborhood, such as social cohesion, rather than the built environment, which is defined as "encompassing aspects of a person's surroundings which are human-made or modified" (Burns and Snow, 2012; Papas et al., 2007). Characteristics of the built environment include the presence or lack of adequate street lighting, sidewalks, recreation centers, graffiti, abandoned homes and buildings, and litter (Burns and Snow, 2012; He, Paez, and Liu. 2017).

When a community flourishes and thrives, its residents flourish and thrive; however, if a community is considered dangerous or unsafe then it can yield unhealthy and poor health outcomes – both acute and chronic. Built environments with limited amenities or resources can pose as stressors and trigger negative reactions among individuals residing in those communities. For instance, in a study conducted by James et al. (2017), it was found that while those adults that live in an area that is deemed walkable and have increased access to necessities, there was significant increase in the rates of depression symptoms and antidepressant use. Despite having

possibilities to engage in physical activity, the increased rates of depression symptoms can be attributed to noise pollution, air pollution, and stressors related to the built environment that individuals are living in (James et al., 2017). If the built environment has alarming effects on mental health and well-being, then the consequences of the built environment could only result in dire and profound effects on children and adolescents that last well into adulthood (Villanueva et al., 2016). Such stressors can translate into traumatic events, the development of adverse childhood experiences (ACEs), and various mental health disorders. All of which disrupts learning and development among youth and – ultimately – negatively impacting school engagement.

Additional mental health consequences stemming from inadequate built environment include a general lowered mental well-being and quality of life due to the extent and nature of degradation within the community (Moore et al., 2018). Moreover, the impact that the lack of amenities, such as green space, playgrounds, and recreation or community centers proves to have a detrimental impact on the cognitive, emotional, and behavioral development processes among children and adolescents (Hass et al., 2018; Wells and Evans, 2003; Wells, 2000; Evans, 2006; Diez Rouz and Mair, 2010). As noted previously, these are the same areas that are captured within school engagement. Disrupting the crucial and sensitive developmental period in a youth's life could easily be prevented with the proper community and neighborhood planning.

Further, through ongoing research and policy recommendations from Graham et al. (2013), it is evident that populations living in marginalized communities, such as cities like Detroit, are plagued with vast "economic devastation and built environment degradation" are in need of assistance to break the ongoing cycle that continues to perpetuate their neighborhoods and communities. With the presence of abandoned buildings and lots, there is an opportunity for

crime and violence to flourish which supports both the Broken Window Theory and Social

Disorganization Theory (Graham et al., 2013; He, Paez, and Liu, 2017; Wilson and

Kelling,1982).

It important to note that there is a need to expand the gap and address how the built

environment impacts other aspects of child and adolescent development. Specifically, the

psychosocial and emotional developmental factors of a child. There is limited empirical research

about the impact on the mental health and well-being of a child that the structural built

environment has – especially, on student success, academic achievement, and school

engagement.

Overall, after reviewing the literature, it was found that there was a gap in focusing on

solely school-aged students – particularly, the impact of their immediate communities on their

school engagement. As previously stated, the majority of the literature focuses on traditional

college-aged students and how they are acclimated with living away from home and adjusting to

new environments, new peers, new academic courses, and new instructors. While it is pertinent

to address the emotional and social connections to a student's respective academic institution,

there is a severe gap in examining and measuring the influence of these sub-areas on being

engaged when it comes to actual classwork, homework, tests, and other assessments associated

with participation and involvement in school. The current study makes a point to use a school

engagement variable as an outcome measurement for the behavioral and cognitive dimensions of

school engagement, instead of an exposure like many other research studies.

Further, the literature indicates that there is more focus and attention on the social

influence and detrimental effects of living in a neighborhood or community with limited

amenities – including amenities that were not part of the National Survey of Children's Health

list, such as vicinity of grocery stores within a mile and half mile radiuses, bus stops and other forms of public transportation, the presence of street lights. The primary focus in the literature, while important, is on the developmental impact on youth and adolescents living in communities lacking amenities and/or riddled with violence and disorder.

Moreover, upon exploring and reviewing the literature, it was noted that there was a noticeable absence in the proposed study area of interest – the Southeastern United States – as it relates to school engagement. In the present study, the gap in the literature is addressed by exploring the influence of the community-built environment on school engagement among youth ages 6-17 years of age in the Southeastern United States. There is not much data or research for the population of interest within this region – especially, as it pertains to educational outcomes and community variables. With this study, additional information as it relates to community amenities – or the lack thereof – and school engagement will be used to expand the literature and to provide recommendations for future interventions, policies, and initiatives in education, public health, and urban planning.

Chapter III: Methods and Procedures

3.1 Population and Data

Data from the 2011–2012 National Survey of Children's Health (NSCH) were analyzed. The NSCH sample consisted of 95,677 children ages 0 to 17 years. The study population is a nationally representative sample of non-institutionalized children and adolescents. The NSCH utilizes a cross-sectional sampling design and uses random digit dialing and telephone surveys to collect detailed information from households with at least one child, on topics related to health and well-being, community amenities and school activities, and medical coverage (Centers for Disease Control and Prevention, n.d.). From each eligible household, one child was randomly selected to be the subject of the survey and the parent or guardian that has knowledge of that child's health completed the survey. The complete description of the 2011–2012 survey is available at http://www.cdc.gov/nchs/slaits/nsch.htm (CDC). Because the NSCH is a public data set, institutional review board (IRB) approval was not required for this analysis.

3.2 Inclusion and Exclusion Criteria

This current study conducts a secondary analysis on the 2011-2012 NSCH dataset. For this study, the population of interest is school-aged children aged 6-17 years; therefore, children under the age of 6 were excluded. HRSA Region IV is the area of interest and it includes the following states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee; thus, all other states and national information were excluded for the analysis. Among the 2011-2012 HRSA Region IV respondents, the sample size was 8,668 children.

3.3 Measures and Variables

Dependent Variables

The primary NSCH child health indicator of interest is school engagement, which is measured through the following outcome measures: *a. child cares about doing well in school* and *b. child completes all required homework.* The indicator and related variables are considered to be flourishing behaviors - which are behaviors that can be used to gauge resiliency and protective factors among youth. In the 2011-2012, the answer choice that parents could choose from ranged from never, rarely, sometimes, usually, or always. School engagement as an overall outcome measure was dichotomized as '0' = no school engagement and '1' = school engagement.

Outcome measure: The child cares about doing well in school

In the 2011-2012 survey, parents were asked to report how much their child care about doing well in school, with answers varying among never, rarely, sometimes, usually, or always. For the purpose of this analysis, the measure was dichotomized into two responses, with '0' = the child never or rarely cares about school and '1' = the child sometimes, usually, or always cares about school.

Outcome measure: The child does all required homework

In the 2011-2012 survey, parents were asked to report how whether their child completed all required homework, with answers varying among never, rarely, sometimes, usually, or always. For the purpose of this analysis, the measure was dichotomized into two responses, with '0' = the child never or rarely completes all required homework and '1' = the child sometimes, usually, or always completes required homework.

Independent Variables

Presence of detracting elements

For this analysis, the presence of detracting neighborhood elements was the primary exposure of interest. The NSCH identifies the presence of detracting neighborhood characteristics as a child health indicator. It was defined presence of *detracting neighborhood elements* by affirmative answers to at least one of the following questions: (1) In your neighborhood, is there litter or garbage on the street or sidewalk?; (2) How about poorly kept or rundown housing?; or (3) How about vandalism such as broken windows or graffiti? The variable was dichotomized into two responses '0' = no detracting community element and '1' = at least one detracting community element present.

Age group

Age group is an independent variable within this study that categorizes the selected child's age at the time of the interview. The variable used the "ageyr_child" variable and created three age categories from the initial survey questions. This study is interested in school-aged youth and used only two of the three age categories: 6 to 11 years old and 12 to 17 years old. For the purpose of the analysis, this variable was dichotomized into two responses, with '0' = 6 to 11 years old and '1' = 12 to 17 years old.

Sex

Sex is an independent variable that is self-identified by the parent or caregiver completing the survey. For the analysis, the variable "sex_11" classified sex; however, the variable was renamed as sex and recoded as '0' = male and '1' = female.

State

State is an independent variable that is self-identified by the parent or caregiver completing the survey. For the analysis, the variable "state" classified the state that the child resided in; however, the variable was renamed as newstate and recoded as '1' = Georgia, '2' = Alabama, '3' = Florida, '4' = Kentucky, '5' = Mississippi, '6'= North Carolina, '7' = South Carolina, and '8' = Tennessee.

Race/ethnicity

Race/ethnicity is an independent variable that is self-identified by the parent or caregiver completing the survey. For the analysis, the variable "race_4_11" classified the race/ethnicity of children as: Hispanic, white, black, and other; however, the variable was renamed as race and recoded as '1'=Hispanic, '2'=White, non-Hispanic, '3'=Black, non-Hispanic, and '4'=Other.

Repeated grade

Repeated period is an independent variable that is self-identified by the parent or caregiver completing the survey. For the analysis, the variable "ind5_2_11" classified whether the child has repeated any grades since beginning kindergarten; however, the variable was renamed as rptgrade and recoded as '0'= no grades repeated and '1'= grade(s) repeated.

Neighborhood safety

Neighborhood safety is an independent variable that is self-identified by the parent or caregiver completing the survey. For the analysis, the variable "K10Q40" classified whether the child lived in a safe neighborhood or community; however, the variable was renamed as safety and recoded as '0' = neighborhood is not safe and '1' = neighborhood is safe.

Neighborhood violence

Neighborhood violence is an independent variable that is self-identified by the parent or caregiver completing the survey. For the analysis, the variable "ACE7" classified whether the child was a victim of violence or witnessed violence in his/her neighborhood; however, the variable was renamed as violence and recoded as '0' = child did not witness or experience neighborhood violence and '1' = child did witness or experience neighborhood violence.

Family structure

Family structure is an independent variable that is self-identified by the parent or caregiver completing the survey. For the analysis, the variable "famstruct_11" classified the type of family structure; however, the variable was renamed family and recoded as
'1' = two-parent (biological), '2' = two-parent (step), '3' = single mother – no father, and '4' = other.

3.4 Data Analysis

Statistical Analysis Software (SAS) 9.4 was used to conduct a secondary analysis of the 2011–2012 National Survey of Children's Health dataset. Wald's chi square tests and bivariate

analyses to provide descriptive statistics and determine the association between school engagement and the various sociodemographic variables. To examine the association between the presence of detracting community elements and school engagement, odds ratios (ORs) and 95% confidence intervals were calculated. Logistic regression models were built separately to determine the association between detracting elements and school engagement. Covariates included in all models to control for confounding include race/ethnicity, family structure, age group, sex of the child, neighborhood violence, neighborhood safety, state the child resided in, family structure and repeated grade.

Chapter IV: Results

4.1 Descriptive characteristics

Overall, 8,668 children ages 6-17 years of age were from HRSA Region IV were included in this analysis, with over half being male (52.1%). Of the children included in this current study, 64% were non-Hispanic White, 20% were non-Hispanic Black, and roughly 8% for both Hispanic and Other, respectively. Of the states included in HRSA Region IV, 12.1% students resided in Alabama, 12.5% students resided in Florida, 12.3% students resided in Georgia, 12.6% resided in Kentucky, 12.7% resided in Mississippi, 12.0% resided in North Carolina, 13.5% resided in South Carolina, and 12.3% resided in Tennessee.

4.2 Result of bivariate analysis

Results of the bivariate analysis (Table 1) revealed a statistically significant difference between school engagement and all of the participant characteristics, with the exception which state students live in (p-value <.0001). Further, of the 1600 students who had no school engagement, 22.8% of them have repeated a grade. Out of the students that lacked school engagement, 58.5% were 12 to17 year-olds and 67.8% were male. Moreover, students residing in Kentucky (13.6%), Mississippi (13.7%), and South Carolina (13.4%) all had higher prevalence of no school engagement when compared to other states in the region (12% prevalence or less). Additionally, when comparing Kentucky, Mississippi, and South Carolina students that lacked school engagement with those that exhibited school engagement, there was a higher prevalence of no school engagement. Similarly enough, in both "cares about school" and "completion of homework" – the two variables that the NSCH combines to create school engagement – there was a statistically significant difference among all participant characteristics except for the state the student lives in.

In Table 2, the characteristics for the built environment were reported and revealed a statistically significant difference between residing in a neighborhood with detracting community elements and the state they reside in (p-value <.0001). Also, there was a significant difference between the presence of detracting community elements and living in a safe neighborhood, witnessing or being a victim of violence, repeating a grade, race/ethnicity, and family structure (p-value <.0001).

4.3. Result of multivariate analysis

When analyzing school engagement and detracting community elements using a simple linear regression, it was found that the crude odds ratio (OR) is 1.51 (1.34-1.71 95% CI). After adjusting, detracting community elements had an adjusted odds ratio of 1.24 (1.09-1.41 95% CI). In the unadjusted analysis, students living in neighborhoods with detracting community elements were more likely to have poor school engagement, not care about school, and not complete homework compared to their counterparts living in communities or neighborhoods free of those detracting community elements, with crude odds ratio 1.51 (1.34-1.71 95%CI), 1.40 (1.22-1.60 95% CI), 1.58 (1.37-1.82 95% CI), respectively.

Moreover, in the unadjusted model with living in a safe neighborhood and school engagement, compared with students who live in a safe neighborhood (referent group), students that do not live in a safe neighborhood have a greater odds of having no school engagement, with a crude odds ratio of 0.50 (0.42-0.58 95% CI). In the adjusted model, students living in an unsafe neighborhood still have greater odds of having no school engagement with an adjusted odds ratio of 0.58 (0.49-0.70 95% CI).

Additionally, in the unadjusted model with race and school engagement, compared with White, non-Hispanic students (referent group), Black, non-Hispanic students had higher odds of having no school engagement (crude odds ratio, 1.34 (1.18-1.53 95% CI)). In comparison to the standard two-parent biological family structure (referent group), two-parent step family structures (2.36 OR, 1.99-2.79 95% CI), single mother structures (2.19 OR, 1.91-2.51 95% CI), and other family structures (2.25 OR, 1.89-2.68 95% CI) all had higher odds of exhibiting no school engagement.

Table 4.3 provides the results for both the crude and adjusted odds ratios for no school engagement. For the adjusted model, all covariates were included in the model. The primary independent variable was the presence of detracting community elements. In the adjusted model, when comparing students aged 12-17 years of age with those that were 6-11 years of age, the older group of students were more likely to experience low levels of school engagement (aOR 1.63, 1.46-1.83 95% CI). When comparing gender, males had a greater likelihood to lack school engagement in comparison to their female counterparts (aOR 0.45, 0.40-0.50 95% CI). Those that witnessed or were victims of violence have a greater odds not having school engagement (aOR 1.80, 1.52-2.15 95% CI).

Chapter V: Discussion

Studies on the topic of school engagement often focus on school climate, the familial relationships, and adverse childhood experiences to indicate an association; however, there is a deficit when determining an association between school engagement and the built environment. Specifically, there is a lack when it comes to using a nationally representative sample of youth aged 6-17 years of age. The purpose of this study was to understand the associations between school engagement and the built environment – particularly, the presence of detracting community element.

For this study, the 2011-2012 NSCH data were used to determine an association. This survey collects data on characteristics of a child's physical and emotional health, including parental health, family interactions, school and after-school experiences, and neighborhood safety. The survey was conducted by telephone in 2011 and 2012.

Unsurprisingly, students who did not have school engagement, did not complete homework, and did not care about school had greater odds of repeating a grade in school. Moreover, students that live in neighborhoods with at least one detracting community element and have witnessed or been a victim of neighborhood violence are less likely to have school engagement.

5.1 Discussion by Hypothesis

Hypothesis 1: *The demographic characteristics associated with school engagement are race, gender, and repeating a grade.*

The bivariate analysis conducted revealed that there were multiple demographic characteristics associated with school engagement. Overall, the analysis supported the hypothesis and indicated that race, gender, and repeating a grade were all statistically significant.

In addition to the covariates that were hypothesized to be associated with school engagement, there were other characteristics that were found to be associated with school engagement, including: family structure, living in a supportive neighborhood, living in a safe neighborhood, and age group. In the current study's analysis, it was found that older students, ages 12 to 17 years, have a higher prevalence of lacking school engagement when compared to their younger peers. This is concurrent with evidence in the literature regarding the predictors and risks for high school dropouts. In a case study conducted by McKee and Caldarella (2016), there were several indicators identified that contribute to an increased risk of dropping out among students. Some of those indicators were parental education level, family structure, gender, academic performance and achievement, attendance, which are similar to several of the covariates included in the current study (McKee and Caldarella, 2016).

In addition to the McKee and Caldarella (2016) study, other studies strongly indicate that there are significant risks for not completing high school that stem from adverse living conditions and environmental influences (Peters and Woolley, 2015). Further, high school drop out rates have been unwavering for the last several decades, according to an article by Orthner et al. (2010). There have been multiple policies and funding allocated to schools – including the No Child Left Behind Act to address poor performance on standardized testing; however, these resources have not made a significant impact on the overall success and achievement among students across the United States (Orthner et al., 2010). In order to move the needle, it is pertinent to implement and utilize strategies and programs that target students' personal interests and their future career and post-secondary plans and goals (Orthner et al., 2010; Lapan et al., 2002; Castellano, Stringfield, and Stone, 2003). There is a need to increase buy-in from students and schools are responsible for catering to students' needs. This already occurs when

maintaining the safety and wellbeing of students; however, improving the level of engagement and garnering interest among students is an area that schools are still overlooking. While the individual schools, local school systems, and state level school boards have collective responsibility in the matter, the state of the neighborhood and communities that these schools are in play an equally crucial role.

According to the literature, youth living in communities and neighborhoods deemed as unsafe and exhibit instances of violence, crime, neighborhood disorder and disarray, and other forms of community level stressors drastically decrease academic success and school engagement in students (Peters and Woolley, 2015; Caughy et al., 2012; Bowen et al., 2008). This evidence further supports the current study, with those students that witness or have been victims of neighborhood violence having 2.61 times the odds of having low or no school engagement when compared to their counterparts that were not exposed to such adverse experiences (Table 3.1).

Hypothesis 2: The psychosocial characteristics associated with detracting community elements are exposure to community violence and absence of neighborhood supports.

Overall, the analysis reveals that there are significant differences present among the various characteristics included in the bivariate analysis. The analysis clearly supported the hypothesis that there is a significant difference between neighborhood safety, neighborhood supports, and the exposure to community or neighborhood violence. In the present study, there is an association between detracting community elements and race, family structure, and the state that the students reside in. There is insurmountable evidence in the literature that supports the influence of the elements and characteristics within a given community or neighborhood on the health of not only youth and adolescents, but adults and the general population, as well. For

instance, in a study conducted by South et al. (2015), there is evidence that residing in a neighborhood with blight results in higher stress and corresponds with higher prevalence of chronic diseases. Further, the study did a comparison of spaces that were dilapidated and vacant with those that were demolished, renovated, and replaced with greenspaces (South et al., 2015).

The restoration of these neighborhoods and communities – even restoring something as a simple and small as a vacant lot or maintaining the lawn – have demonstrated that they have a profound effect on mental health and physical health of neighborhood residents (South et al., 2018). The maintenance and presence of community amenities improves morale and increases responsibility, accountability, and buy-in from neighborhood and community residents (Stewart et al., 2019). This further enhances the social and neighborhood cohesion as well as neighborhood safety and supports that were captured and measured in the current study. Moreover, this posits into the previously mentioned "Broken Windows Theory" and the effects of neighborhood disorder and disarray on individuals. Additionally, neighborhood greenness, along with school greenness (i.e., outside classrooms and views of gardens, trees, and open greenspace), are positively associated with lower stress levels, increased concentration on academic activities, increased motivation to learn, and higher graduation rates and test scores (Kuo et al., 2018; Kuo, 015; Becker et al., 2017; Browning et al., 2018; Matsuoka, 2010; Wu et al., 2014; Kweon et al., 2017; Hodson and Sander, 2017).

Finally, the findings in the current study indicate that being exposed to detracting community elements does negatively impact school-related outcomes, such as school engagement, completing homework, and caring about school. In a study conducted by Browning et al. (2018), it was found that the lack of greenspace and the overwhelming amount of blight in the community had detrimental effects on students' academic performance (2018). To offset the

risk that communities lacking greenspace and other amenities, communities across the nation, including a Flint, Michigan community that researchers Susan Morrel-Samuels, Marc. A. Zimmerman, and Thomas M. Resichl have implemented an intervention using the socioecological as reference. The intervention, centered at the Michigan Youth Violence Prevention Center (MI-YVPC), prevents youth violence through various community renovation and restoration projects. Specifically, MI-YVPC promotes community participation and visibility, increases neighborhood and community cohesion, and has youth involved in ridding and eliminating blight in their respective neighborhoods (Morrel-Samuels, Zimmerman, Resichl, 2013). This approach encourages a relationship between stakeholders and professionals and researches, creates buy-in, and makes the neighborhood and community a safer place, thus reducing crime, disarray, and disorder.

Hypothesis 3: Students that are exposed to living in an unsafe neighborhood and repeating a grade are more prone to having lower levels of school engagement.

The multivariate analysis revealed that students living in an area with detracting community elements, being a student between the ages of 12 and 17 years, and having a family structure that strayed away from the typical two-parent biological household, are all substantial associations on the outcome of school engagement among youth. Particularly, the findings that had the highest odds ratios were those of repeating at least one grade and witnessing or being a victim of community or neighborhood violence. There is strong evidence in the literature that supports witnessing or being a victim of community or neighborhood violence. Exposure to violence as a child is classified as an adverse childhood experience (ACE) and is critical in child and adolescent development. The exposure influences various aspects of child development, such as school absenteeism and development of mental health issues.

One study in conducted by Stempel et al. (2017), details the impact that adverse childhood experiences have on a student's academic and school-related behavior. Using the 2011-2012 NSCH, an association was established between ACEs and chronic absenteeism, not only contributed to students missing 15 or more days of school in a school year, but it is also associated with students having lower levels of school engagement, higher likelihood of repeating a grade, and lower levels of academic success and overall school performance (Stempel et al., 2017). Chronic absenteeism is one of the many indicators related to school success and engagement. Further various studies found that community violence leads to mental health issues and trauma, which disrupts learning and engagement in an academic setting and – ultimately, in a work setting as the child and adolescent transitions to adulthood (Mendelson, Turner, and Tandon, 2010; DeMatthews and Brown, 2019, Ludwig and Warren, 2009).

Strengths and Limitations

The strength of the current study is that it adds to the literature by determining an association between structural characteristics of a neighborhood or community with specific school-related outcomes, such as school engagement and repeating a grade. Much of the literature includes studies and research related to the influence of the neighborhood's social environment on school engagement levels – such as neighborhood cohesion. Further, the current study uses a nationally representative sample of children, which allows for the findings to be more generalizable to the population.

Despite the strength of using a nationally representative survey and dataset, this study does have some limitations. With the overall concept of school engagement, there were numerous ways to measure the concept in the literature and different indicators for it. Because

of the varying definitions, measures, and indicators, it is possible that researchers are failing to capture critical information among school-aged youth. One of the more immediate limitations is the National Survey of Children's Health is a cross-sectional; thus, causation cannot be established. Next, there is potential bias due to the nature of reporting answers to the survey. Rather than children answering the survey questions, parental guardians answered and completed the survey. It is not possible to ensure that parental guardians provided accurate answers or could have been impacted by the Hawthorne Effect and altered their answers. Finally, this survey was administered using landline house phones. Because landlines were used, there is a great possibility that individuals were missed due to not owning a landline or due to the time of day the survey was being conducted.

Implications and Future Research

With education being a social determinant of health and the built environment – particularly, urban planning, greenspace, and creating healthy communities – being a public health concern, it is pertinent to expand on these findings through the design and implementation of future program and interventions. Further, by participating in and introducing evidence-based interventions into the communities, there can be an increase in data to be used for policy change. Policy change will allow for additional investments in the community, increase social capital, and stimulate the community. Ultimately, this will trickle down and disrupt the vicious cycle that was discussed previously and, instead, promote a safer community that residents can be invested in and will improve school engagement and academic achievement among youth residing in the community. While improving the quality of the neighborhood's structural environment is necessary, it is extremely important to keep residents involved in the

conversations and to keep residents in their communities – rather than pushing them out through gentrification.

One of the surprising aspects of this study is that the state in which the students resided in was not associated with school engagement or with the presence of detracting community elements. Because of this, it would be interesting to conduct a study that either stratified the states or if the research study were repeated at the local or state level – rather than the regional and national level. Further, it was expected that race and ethnicity would have a profound effect with both school engagement and detracting community elements; however, that was not the case. Much of the literature supports and identifies that African American and Hispanic youth are most at-risk for living in a neighborhood or community deemed as violent, unsafe, or that contains detracting community elements, such as litter, abandoned home, and vandalism. Future research can potentially stratify by race to see what, if any, association and effects exist between a child's race and their school engagement, based on living in neighborhood that lack structural amenities.

Conclusion

Overall, this study indicates that there is a strong association between the main independent variable - the presence of detracting community elements, such as abandoned home or buildings, trash or litter in the neighborhood, and vandalism – and school engagement, including caring about school and completing homework. This study also revealed an extremely strong association between low levels of school engagement and exposure to community and neighborhood violence. With such compelling evidence supporting and indicating that built environmental factors yield social environmental responses and, ultimately, negatively influence

school-aged youth, it is crucial for schools, neighborhoods, and communities to allocate appropriate resources needed to invest in future generations. Simple prevention efforts, such as implementing programs where residents of neighborhoods and community leaders can meet with one another and create a dialogue, voice their concerns, and become more invested and accountable with maintaining the upkeep of the neighborhood or community, should be established to reduce blight and improve social networks and neighborhood cohesion. Additionally, more efforts should be made to improve protective factors based around the demographics that have a relationship with no school engagement – specifically, males, older students, and students that have already repeated a grade or have been close to repeating a grade. Future research should explore how other characteristics of school engagement are influenced by a more extensive list of neighborhood or community elements. A future study like this should be longitudinal to determine if there is causation.

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Tables

Table 1: Descriptive characteristics of HRSA Region IV students aged 6-17 years stratified by school engagement

Demographics	No School Engagement	School Engagement	Total	P-value
	N% = 1600 (18.46)	N(%) = 7068 (81.54)	8668	n/a
Age				
Median (IQR)	12 (9-14)	11 (8-14)		
			8668	
Age Group				<.0001 ***
6-11 Years of Age	664 (41.5)	3916 (55.4)	4580	
12-17 Years of Age	936 (58.5)	3152 (44.6)	4088	
Gender				<.0001 ***
Male	1085 (67.8)	3429 (48.5)	4514	
Female	515 (32.2)	3639 (51.5)	4514	
Race/Ethnicity				<.0001 ***
White, non-Hispanic	982 (61.4)	4557 (64.5)	5539	
Black, non-Hispanic	382 (23.9)	1320 (18.7)	1702	
Hispanic	139 (8.7)	623 (8.8)	762	
Other	97 (6.1)	568 (8.04)	665	
Family Structure				<.0001 ***
Two-parent household (biological)	727 (45.4)	4607 (65.2)	5334	
Two-parent household (step)	237 (14.8)	637 (9.0)	874	
Single-mother household	423 (26.4)	1224 (17.3)	1647	
Other*	213 (13.3)	600 (8.5)	813	
Repeated Grade				<.0001 ***
Yes	365 (22.8)	552 (7.8)	917	
No	1235 (77.2)	6516 (92.2)	7751	
HRSA Region IV States				0.6776
Georgia	187 (11.7)	876 (12.4)	1063	
Alabama	195 (12.2)	855 (12.1)	1050	
Florida	197 (12.3)	883 (12.5)	1080	
Kentucky	217 (13.6)	875 (12.4)	1092	
Mississippi	219 (13.7)	880 (12.5)	1099	
North Carolina	185 (11.6)	859 (12.2)	1044	

South Carolina	215 (13.4)	959 (13.6)	1174	
Tennessee	185 (11.6)	881 (12.5)	1066	
Live in Safe Neighborhood				**<.0001 *****
Yes	1357 (84.8)	6493 (91.9)	7850	
No	243 (15.2)	575 (8.1)	818	
Child witnessed or victim of neighborhood violence.				**<.0001 *****
Yes	267 (16.7)	503 (7.1)	770	
No	1333 (83.3)	6565 (92.9)	7898	

IQR = interquartile range

Other – foster, grandparent, single-parent other

*** indicates statistically significant at the 0.05 alpha level.

Table 2: Descriptive characteristics of HRSA Region IV student aged 6 to 17 years stratified by detracting community elements

Demographics	No Detracting Elements	At least 1 Detracting Element	Total	P-value
	N(%) = 6526 (75.3)	N(%) = 2142 (24.7)	8668	n/a
Age				
Median (IQR)	11 (8-14)	11 (8-14)		
Age Group				0.8337
6-11 Years of Age	3444 (52.8)	1136 (53.0)	4580	
12-17 Years of Age	3082 (47.2)	1006 (47.0)	4088	
Gender				**0.0234**
Male	3444 (52.8)	1070 (49.9)	4514	
Female	3082 (47.2)	1072 (50.1)	4154	
Race/Ethnicity				**<0.0001 *****
White, non-Hispanic	4226 (64.8)	1313 (61.3)	5539	
Black, non-Hispanic	1201 (18.4)	501 (23.4)	1702	
Hispanic	594 (9.1)	168 (7.8)	762	
Other	505 (7.7)	160 (7.5)	665	
Family Status				**<0.0001 *****
Two-parent household (biological)	4171 (63.9)	1163 (54.3)	5334	
Two-parent household (step)	658 (10.1)	216 (10.1)	874	
Single-mother household	1121 (17.2)	526 (24.6)	1647	
Other*	576 (8.8)	237 (11.1)	813	
Repeated Grade				**<0.0001 *****
Yes	625 (9.6)	292 (13.6)	917	
No	5901 (90.4)	1850 (86.4)	7751	
HRSA Region IV States				**<0.0001 *****
Georgia	849 (13.0)	214 (10.0)	1063	
Alabama	782 (12.0)	268 (12.5)	1050	
Florida	862 (13.2)	218 (10.2)	1080	
Kentucky	776 (11.9)	316 (14.8)	1092	
Mississippi	758 (11.6)	341 (15.9)	1099	

North Carolina	821 (12.6)	223 (10.4)	1044
South Carolina	884 (13.6)	290 (13.5)	1174
Tennessee	794 (12.2)	272 (12.7)	1066
Live in Safe Neighborhood			**<0.0001 *****
Yes	6098 (93.4)	1752 (81.8)	7850
No	428 (6.6)	390 (18.2)	818
Child witnessed/victim of neighborhood violence.			**<0.0001 *****
Yes	6076 (93.1)	1822 (85.1)	7898
No	450 (6.9)	320 (14.9)	770

IQR = interquartile range

Other – foster, grandparent, single-parent other

*** indicates statistically significant at the 0.05 alpha level.

Table 3: School engagement and risk factors for low school engagement among HRSA Region IV youth aged 6-17 years – unadjusted and adjusted odds ratios

Variable	Unadjusted OR (95% CI)	P-Value	Adjusted OR[a] (95% CI)	P-value
Detracting community element		**<0.0001 *****		**<0.0001 *****
Yes	Ref		Ref	
No	**1.51 (1.34-1.71)**		**1.24 (1.09-1.41)**	
Age Group		**<0.0001 *****		**<0.0001 *****
6-11 Years of Age	Ref		Ref	
12-17 Years of Age	**1.71 (1.57-1.96)**		**1.63 (1.46-1.83)**	
Gender		**<0.0001 *****		**<0.0001 *****
Female	Ref		Ref	
Male	**0.45 (0.40-0.50)**		**0.45 (0.40-0.50)**	
Race/Ethnicity				
White, non-Hispanic	Ref		Ref	
Black, non-Hispanic	**1.34 (1.18-1.53)**	**<0.0001*****	1.10 (0.92-1.31)	0.3077
Hispanic	1.04 (0.85-1.26)	0.7300	0.79 (0.61-1.03)	0.0782
Other	**0.79 (0.63-0.99)**	**0.0400**	0.94 (0.87-1.02)	0.1197
Family Status				
Two-parent household (biological)	Ref		Ref	
Two-parent household (step)	**2.36 (1.99-2.79)**	**<0.0001*****	**1.62 (1.36-1.93)**	**<0.0001*****
Single-mother household	**2.19 (1.91-2.51)**	**<0.0001*****	**1.27 (1.07-1.50)**	**0.0042**
Other*	**2.25 (1.89-2.68)**	**<0.0001*****	**1.27 (1.20-1.34)**	**<0.0001 *****
Repeated Grade		**<0.0001 *****		**<0.0001 *****
No	Ref		Ref	
Yes	**3.49 (3.02-4.04)**		**2.57 (2.20-3.00)**	
HRSA Region IV States				
Georgia	Ref		Ref	
Alabama	1.07 (0.86-1.33)	0.5585	0.98 (0.75-1.29)	0.8846
Florida	1.05 (0.84-1.30)	0.6953	1.00 (0.79-1.28)	0.9774
Kentucky	1.16 (0.94-1.44)	0.1754	1.06 (0.87-1.31)	0.5513
Mississippi	1.17 (0.94-1.44)	0.1647	1.02 (0.84-1.25)	0.8330
North Carolina	1.00 (0.81-1.26)	0.9383	1.01 (0.83-1.24)	0.8967
South Carolina	1.05 (0.85-1.30)	0.6571	1.04 (0.83-1.29)	0.7473
Tennessee	0.98 (0.79-1.23)	0.8855	1.00 (0.99-1.00)	0.8663

Live in Safe Neighborhood		<0.0001 ***			<0.0001 ***
Yes	Ref		Ref		
No	0.50 (0.42-0.58)		0.58 (0.49-0.70)		
Child witnessed/victim of neighborhood violence.		<0.0001 ***			<0.0001 ***
No	Ref		Ref		
Yes	2.61 (2.23-3.07)		1.80 (1.52-2.15)		

Other – foster, grandparent, single-parent other

[a]Adjusted for age group, race/ethnicity, gender, family structure, repeated grade, HRSA IV state, neighborhood safety, and violence

*** and **bold** indicate significant difference