EXAMINING THE RELATIONSHIP BETWEEN NEIGHBORHOOD ENVIRONMENT, CONNECTEDNESS, AND MENTAL HEALTH AMONG BLACK YOUTH

Melissa Lydia Villodas

A dissertation submitted to the faculty at the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the School of Social Work.

Chapel Hill
2022

Approved by:
Amy Blank Wilson
Trenette Clark Goings
David Ansong
Michelle Munson
Von Nebbitt
ABSTRACT

Melissa Lydia Villodas: Examining the Relationship Between Neighborhood Environment, Connectedness, and Mental Health Among Black Youth
(Under the direction of Amy Blank Wilson)

The prevalence of mental health challenges continues to worsen among youth, with Black youth experiencing increases in rates of suicide attempts compared to all other racial and ethnic groups. Mental health challenges can develop from exposure to risks in the neighborhood environment which influences the type and level of stress that people are exposed to as well as the available social resources needed to build connectedness for managing mental health symptoms. The three studies comprising this dissertation investigate the relationships between the neighborhood environment, connectedness, and mental health among Black youth. Paper one engaged a systematic review of studies exploring the relationship between the neighborhood environment and mental health outcomes of Black youth. Paper two used a hierarchical regression to understand the explanatory power of perceived neighborhood environment and connectedness on mental health symptoms. Paper three used a random-intercept cross-lagged panel model to examine the bidirectional and longitudinal relationship between mental health symptoms and connectedness over time. Both papers 2 and 3 used data from the Pathways to Desistance Project, examining these relationships among juvenile justice-involved Black youth. Results from paper one highlights several aspects of the neighborhood environment that contribute to a range of mental health challenges. Gaps include research on Black youth with marginalized sexual and gender identities, disabilities, immigrant identities, and juvenile justice-involved youth. Results from paper two indicate that the addition of four types of connectedness (peer, family, school, and community) significantly contributed to an increase in the proportion of variance explaining mental health symptoms above and beyond demographic variables and perceived neighborhood environment. Results from Paper 3 indicate that connectedness
predicted subsequent decreases in mental health symptoms during a time when participants were transitioning to adulthood. This dissertation contributes to a gap in research on the relationships between the neighborhood environment, connectedness, and mental health among vulnerable Black youth. Research presented here suggests the presence of a nuanced relationship between connectedness, mental health, and neighborhood factors that require further study. Future studies should use these findings to develop interventions that bolster connectedness among justice-involved Black youth to improve mental health symptoms.
To my family – those who have come before me and those to follow
ACKNOWLEDGEMENTS

I begin my acknowledgments by expressing deepest gratitude to my dissertation chair, Dr. Amy Blank Wilson. You said I could do this, and here I am! Thank you for your guidance and reassurance along the way. I have grown in confidence and ability thanks to the time, energy, and dedication you have invested into our mentoring relationship. I would also like to thank the rest of my committee members, who together with Dr. Amy Blank Wilson make up the academic version of the 1992 Olympic Dream Team. I am privileged to be mentored by leaders in the field. Dr. Trenette Clark Goings, Dr. David Ansong, Dr. Michelle Munson, and Dr. Von Nebbitt, you all have taught me so much about this work and about myself. I am exceedingly grateful for your generosity with your time and commitment to my success.

Mom and Dad – Nicolasa and Richard Villodas – I am so fortunate to be the product of your love. You are and have always been my greatest cheerleaders. My work and persistence are sustained by your enduring love. (P.S. - I promise I am done with school, for real this time!)

To my siblings - Rick, Jason, Laura, and Michelle – thank you each for your support in this process. Rick, you understand the vulnerability of the writing process more than anyone. Thank you for reading my abstracts and reminding me my work is important. Jason, thank you for reminding me that Black is brilliant and that my ancestors are always with me. Laura, thank you for bearing the burden of more complaints than anyone else, for always answering my calls and lending an ear. Michelle, I am so thankful we’ve been able to navigate professional and educational milestones together. Thank you for sharing a life journey with me.
David, Grace, Angela Baez. Thank you for always welcoming me into your homes - a haven of love and safety. Momi and Nakoa, thank you for inviting me to take play breaks. Dissertating was made possible with good food, long talks, and lots of laughter.

My love, Brandon Flowers. Thank you for always being my anchor of stability and a loving presence. Your encouragement and comforting words are always timely and have been especially resonant during the dissertation process.

Thank you to my peers in the doctoral program, especially Alex Forte who has graciously sat beside me (virtually and in our glorious office) the entire way. Alex, Daniel Gibbs, and Hayden Dawes - our mute and working channel that emerged during the pandemic has provided the community and friendship among colleagues that I needed to make it to the finish line. You are each incredibly brilliant and I look forward to our future research team meetings. You all are stuck with me forever. Thank you to my supportive research lab mates Jon Phillips, Ehren Dohler, and Anjalee Sharma, to my colleague and neighbor Dr. Ting Guan, and my former lab mate Dr. Anna Parisi – I am thankful to you all for your friendship and collaboration.

Finally, thank you to all my friends and family, who are many in number, for your patience during my graduate school journey. Especially Jazmine Lugo, Elaine Baez, Maria Soler, and Jeffrey Rojas. To my dance team for helping me move my body every day – especially Andrés Hincapié and Susan Mykalcio. And to the faculty and staff of the UNC School of Social Work, especially Dr. Todd Jenson and Dr. Kirsten Kainz, for the support and mentorship provided along the way.
# Table of Contents

LIST OF TABLES ......................................................................................................................... x

LIST OF FIGURES ....................................................................................................................... xi

LIST OF ABBREVIATIONS ........................................................................................................... xii

INTRODUCTION ............................................................................................................................. 1

References: Introduction ............................................................................................................... 9

PAPER 1: Examining the Relationship Between Neighborhood Environment and Mental Health Outcomes of Black Youth: A Systematic Review ......................................................... 15

Introduction ................................................................................................................................. 15

Methods ....................................................................................................................................... 19

Results ......................................................................................................................................... 23

Discussion .................................................................................................................................... 31

References: Paper 1 ....................................................................................................................... 39

PAPER 2: Testing the Stress Process Model: The Influence of Perceived Neighborhood Environment and Connectedness on Mental Health Symptoms of Justice-Involved Black Youth ............................................................... 49

Introduction ................................................................................................................................. 49

Methods ....................................................................................................................................... 55

Results ......................................................................................................................................... 62

Discussion .................................................................................................................................... 64

References: Paper 2 ....................................................................................................................... 68

PAPER 3: The Relationship Between Connectedness and Mental Health Symptoms Among Black Juvenile Justice-Involved Youth: A Random-Intercept Cross-Lagged Panel Model ...... 77
LIST OF TABLES

Table 1.1 Study Characteristics and Findings.................................................................110
Table 1.2 Aspects of Neighborhood Environment and Definitions..............................128
Table 2.1 Descriptive Statistics......................................................................................135
Table 2.2 Summary of Hierarchical Regression Analysis for Variables Predicting Juvenile Justice-Involved Black Youth’s Mental Health................................................................136
Table 3.1 Descriptive Analysis of Study Variables..........................................................137
LIST OF FIGURES

Figure 1.1 Prisma Table of Search and Selection Process.........................................................138

Figure 1.2 Methodological Quality of Included Manuscripts as Assessed Using the Mixed Methods Appraisal Tool........................................................................................................139

Figure 3.1 Conceptualization of the random intercept cross-lagged panel model and paths.....140

Figure 3.2 Random intercept cross-lagged model (RI-CLPM) testing Mental Health Symptoms and Connectedness........................................................................................................141
### LIST OF ABBREVIATIONS AND SYMBOLS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha$</td>
<td>Cronbach’s alpha</td>
</tr>
<tr>
<td>ACES</td>
<td>Adverse childhood experiences</td>
</tr>
<tr>
<td>ADHD</td>
<td>Attention deficit hyperactivity disorder</td>
</tr>
<tr>
<td>$b$</td>
<td>Beta coefficient</td>
</tr>
<tr>
<td>B.L.U.E.</td>
<td>Best linear unbiased estimates</td>
</tr>
<tr>
<td>CFI</td>
<td>Comparative fit index</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence interval</td>
</tr>
<tr>
<td>ECV</td>
<td>Exposure to Community Violence</td>
</tr>
<tr>
<td>$F$</td>
<td>F statistic</td>
</tr>
<tr>
<td>FIML</td>
<td>Full information maximum likelihood</td>
</tr>
<tr>
<td>ISP</td>
<td>Index of social position</td>
</tr>
<tr>
<td>MLR</td>
<td>Maximum likelihood estimation with robust standard errors</td>
</tr>
<tr>
<td>MMAT</td>
<td>Mixed methods appraisal tool</td>
</tr>
<tr>
<td>N</td>
<td>Number of participants ($n$ indicates subsample)</td>
</tr>
<tr>
<td>PNE</td>
<td>Perceived neighborhood environment</td>
</tr>
<tr>
<td>PRISMA</td>
<td>Preferred Reporting Items for Systematic Reviews and Meta-analyses</td>
</tr>
<tr>
<td>PTSD</td>
<td>Post-traumatic stress disorder</td>
</tr>
<tr>
<td>$R^2$</td>
<td>R squared</td>
</tr>
<tr>
<td>RI-CLPM</td>
<td>Random intercept cross-lagged panel model</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Root mean square error of approximation</td>
</tr>
<tr>
<td>SRMR</td>
<td>Standardized Root Mean Squared Residual</td>
</tr>
<tr>
<td>TAY</td>
<td>Transition aged youth</td>
</tr>
</tbody>
</table>

xii
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLI</td>
<td>Tucker-Lewis index</td>
</tr>
<tr>
<td>VIF</td>
<td>Variance inflation factor</td>
</tr>
<tr>
<td>$w$</td>
<td>Within-group</td>
</tr>
<tr>
<td>$X^2$</td>
<td>Chi-Square</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>Change in R-squared</td>
</tr>
</tbody>
</table>
INTRODUCTION

Since 2012 the prevalence of mental health challenges among youth has rapidly grown worse in the United States (Bernaras et al., 2019; Bitsko et al., 2018; Griffin et al., 2018; Keyes et al., 2019). This is particularly concerning for Black youth who have experienced alarming increases in rates of suicide attempts compared to all other racial and ethnic groups in the last thirty years (Lindsey et al., 2019; SAMHSA, 2020). Among Black youth, rates of major depressive episodes have also increased from 9 percent to 10.3 percent in three years (i.e., 2015 to 2018) (Mental Health America, n.d.). Additionally, the increasing rates of major depression and suicidality among Black youth have been accompanied by increasing use of emergency services for mental health issues, which were significantly higher than White youth from 2012-2016 (Abrams et al., 2022).

Mental health challenges can develop, in part, from exposure to risks in the neighborhood environment (Caspi, 2003; Lindsey et al., 2017). The neighborhood environment influences both the type and level of stress people are exposed to and the resources available for managing these stressors (Snedker & Herting, 2013). In particular, neighborhoods within the United States have both systematically and generationally perpetuated socioeconomic disadvantage (concentration of lower socioeconomic status individuals within neighborhoods) for racially minoritized communities which is linked to increased stress and more mental health challenges (Anglin et al., 2021; Hurd et al., 2013). The stressors associated with disadvantaged neighborhoods are often accompanied by fewer available social resources (Voisin & Kim, 2018) which may negatively
influence youth’s ability to build positive relationships, resulting in greater mental health challenges across youth living in stressful neighborhood environments (Animosa et al., 2018).

Though the neighborhood environment is an important contributor to mental health outcomes like depression, much of the research on mental health symptoms among youth generally, has focused more heavily on individual- and family-level predictors and correlates (Cairns et al., 2014; Cook et al., 2017). However, connectedness, the degree to which individuals or groups are socially close, interrelated, cared for, and respected by others, can be particularly important in promoting mental health among vulnerable and marginalized youth who experience stressful neighborhood environments (Saeri et al., 2018; Sapiro & Ward, 2020). Supportive relationships that are formed within neighborhood environments (e.g., relationships with peers, school, community, and family) can act as a buffer against mental health challenges (Zwecker et al., 2018). Yet these relationships are also widely overlooked among vulnerable youth populations and require further investigation to elucidate approaches to supporting positive mental health.

**Black Youth Mental Health**

While overall prevalence rates of mental illness are similar across racial/ethnic groups, the burden of mental illness among Black individuals is more likely to result in persistent mental illness compared to White individuals with the same disorders (Breland-Noble, 2004; Breslau et al., 2005, 2006). This burden, among Black youth, may be explained by several structural factors including poverty, discrimination, institutional racism, and additional stressors associated with their disproportionate residence in socio-economically disadvantaged neighborhoods (Anglin et al., 2021; Bitsko et al., 2022; Joe, 2006; Opara et al., 2021).
One particularly vulnerable group of Black youth that requires targeted attention is juvenile justice-involved Black youth. Although Black youth aged 12 to 17 make up 14% of adolescents in the United States, they are involved in 35% of juvenile justice cases and represent over 40% of incarcerated youth in the United States (Hockenberry & Puzzanchera, 2020; Sue & Sue, 2016; Washington et al., 2021; Wilson et al., 2022). An estimated 40% - 60% of youth in the juvenile justice system contend with mental health challenges without adequate resources for support and treatment (Altschuler & Brash, 2004; Fields & Abrams, 2010). Additionally, 63% of studies that examine the decision to provide mental health services to youth in the juvenile justice system reveal racial disparities in the decision to refer youth to mental health services in six out of nine juvenile justice decision points (Cohen et al., 2011; Spinney et al., 2016).

Neighborhood Environment

Racial disparities found in the juvenile justice system are associated with disadvantaged neighborhood environments (Craig et al., 2021). Disadvantaged neighborhood environments are characterized by high rates of poverty (Ross & Mirowsky, 2001). These neighborhoods often hold a historical legacy of concentrated socioeconomic disadvantage, racial segregation, discrimination, over policing, and mistreatment that can intensify juvenile justice involvement and sentencing decisions for adjudicated delinquent Black youth (Desai et al., 2012; Lacey, 2013; Office of Juvenile Justice and Delinquency Prevention, 2022; Washington et al., 2021). Black Americans are more likely than other racial groups to be “stuck in place” across generations (Sharkey, 2013). Studies report up to 66% percent of Black Americans live in the most disadvantaged neighborhoods (Butler & Grabinsky, 2020; Sharkey, 2013). Disadvantaged neighborhoods are often high in neighborhood physical and social disorder that can shape how
individuals perceive their neighborhood environments and impact mental health symptoms (Chang & Baskin-Sommers, 2020; Hull et al., 2008; Snedker & Herting, 2013). For example, living in disadvantaged neighborhoods can intensify neighborhood stressors like increased exposure to community violence (ECV), gang activity, drug use and other exposures associated with poverty like ethnic density, perceived neighborhood disorder (e.g., vandalism) and urbanicity among others (Anglin et al., 2021; Fitzpatrick et al., 2005; Ofoneda et al., 2013; Opara et al., 2021). These stressors are often concentrated within areas, where Black children are disproportionately concentrated (Acevedo-Garcia et al., 2020).

**Connectedness**

The stressors associated with disadvantaged neighborhoods are often accompanied by fewer available social resources (Voisin & Kim, 2018) which may influence youth’s ability to build connectedness, resulting in greater mental health challenges across youth in these neighborhood environments (Animosa et al., 2018). Connectedness involves several relationships including those with family, friends, school, and community, and has been identified as having an important role in shaping mental health (Breslau et al., 2006; Deitz et al., 2020; Eraslan-Capan, 2016; Lee & Robbins, 1998; Maton et al., 1998; Saeri et al., 2018; Townsend & McWhirter, 2005). Individuals with low connectedness, however, may be more prone to mental health symptoms related to psychological distress, anxiety, depression, and may struggle with in successfully managing their needs and feelings (Eraslan-Capan, 2016; Hall-Lande et al., 2007; Lee & Robbins, 1998).

**Theoretical Orientation**

The stress process model is a theoretical framework that can help explore the relationship between the neighborhood environment, connectedness, and mental health symptoms of
vulnerable Black youth, like those involved in the juvenile justice system. The stress process model has been used in neighborhood research to explain the connection between low socioeconomic status and high levels of psychological distress among people living in socioeconomically disadvantaged areas (Aneshensel, 2009). In the stress process model, introduced originally by Pearlin and colleagues (1981), life events are theorized to induce feelings of stress that lead to mental health problems. In this theoretical framework, stress arises from both discrete and continuous problems (Pearlin et al., 1981). The model’s attention to contextual inequality faced by individuals living in areas with low access to psychosocial resources and the stratification of neighborhoods that intensify exposure to stress, captures the lived experience of Black youth as a result of the effects of systemic racism (Aneshensel, 2009; The Annie E. Casey Foundation, 2012). Aneshensel’s (2009) discussion of the Stress Process Model explains that the perception of disorder within the neighborhood environment is a secondary stressor from the objective and primary stressor of low socioeconomic status (Aneshensel, 2009). As a result of the stressors that come with low socioeconomic status, individuals respond by retreating socially and psychologically. This leads people to avoid certain areas and keep to themselves, which likely decreases access to important supportive relationships and opportunities to build connectedness that can buffer mental health challenges (Aneshensel, 2009). In this model, exposure to stressors within the neighborhood environment, alongside low socioeconomic status and fewer social resources to manage these stressors, may deteriorate mental health status (Elliott, 2000).

**Dissertation Focus**
The goal of this dissertation is to build a greater understanding of the relationship between the neighborhood environment, connectedness, and the mental health symptoms of vulnerable Black youth. This dissertation uses a three-paper format to address three study aims.

Aim 1

First, recognizing that neighborhoods are multidimensional and influence mental health through several mechanisms (Acevedo-Garcia et al., 2020), this dissertation contributes to a gap in knowledge by synthesizing research on the relationship between the neighborhood environment and mental health symptoms among Black youth. Aim 1 focuses on this relationship among Black youth aged 11-18. To address this aim, a systematic review of peer-reviewed literature was conducted to address the following research questions: (1) What aspects of the neighborhood environment contribute to mental health challenges among Black youth? (2) What is known about the relationship between neighborhood environment and mental health among Black youth?

Aim 2

Secondly, few studies have explored the constructs of neighborhood environment and connectedness together among a particularly vulnerable population of Black youth – those involved in the juvenile justice system. The goal of Aim 2 was to explore the combined explanatory power of perceived neighborhood environment and types of connectedness (school, peer, family, and community) in predicting mental health symptoms as described in the stress process model. This study used a hierarchical regression analysis to explore the following questions: (1) Does Black youth’s perception of the neighborhood environment explain more variance in mental health symptoms scores than the demographic variables alone? (2) Does the addition of four distinct types of connectedness (peer, family, community, school) explain more
variance in mental health symptoms scores above and beyond demographic variables and perceived neighborhood environment? And (3) Does the relation between perceived neighborhood environment and mental health symptoms vary across demographic variables?

**Aim 3**

Finally, the temporal ordering of connectedness and mental health symptoms among juvenile justice-involved Black youth have yet to be explored (Quinn et al., 2021). The purpose of Aim 3 was to explore the longitudinal and bidirectional relationship between mental health symptoms and connectedness among a sample of Black juvenile justice-involved youth (Usami, 2021). This study utilizes a random intercept cross-lagged model (RI-CLPM) to investigate the following questions: (1) Is there a reciprocal association between connectedness and mental health symptoms among Black, juvenile justice-involved youth over time? and (2) does one construct (connectedness or mental health symptoms) predict the other over time? Given the gap in longitudinal research on justice-involved youth mental health and connectedness, this study also explores if (3) significant relationships are present between neighboring waves of mental health symptoms and each set of neighboring waves of connectedness within participants over time.

**Organization of the Dissertation**

The three papers in this dissertation address important gaps in research and provide findings that can be used among practitioners, researchers, and policymakers to work together to support positive mental health outcomes among marginalized youth. All three papers were organized around a central theme but were prepared to be able to stand on their own and therefore contain repeated information when necessary. Each paper is presented in a separate
chapter. A concluding chapter is presented where the findings from the three papers are discussed and implications for future research and practice are considered.
REFERENCES: Introduction


Bitsko, R. H., Holbrook, J. R., Ghandour, R. M., Blumberg, S. J., Visser, S. N., Perou, R., &


https://ojjdp.ojp.gov/model-programs-guide/literature-reviews/racial-and-ethnic-disparity#6


Introduction

The prevalence of mental health challenges among youth has rapidly grown worse in the United States since 2012 (Bernaras et al., 2019; Bitsko et al., 2018; Griffin et al., 2018; Keyes et al., 2019). This is particularly concerning for Black youth who have experienced alarming increases in rates of suicide attempts compared to all other racial and ethnic groups in the last thirty years (Lindsey et al., 2019; SAMHSA, 2020). Additionally, rates of major depressive episodes increased from 9 percent to 10.3 percent in three years (i.e., 2015 to 2018) (Mental Health America, n.d.). The increasing rates of major depression and suicidality among Black youth have also been accompanied by the increasing use of emergency services for mental health issues, which were also significantly higher than white youth from 2012-2016, and may be attributed to increased environmental stressors faced by minority youth (Abrams et al., 2022).

Mental health challenges can develop, in part, from exposure to risks in the neighborhood environment (Caspi, 2003; Lindsey et al., 2017). The neighborhood environment influences both the type and level of stress people are exposed to and the resources available to cope with these stressors (Snedker & Herting, 2013). In particular, neighborhoods within the United States have both systematically and generationally perpetuated socioeconomic disadvantage (concentration of lower socioeconomic status individuals within neighborhoods) for racially minoritized communities and this is linked to increased stress and mental health challenges (Anglin et al., 2021; Hurd et al., 2013). Though the neighborhood context is an important contributor to mental
health symptoms, much of the research on these mental health symptoms among youth generally, has focused on individual- and family-level predictors and correlates (Cairns et al., 2014; Cook et al., 2017). Due to sparse and inconsistent findings in the extant literature (Gary et al., 2007) and in response to the growing focus on place-based interventions to address rising trends of Black youth mental health challenges (Acevedo-Garcia et al., 2020), this current study seeks to gain a greater understanding of the relationship that neighborhood environment has with the mental health of Black youth.

**Black Youth Mental Health**

While overall prevalence rates of mental illness are similar across racial/ethnic groups, the burden of mental illness among Black individuals is more likely to result in persistent illness compared to White individuals with the same disorders (Breland-Noble, 2004; Breslau et al., 2005, 2006). This burden may be explained by a number of structural factors, including poverty, discrimination, institutional racism, and additional stressors associated with their disproportionate residence in socioeconomically disadvantaged neighborhoods (Anglin et al., 2021; Bitsko et al., 2022; Joe, 2006; Opara et al., 2021). Additional neighborhood stressors include increased exposure to community violence (ECV), gang activity, drug use and other exposures associated with poverty like ethnic density, perceived neighborhood disorder (e.g., vandalism), and urbanicity, among others (Anglin et al., 2021; Fitzpatrick et al., 2005; Ofonodu et al., 2013; Opara et al., 2021). These stressors are often concentrated within areas where Black children disproportionately reside (Acevedo-Garcia et al., 2020). Due to Black youth’s disproportionate residence in under-resourced neighborhoods, increased attention is needed to understand how the conditions where many Black youth live continues to increase the burden of persistent mental health challenges (Acevedo-Garcia et al., 2020; Opara et al., 2021).
The Neighborhood Environment

Hill and Maimon (2013) define neighborhood as distinct geographical areas where groups of people live and interact with one another. The neighborhood environment in which people live and interact is particularly important for positive youth mental health as mental health symptoms may vary by risks that emerge from the places where people live (Acevedo-Garcia et al., 2020; Hill & Maimon, 2013). For example, some characteristics of the neighborhood environment associated with poor mental health symptoms include socioeconomic disadvantage, community violence (witnessing and being a victim of), influences from delinquent peers, drug use, social disorganization, and community cohesion (Colorado Department of Public Health & Environment, 2017; Cutrona et al., 2006; Fitzpatrick et al., 2005; Leventhal & Brooks-Gunn, 2003). The fear associated with community violence has been documented to impact feelings of safety and has been linked to psychological distress and increased suicidal behavior among youth (Jipguep & Sanders-Phillips, 2003; V. E. Nebbitt, 2015; Ofondu et al., 2013). Understanding the full range of ways in which neighborhood environments impact youth mental health can be complex as neighborhoods can be defined by both boundaries and conditions (e.g., physical, social, cultural, economic, and political environments) and because they are multidimensional and influence mental health through several mechanisms (Acevedo-Garcia et al., 2020; Hill & Maimon, 2013). With variation in the way neighborhoods are defined and examined and its disparate findings on the impacts on mental health, it is necessary to identify the elements of the neighborhood environment that impact mental health symptoms. Particularly so among Black youth, who bear the greatest burden of neighborhood disadvantage and persistence of mental illness.
The neighborhood environment is studied objectively (or structurally) based on observable data, including measures of neighborhood structure (e.g., housing characteristics and number of parks), neighborhood social organization (e.g., racial and ethnic composition, poverty index), and neighborhood disorder (e.g., crime or incarceration rates) and subjectively based on social processes and perceptions of ambient risks which characterize individual’s experiences in neighborhood (Aneshensel & Sucoff, 1996; Hill & Maimon, 2013; Mair et al., 2008). Because of this, it is imperative to situate our inquiry of the influences of the neighborhood environment on Black youth mental health symptoms across varying descriptions of the neighborhood environment. Particularly, among Black youth who disproportionately reside in socioeconomically disadvantaged neighborhoods where systemic inequities increase the propensity of neighborhood risks that increase the vulnerability for poor mental health outcomes (Murphey et al., 2018; Lindsey et al., 2019; McArdle & Acevedo-Garcia, 2017; Perry et al., 2015; Sampson et al., 2002).

**Present Study**

The prevalence of mental health challenges among youth continues to grow worse in the United States and efforts to address the alarming rates of suicidality in Black youth continue to unfold. Addressing this public health crisis of youth mental health will be aided in the investigation of the aspects of the neighborhood environment that contribute to mental health challenges among Black youth (Office of the Surgeon General (OSG), 2021). Recognizing that neighborhoods are multidimensional and influence mental health through several mechanisms (Acevedo-Garcia et al., 2020), this review contributes to the body of literature by synthesizing the existing research on the relationship between the neighborhood environment and mental health symptoms among Black youth. Understanding this relationship through existing literature
may aid in building knowledge to address the pressing public health concern among Black youth. This study engaged the following research questions: (1) What aspects of the neighborhood environment have previous studies found contribute to mental health challenges among Black youth? and (2) What is known about the relationship between neighborhood environment and mental health symptoms among Black youth in the existing literature?

**Methods**

This review was prepared using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines (Moher et al., 2009) and was registered with PROSPERO (Villodas et al., 2021, registration number CRD42021276785). The development of the protocol, which included bibliographic searches, study inclusion and exclusion, and data extraction, was completed a priori. Content experts and a social science librarian assisted with the development of the protocol in relation to the research question and search terms.

**Inclusion and Exclusion**

Studies were eligible for inclusion if they (a) evaluated a sample of Black (African American, African, or Caribbean) youth aged 11-18 as either the primary sample or specified as a subgroup, (b) evaluated at least one mental health outcome, (c) included a measure of the neighborhood environment as the primary independent variable, (d) were published in English, and (e) were conducted in the United States. All studies that presented empirical findings were included. No restrictions were made on the time of publication, and no grey literature aside from dissertations and theses were included. Systematic reviews and meta-analyses were excluded from this study.

Neighborhood environment in this study was conceptualized broadly to include neighborhood-level factors (e.g., employment rates, % poverty), as well as perceived
neighborhood (e.g., neighborhood conditions, perceived safety), and exposure to neighborhood or community violence (e.g., witnessing and victimization). These aspects were included because to understand the role of the neighborhood environment on mental health symptoms, there is a need to capture the neighborhood environment in a way that addresses both the place-oriented (e.g., geography, structures, boundaries, landmarks) and people-oriented components (e.g., personal views, social ties and control, place attachment) (Siordia & Saenz, 2013). Further, a broad conceptualization of the neighborhood environment provides an opportunity to capture how neighborhood environment is operationalized and measured across studies.

Mental health as the outcome of interest is also conceptualized broadly in this study. According to a 2016 systematic review by Liang and colleagues on mental health diagnostic considerations in racial and ethnic minority youth, African American youth are frequently diagnosed with psychotic and disruptive behavioral disorders and are less likely to be diagnosed with mood disorders. This is likely because of racial bias that can result in interpreting certain behaviors as disruptive, masking other forms of mental distress among Black youth (Bitsko et al., 2022). Therefore, the inclusion of a broad range of mental health and behavioral health diagnoses and symptoms is critical in this study for understanding the state of the research on this population. Other diagnoses, conditions, and mental and behavioral health outcomes in this study included suicidality, self-harm, conduct disorder, oppositional defiant disorder, psychotic disorder, and attention deficit hyperactivity disorder (ADHD). Additionally, because culture may influence what emotions or behaviors are discouraged and because the absence of mental disorder does not necessarily mean the presence of good mental health, symptoms or syndromes can function as alternatives to understanding how mental health problems are expressed (Allen et
Therefore, this study also included terms such as anger, aggression, well-being, hopelessness, and psychological distress.

Finally, the racial category of Black is broadly defined in this study to include several different ethnic groups in the United States that identify as being members of the African and Black Diaspora (e.g., African Americans, Afro-Latino/a/x, African immigrants). This approach acknowledges the diversity of Blackness within the United States (Kebede, 2019), as well as the entrenched racism and discrimination experienced by members of the African and Black Diaspora in the United States, which is intimately tied to where people live (Yip, 2018).

**Search Strategy**

A social science librarian assisted with identifying relevant bibliographic databases and developing search terms based on the conditions determined above. Seven bibliographic databases were used for the review. The databases included PubMed, PsychInfo, Eric, Social Work Abstracts, Social Service Abstracts, Sociological Abstracts, and Scopus. Search terms included a combination of free-text and controlled vocabulary with the following root words:

i. Neighborhood, community, public housing, social environment, census, socioeconomic disadvantage, built environment, zip-code, subjective appraisal, objective indicator, social organization, structural characteristics, and structural environment

ii. Black, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, Caribbean, Afro-Latinx, and African diaspora

iii. Youth, adolescence, young people, teen, high school, and middle school

iv. Mental health, mental illness, mental disorder, psychiatric illness, psychiatric disorder, mood disorder, bipolar disorder, PTSD, suicide, self-harm, depression,
anger, aggression, conduct disorder, psychotic disorder, attention deficit hyperactivity disorder, psychological distress or hopeless, well-being, and behavioral health.

A full list of search terms used in each database is presented in Appendix A. Additionally, reference-harvesting techniques were used to identify other potentially relevant studies not found through the original search strategy.

**Screening**

Two researchers independently completed the title and abstract screening of all studies. Both researchers assessed all studies independently and resolved any discrepancies in rating using consensus coding techniques (McDonagh & Peterson, 2014). The full-text review was conducted independently by this author.

**Data Extraction and Analyses**

A data extraction sheet was developed to assist with identifying and collecting relevant information from the included studies. One researcher extracted information including title, author, study design (e.g., measurement, analyses), sample size, sample demographics, and neighborhood descriptions. Results discussing aspects of the neighborhood environment that were found to contribute to mental health challenges as well as the relationships between those aspects of neighborhood environment on mental health symptoms and diagnoses were also extracted. This review provides a narrative description of the findings related organized by the two research questions. The extraction form is included in Appendix B.

**Risk of Bias Assessment**

The methodological strengths and limitations of included studies were assessed using the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018). The MMAT is comprised of two screening questions and 25 additional appraisal criteria across five categories of studies:
qualitative, quantitative randomized controlled trials, quantitative non-randomized, quantitative descriptive, and mixed methods studies. Because studies in this review were not limited to specific research designs, the MMAT offered an evaluation of all study types using a single tool (Hong et al., 2018). Although the MMAT can be used to calculate overall scores of methodological strengths by summing the ratings of each criterion, using such scores to assess a study’s strength is discouraged by the MMAT creators. Therefore, this review provides a narrative description of the methodological strengths and weaknesses of the studies included.

Results

The results section begins with an overview of the studies and samples included in this review as well as a summary of the mental health diagnoses and symptoms studied across the extracted studies. Then a narrative review of findings is provided, organized by each research question. First, I review findings on the aspects of the neighborhood environment that influence mental health challenges. Then, I summarize findings on the tested relationships between neighborhood environment and mental health outcomes organized by perceived neighborhood environment, objective neighborhood environment, and exposure to community violence. Table 1.1 provides a summary of information extracted from the studies. Finally, a narrative description of the methodological strengths and weaknesses of the included studies are provided using the MMAT found in Figure 1.2.

Study Samples

Figure 1.1 illustrates the results of the article search and selection process. The initial search resulted in 5,899 studies, of which 1,640 were removed as duplicates. A total of 4,259 titles and abstracts were reviewed by two reviewers, of which 109 studies were included for full-text review. A total of 30 articles met the eligibility criteria and were included in this review,
with publication dates between 1996 and 2021. The study sample sizes ranged from 77 (Paxton et al., 2003) to 3,927 (Wight et al., 2005). Studies were conducted across the United States in varying regions (e.g., northeast, southeast, Midwest, southern), cities (e.g., New York City, Chicago, Los Angeles), across different types of residential areas (e., rural, urban, suburban), and using national datasets where sampling was based on descriptions including socioeconomic status or exposure to violence. Two of the extracted studies were dissertation papers (Brenner, 2012; Scott, 1998) and the remaining studies were peer-reviewed articles.

Key characteristics of included studies can be found in Table 1.1. Depression was the most studied outcome, appearing in 26.2% of the studies (N=15) (Aneshensel & Sucoff, 1996; Byck et al., 2015; Chen, 2010; Cooley-Quille et al., 2001; Gaylord-Harden et al., 2011, 2017; Hammack et al., 2004; Hurd et al., 2013; Kaynak et al., 2011; Kohl et al., 2015; Lambert et al., 2012; McGee, 2003; Paxton et al., 2003; Tache et al., 2018; Wight et al., 2005). Anxiety was the second most studied appearing in 15.3% of studies (N=10) (Aneshensel & Sucoff, 1996; Chen, 2010; Cooley-Quille et al., 2001; Deane et al., 2021; Edlynn et al., 2008; Gaylord-Harden et al., 2011; Hurd et al., 2013; Lambert et al., 2012; Scott, 1998; Tache et al., 2018). Internalizing behaviors and post-traumatic stress disorder or trauma appeared in 13.8% of studies (N = 9, respectively) (Byck et al., 2015; Chen, 2010; Deane et al., 2021; Fredland et al., 2008; Gonzalez et al., 2012; Paxton et al., 2003; Pierre et al., 2020; Scott, 1998; Sun et al., 2020), and aggression appeared as a study outcome in 10.8% of studies (N = 7) (DiClemente & Richards, 2019; Gaylord-Harden et al., 2017; Griffin et al., 1999; Lambert et al., 2012; Robinson et al., 2011; Romero et al., 2015; Tache et al., 2018) while externalizing behaviors appeared in 9.2% of studies (N = 6) (Byck et al., 2015; Cooley-Quille et al., 2001; Fredland et al., 2008; Gonzalez et al., 2012; McGee, 2003; Pierre et al., 2020). The remaining mental health outcomes included
psychopathology, general mental health, psychological stress, and conduct disorder which appear in 3.1% of the studies each (N=2 for each outcome) (Boxer et al., 2014; Brenner, 2012; Byck et al., 2015; Mennis et al., 2018). Suicidality, well-being, conduct disorder, oppositional defiant, dysphoria, hostility, anger, and hyperarousal appeared as an outcome in 1.5% of studies each (N=1 for each outcome) (Aneshensel & Sucoff, 1996; Bennett & Joe, 2015; Deane et al., 2021; Fredland et al., 2008; Gaylord-Harden et al., 2011; Scott, 1998).

Aspects of the Neighborhood Environment that Contribute to Mental Health Challenges Among Black Youth

Question one of this review asks, what aspects of the neighborhood environment contribute to mental health challenges among Black youth? This section discusses aspects of the neighborhood environment that were studied across extracted studies. As described above, these studies captured aspects of the neighborhood environment on various mental health symptoms and diagnoses across Black youth from a broad range of socioeconomic levels and varying cities, states, and regions and residential areas.

Across the extracted studies, some of the aspects that were important for positive mental health across studies included feelings of neighborhood safety (Byck et al., 2015), feelings of neighborhood cohesion (Hurd et al., 2013; Romero et al., 2015), feelings of belongingness and trust among neighbors (Gonzalez et al., 2012), feelings collective efficacy (Aneshensel & Sucoff, 1996), and increased greenspace (Mennis et al., 2018). Aspects of the neighborhood environment that contributed to mental health challenges included ambient hazards or potential dangers (e.g., violent crimes, drive-by shootings, property damage, gangs, drug use, over policing) (Aneshensel & Sucoff, 1996; Griffin et al., 1999; Romero et al., 2015). Other ways ambient risks
were described included perceived neighborhood risk, disorder, and disadvantage (Griffin et al., 1999; Romero et al., 2015).

Other aspects of the neighborhood that have been found to contribute to Black youth mental health challenges included neighborhood-level disadvantage or neighborhood socioeconomic disadvantage (Brenner, 2012, 2012; Byck et al., 2015; Hurd et al., 2013; Romero et al., 2015). Neighborhood disadvantage or neighborhood socioeconomic disadvantage is often represented as composite or factor scores of several census level indicators of disadvantage, including poverty rate (Aneshensel & Sucoff, 1996; Brenner, 2012; Hurd et al., 2013; Romero et al., 2015), residential stability (Hurd et al., 2013; Byck et al., 2016), racial makeup (Byck et al., 2015; Hurd et al., 2013; Wight et al., 2005), unemployment rate (Hurd et al., 2013), low, high, or average socioeconomic status (Byck et al., 2015), proportion of female headed households (Aneshensel & Sucoff, 1996; Brenner, 2012; Romero et al., 2015), number of violent crimes (Romero et al., 2015), percentage of individuals without a high school diploma (Brenner, 2012; Romero et al., 2015), and proportion of unemployment (Aneshensel & Sucoff, 1996).

Finally, additional aspects of the neighborhood environment that contribute to mental health challenges among Black youth include neighborhood violence and crime (Romero et al., 2015; Sun et al., 2020). More specifically, exposure to community violence through witnessing or victimization was extensively studied (Bennett & Joe, 2015; Boxer et al., 2014; Byck et al., 2015; Chen, 2010; Cooley-Quille et al., 2001; Deane et al., 2021; DiClemente & Richards, 2019; Edlynn et al., 2008; Fredland et al., 2008; Gaylord-Harden et al., 2011, 2017; Hammack et al., 2004; Kaynak et al., 2011; Lambert et al., 2012; McGee, 2003; Paxton et al., 2003; Scott, 1998; Tache et al., 2018).
Relationship Between Neighborhood Environment and Mental Health Outcomes Among Black Youth

Question two of this review asks: what is the relationship between neighborhood environment and mental health outcomes among Black youth? This section provides findings from the studies extracted in the review based on tested relationships between the neighborhood environment on mental health outcomes. Findings are organized by three key categories informed by the aspects of the neighborhood environment discussed in question 1. These categories include perceived or subjective neighborhood environment, objective or structural environment, and exposure to community violence, which are described below.

**Perceived or Subjective Neighborhood Environment**

Eight studies explored the relationships between perceived or subjective neighborhood environment and mental health symptoms and diagnoses. These studies focused on varying experiences within the neighborhood environment, including social cohesion, collective efficacy, neighborhood safety, violence, and hazards, neighborhood risk, and perceptions of disorder and context (Aneshensel & Sucoff, 1996; Brenner, 2012; Byck et al., 2015; Gonzalez et al., 2012; Griffin et al., 1999; Hurd et al., 2013; Romero et al., 2015; Sun et al., 2020). The way perceived neighborhood environment was operationalized and measured across studies can be found in Table 1.2. In three studies, greater perceived neighborhood risk was associated with more aggression among urban Black 6th graders (Griffin et al., 1999; Romero et al., 2015), and greater hopelessness among Black youth from single-mother homes (Gonzalez et al., 2012). In particular, gang and drug activity in youth’s neighborhoods was positively correlated with their reports of aggression among urban Black 6th graders (Romero et al., 2015). Perceived neighborhood risks were also found to be a significant predictor of PTSD symptoms among
justice-involved Black girls three months after release from detention centers in a southeastern urban city (Sun et al., 2020). Lower sense of community in neighborhoods were associated with higher levels of hopelessness Black youth from single mother homes (Gonzalez et al., 2012) and perceptions of neighborhood cohesion was related to fewer depressive symptoms among urban Black youth (Hurd et al., 2013).

**Objective and Structural Neighborhood Environment**

Eight studies explored the relationship between the objective neighborhood environment and mental health diagnoses and symptoms. These studies measured the objective neighborhood environment through neighborhood-level disadvantage scores at the census block level, crime statistics, urbanicity, greenspace (Brenner, 2012; Byck et al., 2015; Chen, 2010; Hurd et al., 2013; Mennis et al., 2018; Romero et al., 2015; Wight et al., 2005). The ways the objective neighborhood was operationalized across studies is found in Table 1.2. In one study among Black 6th graders living in low-income Chicago neighborhoods from 1999-2000, census data predicted aggression at baseline and longitudinally (Romero et al., 2015), and in another study using a national sample of youth from 7th to 12th grade census data predicted depressive symptoms among African American youth who resided in majority Non-Hispanic White areas more than Non-Hispanic White youth living in similar areas (Wight et al., 2005). Oppositional defiant disorder was found to be most common among youth living in predominantly poor and African American neighborhoods in Los Angeles County between 1992 and 1994 (Aneshensel & Sucoff, 1996), and living in neighborhoods with high levels of socioeconomic disadvantage (as measured by census data) also increased youths perceived stress level across 6 waves of data among a predominantly Black sample of 9th graders living in a city in Michigan (Brenner, 2012). The studies by Mennis and colleagues (2018) and Chen (2010) were the only studies that
explored the objective and structural neighborhood environment without using census data to predict mental health outcomes of Black youth. This research found that exposure to urban greenspace in the activity spaces of a sample of primarily African American 13- to 14-year-olds living in Richmond, Virginia was associated with lower psychological stress (Mennis et al., 2018).

**Exposure to Community Violence**

Twenty-two studies explored the relationship between ECV and mental health symptoms and diagnoses. Most studies defined ECV as exposure through witnessing or victimization to any deliberate acts intended to cause physical harm against a person or persons in a community influenced mental health symptoms and diagnoses. The ways ECV was operationalized across studies is found in Table 1.2. ECV was significantly related to depressive symptoms across five studies among African American middle and high school students, African American alternative high school students, and African American high school and middle school males (Bennett & Joe, 2015; Gaylord-Harden et al., 2017; Kohl et al., 2015; Paxton et al., 2003; Scott, 1998). ECV was also significantly related to post-traumatic stress across two studies among urban African American males and urban African American youth living in low-income, high-violence neighborhoods (Deane et al., 2021; Paxton et al., 2003), aggression across two studies examining Black male middle and high school students and one study examining 9th grade urban youth (Gaylord-Harden et al., 2017; Robinson et al., 2011; Tache et al., 2018), hyperarousal in one study of Black male high school students (Gaylord-Harden et al., 2017), internalizing behaviors across two studies of Black high schoolers and one national sample of Black middle and high school youth (Chen, 2010; Cooley-Quille et al., 2001; McGee, 2003), trait anxiety in one study of urban Black high school students (Cooley-Quille et al., 2001), and externalizing behaviors in
one study of Black high school students in Virginia (McGee, 2003). Significant bivariate relationships between ECV and externalizing symptoms also was found in one study on urban African American middle schoolers (Fredland et al., 2008).

Three studies specifically explored witnessing community violence and mental health outcomes (Hammack et al., 2004; Lambert et al., 2012; Pierre et al., 2020) and three studies specifically explored community violence victimization (DiClemente & Richards, 2019; Hammack et al., 2004; Pierre et al., 2020). Witnessing community violence was found to have significant relationships with perceived stress, anxiety, depressive symptoms, aggression, and posttraumatic stress symptoms among African American 6th graders in inner-city Chicago, among African American 14-to-18-year old’s living in an urban community, and among predominantly African American youth in 6th to 9th grade (Hammack et al., 2004; Lambert et al., 2012; Pierre et al., 2020). Community violence victimization was significantly associated with increased depressive symptoms among African American 6th graders in inner-city Chicago (Hammack et al., 2004; Pierre et al., 2020), depressive symptoms, stress, and anxiety among African American 14-to-18-year old’s living in an urban community (Pierre et al., 2020), and aggression among Black 6th, 7th, and 8th graders from low-income urban areas (DiClemente & Richards, 2019).

Risk of Bias

Figure 1.2. illustrated the quality of the 30 included studies as assessed using the MMAT. Although this review was not limited to specific research designs, all eligible studies were evaluated using the questions related to quantitative descriptive designs. The methodological quality across studies was determined to be high overall with a majority ($n = 27$, 90%) meeting 80% or more of the criteria. The primary weakness across these studies was the lack of detail.
regarding the risk of non-response bias. Indicators of low nonresponse bias included low nonresponse rate, reasons for nonresponse (e.g., noncontacts vs. refusals), and statistical techniques used to address nonresponse (e.g., imputation) (Hong et al., 2018). This information was not always reported across studies.

**Discussion**

This review extracted several aspects of the neighborhood environment that contribute to a range of mental health challenges Black youth face, including ambient hazards, neighborhood risks and disorder, neighborhood socioeconomic disadvantage, poverty, residential stability, and exposure to violence. This review also identified what is known about the relationship between the neighborhood environment and mental health among Black youth across three categories. These categories included the perceived neighborhood environment, the objective neighborhood environment, and exposure to community violence. The findings are discussed in more detail according to the research questions that drove the review.

**Aspects of the Neighborhood Environment Contribute to Mental Health Challenges Among Black Youth?**

Several aspects of the neighborhood environment that contribute to mental health challenges emerged in this review. The aspects of the neighborhood environment that was most connected to positive mental health outcomes across studies were the social aspects of the neighborhood environment, including neighborhood cohesion, belongingness and trust, and collective efficacy (Aneshensel & Sucoff, 1996; Gonzalez et al., 2012; Hurd et al., 2013; Romero et al., 2015). One exception to this was the study that focused on the physical aspects of the neighborhood that contributes to positive Black youth mental health. Mennis and colleagues found that greenspace contributed to lower psychological stress (Mennis et al., 2018). Ease of
access to the natural environment and outdoor spaces is essential for maintaining positive mental health outcomes, with outdoor activities such as walking, running, cycling, and gardening reducing stress, anxiety and depression (Allen et al., 2014; Barton et al., 2009; Maller et al., 2009). While much of the research on positive mental health is focused on social relationships, the Mennis and colleagues’ study sheds light on the potential importance of examining the built environment as a mechanism for promoting positive mental health, particularly among Black youth.

Most studies in this review focused on the aspects of the neighborhood environment that contribute to mental health challenges among Black youth. These aspects included how Black youth perceive their neighborhood environments (e.g., ambient hazards, perceived neighborhood risk, disorder, and disorder), the neighborhood-level aspects that contribute to negative mental health symptoms (e.g., neighborhood disadvantage, neighborhood socioeconomic disadvantage, poverty rate, residential stability, proportion unemployed), and ECV through witnessing and victimization. ECV was the most studied aspect of the neighborhood environment and was most consistent in operationalization and measurement across studies (see Table 1.2). There was a lot of variability in the ways the perceived aspects and neighborhood-level aspects of the neighborhood environment were measured in studies, which curtails the ability to aggregate and interpret findings across studies.

**What is the Relationship Between Neighborhood Environment and Mental Health Outcomes Among Black Youth?**

Findings on the relationship between neighborhood environment and mental health outcomes among Black youth were organized by three categories: perceived neighborhood environment, objective neighborhood environment, and exposure to community violence.
Perceived neighborhood environment was examined in just over one-fifth of the extracted studies. The Stress Process Model is a theoretical framework that helps to organize and facilitate understanding of the study findings related to perceived neighborhood environment’s impact on the mental health of Black youth. According to the Stress Process Model by Pearlin and colleagues (1981), the experiences of stress that influence mental health symptoms may be induced by perceived neighborhood risk and disorder. Consequently, under the experience of neighborhood stressors, individuals begin to retreat socially and psychologically from protective aspects of their neighborhood environments by avoiding certain areas and keeping to themselves, which likely decreases access to supportive connections that support positive mental health (Aneshensel, 2009; Sapiro & Ward, 2020). Within the stress process model’s theoretical framework, we understand how exposure to perceived neighborhood stressors, coupled with fewer resources to manage these stressors as evidenced by how studies measure the objective neighborhood environment, may result in the deterioration of mental health (Elliott, 2000). The stress process model also offers a framework for examining how the interaction between the objective neighborhood environment and the perceived neighborhood environment may work together to intensify mental health challenges.

The objective neighborhood environment was explored in a quarter of the studies extracted in this review. The objective neighborhood environment was measured using census block groups across studies. Although social scientists utilize census tracts in research to optimize the availability of this data and allow it to serve as a proxy for the neighborhood environment (Siordia & Saenz, 2013), the variability in measurement and operationalization as evidenced by Table 1.2 creates challenges for creating a consistent narrative related to the influence of census indicators on mental health outcomes among Black youth. Further, critiques
on the use of census tracts in mental health research abound, arguing that census boundaries were not intended to be used as scientific markers of the neighborhood environment in the investigation of health and wellness and that census data were actually intended to provide a snapshot of the state of a geographical region that may be important for the ways these areas receive and use economic and political resources to develop an environment that supports physical, social, and psychological wellness (Siordia & Saenz, 2013; U.S. Census, 2020). While census information is useful to understand how areas receive resources, this neighborhood environment marker might not sufficiently capture what young people consider to be their neighborhood environment. As mentioned, Mennis and colleagues (2018) was the only study in this review to utilize smaller units like egocentric buffers of spatial scales (i.e., neighborhood as a radius around a particular location) to explore the built environment and Black youth mental health symptoms.

Finally, most studies in this review explored the relationships between exposure to community violence and mental health symptoms among Black youth. Due to the general consistency of operationalization and measurement of ECV, findings are more consistent across groups of Black youth who were examined in the extracted studies. For example, depressive and internalizing symptoms were present among Black youth attending middle, high, and alternative school, while PTSD was present among Black youth living in low-income areas (Bennett & Joe, 2015; Deane et al., 2021; Gaylord-Harden et al., 2017; Kohl et al., 2015; Paxton et al., 2003, 2003; Scott, 1998).

In light of these findings, it is important to remember that Black youth are not a monolithic group. Although many studies specify differences in findings by gender and center Black youth who are living in socioeconomically disadvantaged neighborhoods, other
intersectional identities of Black youth and their experiences are absent from the literature. Studies extracted in this review did not capture youth with marginalized sexual and gender identities, disabilities, or immigrant identities, nor did they examine mental health findings of Black youth involved in systems Black youth disproportionately encounter like the foster care and the juvenile justice systems (see Sun et al., 2020 as an exception with juvenile justice involved girls).

**Implications for Research, Policy, and Practice**

Findings from this review offer several implications for research, practice, and policy. First, a strength of this study is the broad and inclusive definition of neighborhood environment. This provided an opportunity to elucidate which aspects of the neighborhood environment impact Black youth mental health symptoms across studies. This highlighted the varied operationalization and measurement of neighborhood environment. With this information, researchers committed to improving youth mental health within their neighborhood environments can work toward developing measurement practices that aid in reaching more consistent findings on the influences of the neighborhood environment on Black youth mental health.

Future research may also benefit from mixed methods research on the influence of the neighborhood environment on youth mental health. The combination of both quantitative and qualitative research methods on Black youth mental health may offer valuable information for understanding the mechanisms that can bolster youth mental health in the midst of disadvantaged neighborhood environments from Black youth’s perspectives. With a mixed-methods approach to inquiry on the relationship between neighborhood environment and Black youth mental health, researchers could consider how more distal forms of support (e.g., within neighborhood,
social networks) could be strengthened as part of individual, family, and community intervention work to buffer against toxic stress from the neighborhood environment and increase support for Black youth and their families (Stern et al., 2021).

Additionally, continued investigation about the built environment within a geographically meaningful boundary may prove to be a useful approach to understanding how the objective and structural environment influences Black youth mental health symptoms. A growing number of studies are exploring egocentric boundaries to generate more specific and contextualized findings related to the impact of neighborhood on youth mental health (Duncan et al., 2014), but more can be explored related to mental health symptoms. For example, understanding how Black youth living in disadvantaged neighborhoods connect with natural spaces and the built environment in their neighborhoods will help develop strategies to support interventions that improve public spaces.

Finally, interventions can work toward orienting youth to be engaged within their communities through organizing and community involvement to build a positive perception of their neighborhood environments. Initiatives to build healthy neighborhoods and local resources to support youth mental health can enhance Black youth outcomes in socioeconomically disadvantaged neighborhoods. Although these approaches may be challenging in areas inundated by community violence, the American Rescue Plan (The White House, 2022) provides funding for evidence-based community violence prevention initiatives around the country that can help develop healthier neighborhood environments to reduce ECV.

**Limitations**

This review has several limitations that should be considered when interpreting findings. First, studies were limited to U.S. samples and may not generalize to youth in other countries.
Second, the inclusion criteria for this review included youth aged 11-18 years old. Several studies in the review contained samples that fell outside of this inclusion criteria on both the younger and older side of this range. As such, the exclusion of these studies may leave out important findings related to the adolescent population under 11 years old and above 18 years old. This is particularly true for studies on youth living in public housing (e.g., Bazargan et al., 2005; Nebbitt et al., 2021; Nebbitt et al., 2014; Nebbitt & Lombe, 2007) and additional studies on exposure to community violence (e.g., McMahon et al., 2013; Rosenthal & Wilson, 2003; Voisin & Kim, 2018), perceived neighborhood environment (e.g., Carroll-Scott, 2008; Voisin & Kim, 2018), and objective neighborhood environment (Carroll-Scott, 2008; Liu et al., 2017; McMahon et al., 2013). Third, this review included studies that explored neighborhood environment as the primary independent variable; therefore, studies that explored the neighborhood environment as a moderating or mediating variable were not included unless the primary independent variable was an aspect of the neighborhood environment. Caution should be exercised when interpreting the results of this systematic review, because by design it does not represent all that is currently known about the role of the neighborhood environment in mental health outcomes of Black youth.

**Conclusion**

This present study engaged a systematic review to summarize the state of the research on the relationship between the neighborhood environment and mental health symptoms among Black youth. The findings of the systematic review highlighted the varied operationalization and measurement of neighborhood environment which points to the need to develop measurement practices that aid in reaching more consistent findings across the field on the influences of the neighborhood environment on Black youth mental health. This paper also identified critical gaps
in research on this relationship across intersectional identities of Black youth. Future research may benefit from research on Black youth with marginalized identities (e.g., Black youth with sexual and gender identities, disabilities, immigrant identities, and juvenile justice-involved youth).
REFERENCES: Paper 1

*Asterisks indicate studies that were included in the systematic review.


Bazargan, M., Calderón, J. L., Heslin, K. C., Mentes, C., Shaheen, M. A., Ahdout, J., & Baker,


In 33 states, Hispanic or black children are more than twice as likely to be in poverty than their white peers [Child Trends]. https://www.childtrends.org/blog/in-33-states-hispanic-or-black-children-are-more-than-twice-as-likely-to-be-in-poverty-than-their-white-peers


*Gonzalez, M., Jones, D. J., Kincaid, C. Y., & Cuellar, J. (2012). Neighborhood context and


Mair, C., Roux, A. V. D., & Galea, S. (2008). Are neighbourhood characteristics associated with?


*Sun, S., Crooks, N., DiClemente, R. J., & Sales, J. M. (2020). Perceived neighborhood violence


TESTING THE STRESS PROCESS MODEL: THE INFLUENCE OF PERCEIVED NEIGHBORHOOD ENVIRONMENT AND CONNECTEDNESS ON MENTAL HEALTH SYMPTOMS OF JUSTICE-INVOLVED BLACK YOUTH

Introduction

Juvenile justice involvement disproportionately affects minority youth, especially Black youth (Chung et al., 2007; Padgaonkar et al., 2021; Wilson et al., 2022). Although Black youth ages 12 to 17 make up 14% of adolescents in the United States, they are involved in 35% of juvenile justice cases and represent over 40% of incarcerated youth in the United States (Hockenberry & Puzzanchera, 2020; Sue & Sue, 2016; Washington et al., 2021; Wilson et al., 2022). Racial disparities found in the juvenile justice system are associated with the neighborhood environment, which often holds a historical legacy of concentrated socioeconomic disadvantage, racial segregation, discrimination, over-policing, and mistreatment that can intensify juvenile justice involvement and sentencing decisions for adjudicated delinquent Black youth (Craig et al., 2021; Desai et al., 2012; Lacey, 2013; Office of Juvenile Justice and Delinquency Prevention, 2022; Washington et al., 2021). Additional characteristics of the neighborhood environment, including high crime levels (Assink et al., 2015), community violence (Hoskins et al., 2021), living in an urban area (Farrington et al., 2012), and low levels of informal social control and cohesion (Farrington et al., 2012) are often identified as risk factors for juvenile justice involvement, however, the neighborhood environment remains overlooked when considering the mental health of Black youth involved with the juvenile justice system (Hoskins et al., 2021; Kubrin & Stewart, 2006). Further, supportive relationships that are formed within neighborhood environments (e.g., relationships with peers, school, community, and
family) can act as a buffer against mental health challenges and they have also been widely overlooked among justice-involved Black youth and require further investigation to elucidate approaches to supporting positive mental health (Zwecker et al., 2018).

**Mental Health of Juvenile Justice-Involved Youth**

Mental health challenges are a growing issue among youth generally (Centers for Disease Control and Prevention, 2020; Office of the Surgeon General (OSG), 2021) and they are pervasive among justice-involved youth. At various juvenile justice contact points, up to 70% of youth experience mental health problems (Office of Juvenile Justice and Delinquency Prevention, 2017; Schubert et al., 2011; Vincent et al., 2008; Walker et al., 2022). The impact of mental health challenges can intensify among justice-involved youth, with an estimated 40% - 60% of youth contending with mental health challenges without adequate resources for support and treatment (Altschuler & Brash, 2004; Fields & Abrams, 2010). A 2016 systematic review by Spinney and colleagues reported that 63% of studies that examined the decision to provide mental health services to youth in the juvenile justice system found racial disparities in the decision to refer youth to mental health services. This disparity was found in six out of nine juvenile justice decision points with Black youth being less likely than white youths to receive contact with a mental health clinician within 24 hours of detention center intake or to receive a referral to mental health services upon detention center discharge (Aalsma et al., 2014; Cohen et al., 2011; Spinney et al., 2016). The experience of mental health challenges, coupled with the limits on access to services can result in a downward spiral of long-term disadvantage and prolonged symptoms that may severely impact a young person’s ability to successfully engage in economic and social development, resulting in missed opportunities in employment and
education as well as poorer health and social outcomes into adulthood (Dragomir & Tadros, 2020; Gase et al., 2016; Malla et al., 2018; Teplin et al., 2021).

With disproportionate contact with the justice system (Padgaonkar et al., 2021), unmet mental health needs while navigating the justice system (Spinney et al., 2016), and disproportionate residence in disadvantaged neighborhood environments (Butler & Grabinsky, 2020), Black youth involved in the justice system are an incredibly vulnerable population to consider in efforts to improve youth mental health outcomes. Two important areas of investigation surrounding the mental health of Black youth involved in the juvenile justice system are as follows: 1) understand the experiences of these youth within their neighborhood environments and 2) understand the connections and relationships they form within their neighborhood environments (Office of the Surgeon General (OSG), 2021).

**Perceived Neighborhood Environment**

Black Americans are more likely than other racial groups to be “stuck in place” with up to 66% percent of Black Americans brought up and remaining in the poorest quarter of neighborhoods across generations (Butler & Grabinsky, 2020; Sharkey, 2013). Disadvantaged neighborhoods are often high in neighborhood physical and social disorder which can shape how individuals perceive their neighborhood environments and impact their mental health (Chang & Baskin-Sommers, 2020; Hull et al., 2008; Snedker & Herting, 2013). Perceived neighborhood environment (PNE) is defined by how residents of a neighborhood experience the environment in which they live, drawing directly from information from the individual resident (Hill & Maimon, 2013). Some experiences that make up the PNE include relationships with neighbors, personal victimization, and perceptions of neighborhood disorder (e.g., the presence of threatening conditions) (Hill & Maimon, 2013). A disadvantaged neighborhood marked by poor
neighborhood conditions and disorder presents a unique set of stressors for youth with a history of juvenile justice system involvement (Voisin et al., 2017). Disadvantaged neighborhoods are often described as being inundated with ambient risks (e.g., rundown housing, vandalism, litter, etc.) that exacerbate the prevalence of mental illness (Fowler et al., 2009; Nebbitt & Lombe, 2007). It is suggested that PNE influences adolescent mental health by shaping youth perceptions of the neighborhood as dangerous (Aneshensel & Sucoff, 1996; Fitzpatrick et al., 2005; Snedker & Herting, 2013). The stressors associated with disadvantaged neighborhoods are often accompanied by fewer available social resources (Voisin & Kim, 2018), which may influence youth’s ability to build positive relationships, resulting in greater mental health challenges across youth in these neighborhood environments (Animosa et al., 2018).

**Connectedness**

Connectedness, the degree to which individuals or groups are socially close, interrelated, cared for, and respected by others, has the potential to be a target of interventions designed to increase protective factors against the accumulation of mental health challenges over time (Foster et al., 2017; Whitlock, 2007). However, little is known about its utility in buffering mental health symptoms among justice-involved Black youth living in areas of perceived neighborhood disorder. Connectedness is rooted in previous theoretical work that documents the importance of healthy supportive relationships for well-being (Deitz et al., 2020; Eraslan-Capan, 2016; Foster et al., 2017; Lee & Robbins, 1998; Maton et al., 1998; Rose et al., 2019; Saeri et al., 2018; Townsend & McWhirter, 2005; Williams & Galliher, 2006). Connectedness has also been identified as an important protective factor against mental health problems among marginalized youth (Sapiro & Ward, 2020), with supportive relationships being found to be a protective factor of resilient youth involved in the juvenile justice system, generally (Craig et al., 2021).
Connectedness exists on several dimensions and consist of several types of relationships including family (Eraslan-Capan, 2016; Townsend & McWhirter, 2005), peers (Eraslan-Capan, 2016; Lee & Robbins, 1998; Williams & Galliher, 2006), school (Neumark-Sztainer et al., 1997; Townsend & McWhirter, 2005), and community (Maton et al., 1998; Townsend & McWhirter, 2005). These relationships are known to offer social, emotional, and educational resources that may promote mental health (Chung et al., 2007; Dawson et al., 2019; Hoskins et al., 2021). For example, positive relationships with family are known to have positive outcomes for behavioral health (Animosa et al., 2018). As youth move from childhood to adolescence, peers grow in importance for feelings of belonging (Animosa et al., 2018). In the absence of family and peer connectedness, school connectedness aids in prevention of involvement with risk behaviors (Animosa et al., 2018) and community connectedness, particularly in disordered neighborhoods, may serve as motivation for personal aspirations to “do better” (Animosa et al., 2018). However, more is yet to be known about the effectiveness of each of these different types of connectedness as a protective factor in protecting against mental health challenges among Black justice-involved youth.

**Theoretical Orientation**

The stress process model is a theoretical framework that can help explore the contribution of the PNE and connectedness in predicting mental health symptoms of justice-involved Black youth. The stress process model has been used in neighborhood research to explain the connection between low socioeconomic status and high levels of psychological distress among people living in socioeconomically disadvantaged areas (Aneshensel, 2009). In the stress process model, introduced originally by Pearlin and colleagues (1981), life events are theorized to induce feelings of stress that lead to mental health problems. In this theoretical framework, stress arises...
from both discrete and continuous problems (Pearlin et al., 1981). The model’s attention to the effects of systemic racism (e.g., contextual inequality faced by individuals living in areas with low access to psychosocial resources, stratification of neighborhoods that intensify exposure to stress) captures the disproportionate lived experience of Black youth (Aneshensel, 2009; The Annie E. Casey Foundation, 2012). Aneshensel’s (2009) discussion of the Stress Process Model explains that the perception of disorder within the neighborhood environment is a secondary stressor from the objective and primary stressor of low socioeconomic status (Aneshensel, 2009).

As a result of the stressors that come with low socioeconomic status, individuals respond by retreating socially and psychologically by avoiding certain areas and keeping to themselves, which likely decreases access to important supportive relationships and opportunities to build connectedness that can buffer mental health challenges (Aneshensel, 2009). In this model, exposure to stressors like perceived disorder in the neighborhood environment, alongside low socioeconomic status and fewer social resources to manage these stressors, may deteriorate mental health status (Elliott, 2000).

Current Study

Although PNE and connectedness have been explored in studies on mental health symptoms among Black youth living in disadvantaged areas, few studies have explored these constructs together within the context of understanding their combined explanatory power in predicting mental health symptoms of Black youth involved in the juvenile justice system. Therefore, this study addresses this gap in knowledge by using the Stress Process Model as a theoretical framework to explore the following questions among Black youth: (1) Does perception of the neighborhood environment explain more variance in mental health symptoms scores than the demographic variables? (2) Does the addition of four distinct types of
connectedness (peer, family, community, school) explain more variance in mental health symptoms scores above and beyond demographic variables and perceived neighborhood environment? And (3) Does the relation between perceived neighborhood environment and mental health symptoms vary across demographic variables?

Methods

Data

This study analyzed secondary data from the Pathways to Desistance Project, a large-scale, multisite, longitudinal study of desistance from crime among serious juvenile offenders from adolescence to young adulthood (Mulvey & Schubert, 2012). The study’s primary aim was to examine how developmental processes, social context, interventions, and sanctioning experiences affect stopping antisocial activities and crime (Mulvey & Schubert, 2012). An article by Schubert and colleagues (2004) provides a detailed discussion of the methodology (e.g., recruitment, interview schedule, measurement) for the Pathways to Desistance study. The publicly available dataset can be accessed through the Inter-university Consortium for Political and Social Research (ICPSR) (Mulvey, n.d.). Approval for use of this publicly available data was provided by the University of North Carolina at Chapel Hill Institutional Review Board.

Sample

The total sample for the Pathways to Desistance study consisted of 1,354 adjudicated youth between the ages of 14 and 17 years at the time of their index offense from the juvenile justice systems in Philadelphia County of Philadelphia, Pennsylvania, and Maricopa County of Phoenix, Arizona (Schubert et al., 2004). Eligible youth were selected for enrollment if court files in their locale determined they had been adjudicated delinquent or found guilty of a serious offense in juvenile court (Schubert et al., 2004). An accounting of study eligibility criteria can be
found in Schubert et al. (2004). Because drug law offenses by individuals who identify as male represented a significant proportion of the offenses committed by this age group, there was a cap in the study sample for males charged within the proportion of drug offenses at 15% (Schubert et al., 2004).

Given the focus on the impact of neighborhood environment on youth’s mental health, this study’s sample was restricted to youth living in their communities. To be included in this present study, youth had to meet the following additional eligibility criteria: 1) live in their community at the time of the interview and 2) identify racially as Black. The sample for this study included 180 participants recruited for the baseline wave of the Pathways to Desistance Project in the year 2000.

**Data Collection**

Data for this study draws from the baseline interviews in the parent study. Interviews were conducted at participants' homes, within participants’ neighborhoods, at residential treatment facilities, in prisons or at detention centers in two counties (e.g., Maricopa County or Philadelphia County) using laptop computers with interviewers sitting beside participants (Schubert et al., 2004). Details on data collection beyond the baseline wave can be found in Schubert and colleagues (2004) methodology paper. Study measures from the baseline interview that are used in this study are described below.

**Measures**

**Mental Health Symptoms.** The Brief Symptom Inventory (BSI) (Derogatis & Melisaratos, 1983) was used to measure mental health symptoms. A total score for the BSI involved generating the mean of the 9 subscales that comprise the measure. The BSI is a 53-item self-report inventory where respondents rate how much they have been bothered in the past week.
by various symptoms. A 5-point Likert scale was used with options ranging from “not at all” to “extremely” (Derogatis & Melisaratos, 1983). Higher scores indicated higher severity. The BSI’s nine subscales assessing individual symptom groups include: somatization (e.g., “Faintness or dizziness”), obsessive-compulsive (e.g., “Having to check and double-check what you do”), interpersonal sensitivity (e.g., “Feeling inferior to others”), depression (e.g., “Feeling no interest in things”), anxiety (e.g., “Feeling tense or keyed up”), hostility (e.g., “Having urges to break or smash things”), phobic anxiety (e.g., “Feeling uneasy in crowds, such as shopping or at a movie”), paranoid ideation (e.g., “Others not giving you proper credit for your achievements”), and psychoticism (e.g., “The idea that something is wrong with your mind”). The reliability of the BSI with the parent study’s sample is .95 (Derogatis & Melisaratos, 1983; Mulvey, n.d.).

**Perceived Neighborhood Environment.** Perceived neighborhood environment was captured using the Neighborhood Conditions Measure (NCM) (Mulvey, n.d.; Sampson & Raudenbush, 1999), which was adapted for the Pathways to Desistance study (Mulvey, n.d.). The NCM is a 21-item scale assessing the environment surrounding the participant’s home (Mulvey, n.d.; Sampson & Raudenbush, 1999). A 4-point Likert scale is used with options ranging from “never” to “often” with higher scores indicating greater perceived disorder within the respondent’s neighborhood (Mulvey, n.d.; Sampson & Raudenbush, 1999). Items from this self-report measure contained 12 questions about perceived physical disorder of the neighborhood (e.g., “cigarettes on the street or in the gutters,” “graffiti or tags”), as well as 9 questions about perceived social disorder (e.g., “adults fighting or arguing loudly,” “people using needles or syringes to take drugs”; (Mulvey, n.d.; Sampson & Raudenbush, 1999). The NCM was found to have excellent internal consistency among this sample in the parent study (alpha = .94) (Mulvey, n.d.).
Connectedness. The following measures were used to assess the four types of connectedness within school, peer, family, and community contexts.

School Connectedness. School connectedness was operationalized as the extent to which youth feel that they are valued and part of a school community, are close to people at their school, and that teachers treat students fairly (Foster et al., 2017; Resnick, 1997). This was captured through school attachment items (Cernkovich & Giordano, 1992) and covered two dimensions including Bonding to Teachers (e.g., “Most of my teachers treat me fairly”) and School Orientation (e.g., “Schoolwork is very important to me”) (Mulvey, n.d.). Ten items were rated on a 5-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree,” with higher scores indicating a greater degree of school connectedness (Mulvey, n.d.). The mean was taken for the items associated with each of two subscales. Bonding to teachers had three items (alpha = .65) and school orientation had seven items (alpha = .83 in the parent study sample) (Mulvey, n.d.). A total score for school connectedness involved generating the mean of the two subscale scores.

Peer Connectedness. Peer connectedness was operationalized as the perceived support, caring, and trust in an individual’s peer group (Bernaras et al., 2019; Foster et al., 2017). Peer connectedness was measured using items from the Friendship Quality scale, an adaptation of items included in the Quality of Relationships Inventory (Mulvey, n.d.; Pierce, 1994). This adapted scale measures interpersonal support from the youth’s five closest friends and contains 10 items on a 4-point Likert scale ranging from “not at all” to “very much” (Mulvey, n.d.). Examples of survey questions included “How much can you count on the people for help with a problem” and “How close do you think you will be to these people in ten years” (Mulvey, n.d.). The scale’s reliability with the parent study sample was .7’ (Mulvey, n.d.).
**Family Connectedness.** Family connectedness was operationalized as a youth’s perception of their closeness to their mother and/or father as well as perceived love, care, and value from parents (Foster et al., 2017; Resnick, 1997). Family connectedness was measured using an adapted version of the Quality of Parental Relationships Inventory to assess the parental-adolescent relationship (Conger et al., 1994; Mulvey, n.d.). Items from the measure captured parental warmth (e.g., “How often does your mother let you know she really cares about you?”) for both mother and/or father (Mulvey, n.d.). The scale contained 42 items, including 21 items to assess the maternal relationship and 21 items to assess the paternal relationship), and participants responded to questions on a 4-point Likert scale ranging from “Always” to “Never” (Mulvey, n.d.). Items aggregated into a composite score with higher scores on the warmth scale indicating a more supportive and nurturing parental relationship (Mulvey, n.d.). Reliability for maternal warmth and paternal warmth were .92 and .95, respectively, in the parent study sample (Mulvey, n.d.).

Maternal and paternal warmth were combined to create the family connectedness score. The mean of maternal and paternal warmth was computed when data for both parents were available, and when data for only one parent was known, family connectedness scores were constructed using the single parent score. When parent warmth was unknown for both parents, the family connectedness score was not computed.

**Community Connectedness.** Community connectedness was operationalized as the youth’s perception of being cared for by adults in their community as well as being able to count on their community for support (Bernat & Resnick, 2009; Foster et al., 2017; Nagin & Paternoster, 1994). Community connectedness was measured using the Social Capital Inventory (SCI) (Mulvey, n.d.; Nagin & Paternoster, 1994). The SCI is a 13-item scale consisting of two
subscales, including social integration (e.g., “How many of your teachers do your parents know by name?”), intergenerational closure (e.g., “How many of the parents of your friends know your parents?”) (Mulvey, n.d.; Nagin & Paternoster, 1994). Total community connectedness scores were calculated by generating the mean of all items in the subscales (Mulvey, n.d.). Higher scores indicated greater community connectedness (Mulvey, n.d.). The scale’s reliability with the parent study sample was .74 (Mulvey, n.d.).

**Covariates**

This analysis also included gender, age, and parent index of social position (ISP) as additional control variables. Gender was captured dichotomously as male or female. Age was captured in years, and parent ISP is a proxy for parent socioeconomic status, determined based on parent occupation and education (Mulvey, n.d.). Parent occupation was coded using a seven-point scale ranging from 1 to 7. Lower numbers on the scale indicated higher education and higher-wage professions and higher scores indicated lower educational attainment and lower-wage work as determined by Hollingshead’s index of social position (see Hollingshead, 1957). Occupation and education were captured for both the mother and the father, and then combined to create a parent ISP score. The mean of the mother and father occupation was taken when data for both parents were available. When occupation data for only one parent was known, parent ISP was computed using the single parent score. When both the occupation and education of the parent were unknown, the individual parent ISP score was not computed (Mulvey, n.d.).

**Analyses**

Data for this study was managed and analyzed using Stata v16 (Stata Statistical Software: Release 16, 2019). Descriptive statistics were computed to describe the study sample. A hierarchical regression (Keith, 2015) was used to explore whether specific independent
variables (i.e., PNE and four types of connectedness) increased the explanatory power of the model in terms of their ability to predict mental health symptoms (Keith, 2015). In the hierarchical regression, each independent variable or block group of variables were added to the model in sequential steps to determine if the additional variable(s) significantly improved the explanatory power of the model (Keith, 2015). Specifically, the hierarchical regression analysis included four steps. The first step included variables related to demographic information: gender, age, and parent ISP. The second step added PNE. The third step added the four types of connectedness including peer, family, school, and community. The fourth and final step added a two-way interaction between PNE and parent ISP by gender. Parent ISP was examined in the interaction alongside PNE based on the stress process model’s theoretical relationship between socioeconomic status and PNE. Gender was examined in this step due to documented gender differences in mental health problems (Belknap & Holsinger, 2006). After the inclusion of each step to the model, an F test was conducted to test for significance in the change in $R^2$ with the addition of each block in the hierarchical regression. The focal point of the hierarchical regression included examining the effect size ($R^2$) at each step of the model, the change in $R^2$ with the addition of independent variables in each step of the model, as well as the regression coefficients that were interpreted individually for their statistical significance (Frey, 2018; Keith, 2015).

Statistical power was examined a priori, using G*Power (version 3.1) to ensure an adequate sample size for the proposed analyses (Faul et al., 2009). Based on the total number of independent variables (8), expected effect size (.15), p-value (.05), and the statistical analysis selected (Linear Multiple Regression: Fixed model, $R^2$ increase), this study ($N = 180$) is adequately powered at .8 with an N of 109 and a moderate effect size (Osteen & Bright, 2010).
Additionally, assumptions of best linear unbiased estimates (B.L.U.E.) were explored to ensure the results and conclusions of the analyses were valid (Osborne & Waters, 2002). Testing to ensure errors were homoscedastic indicated that there was a problem with heteroskedasticity in the data ($X^2 (1) = 14.60, p = 0.0001$). To address this, the log of the outcome variable, mental health symptoms, was taken to make the distribution of the data normal and meet the assumption of homoscedasticity ($X^2 (1) = 2.28, p = 0.1311$). Scatter plots were used to explore the assumption of linearity between the dependent variable and each independent variable and to explore the assumption that errors are uncorrelated with the independent variables. A histogram was also used to explore the assumption that the expected value of error was 0. Finally, to explore the presence of multi-collinearity in the data, variance inflation factor (VIF) was tested and found to be in the acceptable range (VIF = 1.19) (Allison, 1999).

Results

Table 2.1 presents descriptive statistics for all study variables and Table 2.2 provides each of the four steps of the hierarchical regression as well as the reported $R^2$, $F$ change in $R^2$ ($\Delta R^2$) and its significance. In total, 77.8% of the sample identified as male and 22.2% identified as female. The age of the sample ranged from 14-18 years old, with a mean age of 15.91. About 76% of the youth in the sample reported living in single-parent homes, while 7.8% reported living with both parents, and 16% reported they did not live with either parent. The parent ISP ranged from 22 – 77 ($M = 49.06, SD = 11.47$).

Hierarchical Regression

Table 2.2 provides the results of the hierarchical regression. The first step in the hierarchical regression included demographic variables and parent ISP. Gender was found to have a negative and statistically significant relationship with mental health symptoms, meaning
Black youth who identified as male reported statistically significant lower mental health symptoms than female-identified Black youth ($\beta = -.23, p < .01$). Results from the first step of the regression indicated that gender, age, and parent ISP explained a statistically significant proportion of variance in mental health scores $R^2 = .07, F(3, 144) = 3.49, p < .01$.

In the second step in the hierarchical regression, PNE was included as an independent variable. Results from the regression indicated that PNE did not explain a significant proportion of variance in mental health symptom scores $R^2 = .07, F(4, 144) = 2.76, p = .03$. Results from the $F$ test indicated there was not a statistically significant change from step 1 to step 2 with the addition of PNE $\Delta R^2 = .004, F$ for $\Delta R^2(1, 143) = 0.57, p = .45$.

Then, the third step of the hierarchical regression included the four independent variables related to connectedness (peer, family, school, and community connectedness). Results indicated that the inclusion of connectedness variables increased the proportion of variance explained by the model examining mental health scores $R^2 = .14, F(8, 139) = 2.79, p < .01$. The $R^2$ doubled with the addition of the connectedness variables in step 3, and the change in $R^2$ from step 2 to step 3 was statistically significant $\Delta R^2 = .067, F$ for $\Delta R^2(4, 139) = 2.70, p < .03$.

In the final step of the hierarchical regression, a two-way interaction term for PNE and parent ISP by gender was included. This term showed that that the relationships between parent ISP and PNE was negative and significant among female-identified youth ($\beta = -.36, p < .05$), and was negative but not significant among male-identified youth ($\beta = -.43, p = .13$). Results from the regression indicated that the inclusion of the two-way interaction explained a significant proportion of variance in mental health symptom scores $R^2 = .16, F(10, 137) = 2.65, p = .01$. However, the $F$ test indicated that the change in $R^2$ from step 3 to step 4 was not statistically significant $\Delta R^2 = .023, F$ for $\Delta R^2(2, 137) = 1.93, p = .15$. 
Discussion

This study found that the addition of the four connectedness types significantly contributed to an increase in the proportion of variance explaining mental health symptom scores above and beyond demographic variables and PNE. However, PNE did not significantly increase the model’s explanatory power above and beyond demographic variables. This study also revealed that among justice-involved Black youth living in their communities, male-identified youth reported lower mental health symptom scores than female-identified youth at every step of the model. This is consistent with previous research that supports justice-involved girls are more likely to report experiencing mental health problems than justice-involved boys (Belknap & Holsinger, 2006; Walker et al., 2015).

Findings that the inclusion of connectedness variables both doubled the $R^2$ and explained a statistically significant proportion of variance in mental health scores above and beyond PNE and demographic variables are important to examine alongside the theoretical framework guiding this model. In the stress process model, Aneshensel (2009) explains that exposure to stressors from the neighborhood environment may result in socially and psychologically retreating from supportive social connections that can buffer mental health challenges. Justice-involved youth are faced with compounding stressors from the experience of system involvement. For Black youth, who are disproportionately involved in the juvenile justice system and disproportionately living in poorer neighborhoods, the stressors that come with their neighborhood environment may override the potential positive effects of healthy and supportive relationships. The magnitude of the change in $R^2$ with the inclusion of the four connectedness types in step 3 indicates the importance of these variables in the presence of these stressors on mental health.
Furthermore, the interaction between parent ISP and PNE was significant for female identifying youth but not for male identifying youth, indicating that the relationship between parent ISP and PNE in predicting mental health symptoms was stronger among female-identified youth than for male-identified youth. This is consistent with previous literature that has found the relationship between perceived neighborhood violence and PTSD to be stronger in females than males (Butcher et al., 2015). This study contributes to growing knowledge that suggests there may be a notable influence, particularly in the intersection of PNE and socioeconomic factors (parent income and education level) that contribute to the mental health functioning of female-identified justice-involved youth (Butcher et al., 2015; Sun et al., 2020). Black girls have been overrepresented in the justice system in recent years (accounting for 35% of all justice-involved girls though they comprise only 14% of the national population of American girls) (Quinn et al., 2021). Considering the double jeopardy of marginalized identities (e.g., Black and female), this study presents an opportunity for researchers to further investigate the interacting role of parent social position and the PNE in understanding mental health symptom severity among this vulnerable population of youth.

**Implications of Research and Practice**

In this study, the inclusion of four types of connectedness in the model explained a significant proportion of variance in predicting mental health symptoms of juvenile justice-involved Black youth, which is consistent with prior research highlighting that connectedness is a protective factor of mental health symptoms (Craig et al., 2021; Foster et al., 2017). As such, it is incumbent upon researchers and practitioners to investigate ways to bolster connectedness or build an understanding of how connectedness has the potential to serve as a protective mechanism in addressing the mental health symptoms of justice-involved Black youth living in
their neighborhoods. Growing research on responsivity indicates that adverse childhood experiences (ACEs), specifically those linked to maltreatment and exposure to household challenges, are linked to a number of juvenile justice outcomes, including mental health outcomes (Logan-Greene et al., 2017; Wilson et al., 2020). Investigating social relationships alongside ACEs may assist in understanding how previous adverse experiences with important social influences may inhibit the utility of connectedness among justice-involved youth. Future research and practice should consider what strengthens or hinders connectedness within this population.

Despite findings that PNE did not explain a statistically significant proportion of variance in mental health scores, findings from this study indicate that the relationship between parent ISP and PNE was significant among female-identified youth in this study. Future research should explore approaches to addressing the mental health needs of female-identified Black youth involved in the juvenile justice system by exploring how the interaction of PNE and parent social position is particularly impactful for this population. Additionally, an assessment of risk profiles related to mental health symptoms and the PNE may also be useful in elucidating which groups of youth can benefit most from the development of evidence-based programs that support mental health among justice-involved Black youth living in neighborhoods inundated with disorder (Howell et al., 2014; Lipsey et al., 2010; Wilson et al., 2022).

Limitations

This study is limited by a number of factors. First, it is important to note that the analysis was cross-sectional. Therefore, causal relationships between the variables cannot be established. While the cross-sectional nature of this data was sufficient for the study of the added contribution of PNE and connectedness in a model explaining the presence of mental health
symptoms, this data cannot account for fluctuations in how youth perceive their neighborhood environments, the feelings of connectedness they experience, and the severity of mental health symptoms over time. Secondly, the data used for this study was collected in 2000. Despite the age of the data, this study remains valuable as it explores relationships between variables that transcend time. Finally, although this study was adequately powered, the sample size is still relatively small and only captures data from only two counties in the U.S. Therefore, further research is needed before definitive conclusions can be drawn.

Conclusion

This present study used hierarchical regression to test theoretical assumptions of the stress process model among Black youth involved in the juvenile justice system. Black youth involved in the justice system are an incredibly vulnerable population to consider in efforts to improve youth mental health outcomes. By examining the influence of important variables from the stress process model in a sequential way, this analysis draws out important considerations for future intervention research that may effectively address mental health concerns of this vulnerable population.
REFERENCES: Paper 2


THE RELATIONSHIP BETWEEN CONNECTEDNESS AND MENTAL HEALTH SYMPTOMS AMONG BLACK JUVENTILE JUSTICE-INVOLVED YOUTH: A RANDOM-INTERCEPT CROSS-LAGGED PANEL MODEL

Introduction

Juvenile justice involvement disproportionately affects Black youth (Chung et al., 2007; Dragomir & Tadros, 2020; Padgaonkar et al., 2021; Washington et al., 2021). Despite making up 14% of adolescents in the United States, Black youth are involved in 35% of juvenile justice cases and represent over 40% of incarcerated youth in the United States (Hockenberry & Puzzanchera, 2020; Padgaonkar et al., 2021; Sue & Sue, 2016; Washington et al., 2021). Among juvenile justice-involved youth, up to 70% are reported to experience mental health problems at various juvenile justice contact points (Vincent et al., 2008; Walker et al., 2022). An estimated 40% - 60% of these youth contend with mental health challenges without adequate resources for support and treatment (Altschuler & Brash, 2004; Fields & Abrams, 2010; Schubert et al., 2011; Vincent et al., 2008; Walker et al., 2022). This situation of high need and low resources is especially concerning now as mental health difficulties among youth continue to grow worse in the United States (Bernaras et al., 2019; Bitsko et al., 2018; Griffin et al., 2018; Keyes et al., 2019). This is especially the case among Black youth; studies have documented that Black youth experience alarming and increasing in rates of suicide attempts (Lindsey & Xiao, 2019; SAMHSA, 2020) and their rates of major depressive episodes have increased from 9 percent to 10.3 percent in three years (i.e., 2015 to 2018) (Mental Health America, n.d.). Connectedness, the degree to which individuals or groups are socially close, interrelated, cared for, and respected by others, has been identified as a protective factor against mental health symptoms (Foster et al., 2007).
There is evidence that among Black youth in the United States, low connectedness is linked to mental health symptoms (e.g., suicidality and depressive symptoms) which makes understanding factors that facilitate connectedness a particularly important area of inquiry among this understudies group (Rose et al., 2019; National Advisory Mental Health Council Workgroup on Child and Adolescent Mental Health Intervention Development and Deployment, 2001). Preliminary research suggests that connectedness may buffer against negative mental health outcomes such as depressive symptoms, suicidal ideation, anxiety, and conduct problems among Black youth generally (Rose et al., 2019). But much is yet to be learned about the relationship between connectedness and mental health symptoms among Black youth involved in the juvenile justice system, especially given disruptions to connectedness that justice system involvement can create (Abram et al., 2004; Pennell et al., 2011; Sapiro & Ward, 2020). In response to the growing focus on the utility of connectedness across marginalized groups in mental health interventions (Sapiro & Ward, 2020) as well as the growing concern around Black youth mental health (Bernaras et al., 2019; Bitsko et al., 2018; Griffin et al., 2018; Keyes et al., 2019), this current study seeks to gain a greater understanding of how the relationship between connectedness and mental health symptoms unfold over time among juvenile justice-involved Black youth.

**Mental Health of Juvenile Justice-Involved Youth**

Youth who report juvenile justice system involvement versus no involvement are 2.3 times as likely to report mental health problems (Voisin et al., 2017). Some of the most common mental health problems among juvenile justice-involved youth include disruptive behavior, mood disorders, and anxiety disorders, with 79% of youth with one mental health
disorder also meeting criteria for one more (Butcher et al., 2015). Additionally, Black juvenile justice-involved youth experience an enduring challenge of systemic racism as they navigate meeting their mental health needs (Aalsma et al., 2014; Keys, 2008). For example, Black youth who come in contact with the juvenile justice system are less likely than White youth to receive contact with a mental health clinician within 24 hours of detention center intake or to receive a referral to mental health services upon detention center discharge (Aalsma et al., 2014; Keys, 2008). When mental health challenges are left unaddressed, Black youth face higher risks of future incarceration and premature death by suicide which is already alarming among Black youth generally and is higher among juvenile justice-involved youth than the general population (Keys, 2008; Stokes et al., 2015). High rates of mental health challenges for justice-involved youth alongside disparities in access to mental health services for justice-involved Black youth, can result in a downward spiral of long-term disadvantage and prolonged mental health challenges (Chung et al., 2007). Few studies, however, have examined how mental health challenges persist of over time among justice-involved Black youth. This area of inquiry is particularly important as prolonged and persistent mental health challenges may severely impact a young person’s ability to successfully develop positive relationships that buffer against future delinquency, as well as vocational and educational success (Chung et al., 2007).

**Connectedness**

Connectedness, the degree to which individuals or groups are socially close, interrelated, cared for, and respected by others (Foster et al., 2017; Whitlock, 2007), is further characterized by an internal sense of belonging and a perceived closeness with others and the social world (Eraslan-Capan, 2016; Lee & Robbins, 1995, 1998). A youth’s sense of connectedness has several dimensions that revolve around important relationships including those with family,
friends, and community, and has been identified as having an important role in shaping mental health (Deitz et al., 2020; Eraslan-Capan, 2016; Lee & Robbins, 1998; Maton et al., 1998; Saeri et al., 2018; Townsend & McWhirter, 2005; Williams & Galliher, 2006). Individuals who report low connectedness may be more prone to mental health symptoms related to psychological distress, anxiety, depression, and may struggling in successfully managing their needs and feelings (Eraslan-Capan, 2016; Hall-Lande et al., 2007; Lee & Robbins, 1998).

The Relationship Between Mental Health Symptoms and Connectedness

Although studies suggest that connectedness is a key mechanism for promoting positive mental health, there are mixed findings available in understanding the way these two constructs interact with each other and over time and whether their relationship is reciprocal. For example, a cross-national study among older European adults found a reciprocal association between mental health symptoms and connectedness and that the effect of mental health symptoms on connectedness was greater than the corresponding effect of connectedness on mental health (Schwartz & Litwin, 2019). Conversely, a study among adults in New Zealand found that connectedness was a stronger and more consistent predictor of mental illness over time than mental illness was of connectedness (Saeri et al., 2018). Among youth, a study on the transition from primary school to secondary school in Australia found reciprocal relationships between school connectedness and mental health symptoms over time with increased school connectedness being associated with decreased mental health symptoms and increased mental health symptoms being associated with decreased school connectedness (Lester et al., 2013).

While much of the research on the relationship between connectedness and mental health has been conducted outside of the United States, emerging research among Black juvenile justice-involved girls suggests that inclusion of peers and caregivers in the treatment of mental health
symptoms associated with PTSD may have utility on positive outcomes (Quinn et al., 2021). However, temporal ordering of the relationship between connectedness and mental health symptoms among this population are yet to be explored (Quinn et al., 2021).

**Theoretical Orientation**

Kiely and colleagues (2021) suggest that examining mental health symptoms and connectedness and their relationship with one another may be important. They posit that mental health symptoms may present as a barrier to participating in social interactions which can build feelings of connectedness that improves mental health symptoms (Kiely et al., 2021). In the stress process model, which was described in the Introduction chapter, social support, or what we have referenced here as connectedness, may serve as a moderator or mediator between stressors and mental health symptoms (Aneshensel, 2009). The stress process model posits that individuals may reduce social contacts when faced with stressors. This could inhibit the development of connectedness that can support positive mental health (Aneshensel, 2009; Offer, 2012). The stress process model does not, however, account for the possibility of a reciprocal relationship between connectedness and mental health. An emerging theory that can help us understand how these two constructs are related is the Theory of Youth Mental Health (Kelly & Coughlan, 2019). In this theory connectedness is a facilitator of positive mental health across several domains (Kelly & Coughlan, 2019). The theoretical model of youth mental health proposes that connectedness is critical in the process of achieving positive youth mental health because of the significant social relationships that are developed in this stage of life (Kelly & Coughlan, 2018).

**Purpose**
This study utilizes a random intercept cross-lagged model (RI-CLPM) (Hamaker et al., 2015) to examine the nature of relationship between mental health symptoms and connectedness among justice-involved Black youth. This model will capture the stability of difference between and within individuals in the longitudinal and bidirectional relationships between mental health symptoms and connectedness among a sample of Black juvenile justice-involved youth (Usami, 2021) (see Figure 1). This study asks, (1) is there reciprocal within-unit association between connectedness and mental health symptoms among Black, juvenile justice-involved youth over time? and (2) does one construct (connectedness or mental health symptoms) predict the other? Given the gap in longitudinal research on justice-involved youth mental health and connectedness, this study also explores if (3) significant within-unit relationships between each set of neighboring waves of mental health symptoms and each set of neighboring waves of connectedness persist over time.

**Methods**

**Design**

This study engaged a secondary retrospective longitudinal cohort analysis of data from the Pathways to Desistance Project, a multisite study of serious juvenile offenders from adolescence to young adulthood that took place from 2000 to 2010 (Mulvey & Schubert, 2012). The study’s primary aim was to examine how developmental processes, social context, and justice system interventions and sanctions affect the process of stopping antisocial activities and crime (Mulvey & Schubert, 2012). An article by Schubert and colleagues (2004) provides a detailed discussion of the methodology (e.g., recruitment, interview schedule, measurement) for the Pathways to Desistance study. The publicly available dataset can be accessed through the Inter-university Consortium for Political and Social Research (ICPSR) (Mulvey, n.d.). Approval
for the research conducted here was provided by the University of North Carolina at Chapel Hill Institutional Review Board.

**Sample**

The total sample for the original Pathways to Desistance study consisted of 1,354 adjudicated youth between the ages of 14 and 17 years at the time of their index offense from the juvenile justice systems in Philadelphia County of Philadelphia, Pennsylvania, and Maricopa County of Phoenix, Arizona from November 2000-2010 (Schubert et al., 2004). Eligible youth in the parent study were selected for enrollment if court files in their locale determined they had been adjudicated delinquent or found guilty of a serious offense (Schubert et al., 2004). An accounting of study eligibility criteria can be found in Schubert et al., 2004. Because drug law offenses by individuals who identify as male represented a significant proportion of the offenses committed by this age group, there was a cap in the original study sample for males charged with in the proportion of drug offenses at 15% (Schubert et al., 2004).

Since the focus of the current study is on juvenile justice-involved Black youth, the present study’s inclusion criteria included participants who identified racially as Black. Additional inclusion criterion applied to the sample in the present study was that participants had to be living in their communities at the baseline wave. Therefore, the total sample for the present study is 180.

**Data Collection**

Data for the Pathways to Desistance study were collected across 10 waves: once at baseline, every 6 months until year three, and every year after that for 7 years (Mulvey, n.d.). Interviews were self-administered using laptop computers with trained interviewers sitting side by side with the participant and the screen visible to both (Schubert et al., 2004). Details on data
collection can be found in Schubert and colleagues (2004) methodology paper. Data for this study draws from five waves of data from the parent study. The waves are denoted in Figure 3.1 with the baseline wave being represented by a 0 subscript, wave 2 (one year later) by a subscript of 2, wave 4 (one year after wave 2) by a subscript of 4, wave 6 (one year after wave 4) by a subscript of 6, and wave 7 (one year after wave 6) by a subscript of 7. Measures that are used in this study are described below.

Measures

Mental Health Symptoms

The Brief Symptom Inventory (BSI) (Derogatis & Melisaratos, 1983) is used to measure mental health symptoms. A total score for the BSI involves generating the mean of all 9 subscale scores. The BSI is a 53-item self-report inventory where respondents rate how much they have been bothered in the past week by various symptoms. BSI scores ranged from 0 to 3 with higher scores indicating higher severity (Derogatis & Melisaratos, 1983). The BSI has nine subscales assessing individual symptom groups including: somatization (e.g., "Faintness or dizziness"), obsessive-compulsive (e.g., "Having to check and double-check what you do"), interpersonal sensitivity (e.g., "Feeling inferior to others"), depression (e.g., "Feeling no interest in things"), anxiety (e.g., "Feeling tense or keyed up"), hostility (HOS, e.g., "Having urges to break or smash things"), phobic anxiety (e.g., "Feeling uneasy in crowds, such as shopping or at a movie"), paranoid ideation (e.g., "Others not giving you proper credit for your achievements"), and psychoticism (e.g., "The idea that something is wrong with your mind"). The reliability of the BSI with this sample is .95 (Derogatis & Melisaratos, 1983; Mulvey, n.d.).

Connectedness
Connectedness is operationalized in many ways but can be described as the degree to which individuals or groups are socially close, interrelated, cared for, and respected by others (Foster et al., 2017; Whitlock, 2007). The connectedness variable in this study was determined by creating a composite score of three types of connectedness that are particularly important among juvenile justice-involved youth in late mid to late adolescence and emerging adulthood. These included: peer connectedness, family connectedness, and community connectedness. Although school is an important form of connectedness among youth, school connectedness might change over time, especially during the transition from adolescence and adulthood (Chung et al., 2007; Uggen & Wakefield, 2005). Furthermore, as a consequence of the school-to-prison pipeline, a persistent trend that funnels youth out of schools and into the juvenile justice system, Black youth are often pushed out of school (ACLU, 2016; Garcia et al., 2022). This results in limitations to understanding the utility of school connectedness within the construct of connectedness among juvenile justice-involved youth. Therefore, school connectedness is not included in this study.

**Composite Score.** The composite variable for connectedness (CON) across the three domains (e.g., peer connectedness, family connectedness, and community connectedness) was created by summing \( z \) scores of the values from the original variables: \( CON = z_1 + z_2 + z_3 + z_4 \) where \( z \) is the value subtracted by the mean divided by the standard deviation \( (z = x-\bar{x}/SD) \) (Song et al., 2013). Z-scores in this study ranged from −7 to 6 with higher scores indicating higher connectedness. The measures that make up the composite score are described below.

**Peer Connectedness.** Peer connectedness was measured using items from the Friendship Quality scale which is an adaptation of items included in the Quality of Relationships Inventory (Mulvey, n.d.; Pierce, 1994). This adapted scale measures interpersonal support from the youth's
five closest friends and contains 10 items on a 4-point Likert scale ranging from "not at all" to "very much" (Mulvey, n.d.). Examples of survey questions included "How much can you count on the people for help with a problem" and "How close do you think you will be to these people in ten years" (Mulvey, n.d.). Reliability for the scale with this sample was .74 (Mulvey, n.d.).

**Family Connectedness.** Family connectedness was measured using an adapted version of the Quality of Parental Relationships Inventory to assess the parental-adolescent relationship (Conger et al., 1994; Mulvey, n.d.). Items from the measure captured parental warmth (e.g., "How often does your mother let you know she really cares about you?") for both mother and/or father (Mulvey, n.d.). The scale contained 42 items including 21 items to assess the maternal relationship and 21 items to assess the paternal relationship), and participants responded to questions on a 4-point Likert scale ranging from "Always" to "Never" (Mulvey, n.d.). Reliability for maternal warmth and paternal warmth were .92 and .95 respectively (Mulvey, n.d.).

**Community Connectedness.** Community connectedness was measured using the Social Capital Inventory (SCI) (Mulvey, n.d.; Nagin & Paternoster, 1994). The SCI is a 13-item scale consisting of two subscales including social integration (e.g., “How many of your teachers do your parents know by name?”), intergenerational closure (e.g., “How many of the parents of your friends know your parents?”; (Mulvey, n.d.; Nagin & Paternoster, 1994). Total community connectedness scores were calculated by generating the mean of all items in the subscales (Mulvey, n.d.). Reliability for the scale with this sample was .74 (Mulvey, n.d.).

**Covariates**

Covariates in this analysis were chosen to investigate whether the observed effects hold above and beyond the influence of potential confounders (Mund et al., 2021) These included
gender and age. Gender was captured dichotomously (male = 1 and female = 0) and age was captured in years.

Analyses

Univariate statistics including mean, standard deviations and ranges of study variables were computed to describe the study sample. A random intercept cross-lagged panel model (RI-CLPM) (Hamaker et al., 2015; Mulder & Hamaker, 2021) was used to estimate both the longitudinal (i.e., paths A1-A4 and B1-B4 in Figure 3.1) and bidirectional (i.e., paths C1-C8 in Figure 3.1) influences of mental health symptoms construct on connectedness and vice versa over time by separating within-person effects from between person stability in mental health symptoms and connectedness (Hamaker et al., 2015; Mulder & Hamaker, 2021). The traditional cross-lagged panel model (CLPM) focuses on how fluctuations in sample-levels of one variable are associated with fluctuations in sample-levels of another variable. RI-CLPM is a useful approach for this analysis because it focuses on the within-person process by accounting for individual-level fluctuations in variables and models cross-lagged and carry-over (autoregressive) effects based on deviations from the individual’s mean level (Mulder & Hamaker, 2021; Usami, 2021).

Four parts are needed to specify the RI-CLPM (e.g., between, within, lagged regressions, and relevant covariances) (Mulder & Hamaker, 2021). First, the between part consists of the random intercepts and sample-means. The factor loading for the between part was fixed to one. Second, the within part (denoted by \(w\) in Figure 3.1) consists of within-unit fluctuations which accounting for individual-level fluctuations in variables (Mulder & Hamaker, 2021). The measurement error variances were constrained to zero, which means there is no measurement error (Mulder & Hamaker, 2021). Third, the lagged regressions test the within-unit components.
Finally, relevant covariances at the baseline wave and their residuals at waves 2, 4, 6 and 7 are correlated in the within part (See Figure 3.1).

 Autoregressive paths were specified between each set of neighboring waves of mental health symptoms ($wMH$) and each set of neighboring waves of connectedness ($wCON$) to examine carry-over effects (Mulder & Hamaker, 2021). Time-specific associations between constructs (i.e., D1–D4 in Figure 3.1) and the stability of each construct were controlled for over time (Serbin et al., 2015). Within-unit cross-lagged paths from mental health symptoms to connectedness and connectedness to mental health symptoms was regressed onto each of the previous waves. Covariates (e.g., gender and age) were also controlled for in the model. NOCOV was used to set the covariances to zero (Mulder & Hamaker, 2021; Usami, 2021).

 Full information maximum likelihood (FIML) was used to address missing data. Within the context of structural equation modeling (SEM), FIML is the most popular and widely used method for addressing missing data (Lee & Shi, 2021). The FIML approach addresses missing data by computing the likelihood function for each observation using the variables with observed values for that case (Montshiwa et al., 2018). The estimator used for this analysis was maximum likelihood estimation with robust standard errors (MLR). MLR provides standard errors and a chi-square statistic that is robust to nonnormality (Muthén & Muthén, 2017; Suh, 2015).

 The criteria for model fit included RMSEA < .06; SRMR < .08; and Chi-square ($X^2$) > .05 (Boomsma, 2000; Kline, 2005). CFI and TLI were excluded as model fit indices based on recommendations from Lee and Shi (2021) who caution against relying on these fit indexes when using FIML. Data management and analyses were conducted using Stata version 16 and Mplus version 8.4 (Muthén & Muthén, 2017; Stata Statistical Software: Release 16, 2019).

**Results**
Descriptive Statistics

Univariate descriptive statistics of all variables and prevalence of mental health symptoms and connectedness across waves are shown in Table 3.1. Most of the sample (77.8%) were male and 76.1% of study participants came from single parent homes. Ages ranged from 14 to 18 at the baseline wave ($M = 15.91, SD = 1.18$) and from 18 to 22 at wave 7 ($M = 19.97, SD = 1.16$).

Results of the Random Intercept Cross-Lagged Panel Model (RI-CLPM)

The RI-CLPM demonstrated a good fit for the RMSEA and SRMR indices but not the $X^2$ model fit indices ($\chi^2 = 101.928 df = 56, p = 0.002; \text{RMSEA} = 0.068 90\% \text{CI} [0.046, 0.084]; \text{SRMR} = 0.068$). Figure 3.2 displays the results of the RI-CLPM. A total of 180 observations were included in the final model. Focusing on the within-unit cross-lagged paths between two key variables, the coefficients from mental health symptoms to connectedness were not significant at any wave. Although regression coefficients from connectedness to mental health symptoms at waves 2, 4, and 6 were negative (indicating decreases in mental health symptoms as connectedness increased), the regression coefficient for connectedness at wave 4 ($wCON_4$) to mental health symptoms at wave 6 ($wMH_6$) was the only significant path on mental health symptoms ($\beta = -.323, p < .05$).

The carry-over effects (autoregressive paths) indicated that the path from mental health symptoms at baseline ($wMH_0$) to mental health symptoms at wave 2 ($wMH_2$) was positive and significant ($\beta = .266, p < .01; \beta = .209$), indicating a worsening or increase of mental health symptoms from baseline to wave 2, but no statistically significant change after that. All other carry-over effects for mental health symptoms at each wave were not significant. All carry-over effects...
paths for connectedness at each wave were not significant, indicating no detectable change over time.

**Discussion**

This study explored the longitudinal relationships between and across mental health symptoms and connectedness among a sample of Black juvenile justice-involved youth. By utilizing the RI-CLPM, the within-person and between-person effects were disaggregated to elucidate the directionality of the association between mental health symptoms and connectedness over time. This study explored if significant within-unit relationships between each set of neighboring waves of mental health symptoms and each set of neighboring waves of connectedness persist over time. Therefore, carry-over effects were examined to understand the longitudinal relationship of the variables from wave to wave.

The cross-lagged paths in this study showed that among this sample of Black juvenile justice-involved youth, increased connectedness at wave 4 predicted decreases in mental health symptoms one year later at wave 6. Notably, waves 4 and wave 6 included transition aged youth (TAY) (ages 16-21; \( M = 17.9 \) and 18.9 respectively at each wave). TAY refers to young people aged 16-25 that often struggle with mental health challenges and who transition from child-serving systems to adult serving systems (MVP Health Care, Inc., 2020; Zajac et al., 2015). This population of young people undergo a unique developmental period and are presented with challenges related to building stable relationships (Zajac et al., 2015). The transition from adolescence to adulthood is also a critical age in which mental health disorders have their onset and when mental health service use tends to decline (Zajac et al., 2015). This cross-lagged relationship suggests that greater feelings of connectedness a youth reports at age 18, the better their mental health symptoms are at age 19. Among the Black juvenile-involved youth in this
sample, connectedness offers important support (e.g., emotional support, tangible help, advice) for addressing mental health symptoms during the transition to adulthood. This finding is critical given that this is an age where young people may experience a loss of structure and access to services (Chung et al., 2007).

The cross-lagged paths were not significant in any direction for any of the other waves. This may be due to a combination of the disruptions to connectedness that juvenile justice system involvement can create (Abram et al., 2004; Pennell et al., 2011; Sapiro & Ward, 2020) and the pattern of unaddressed mental health challenges faced by Black youth who are involved in the juvenile justice system (Aalsma et al., 2014; Keys, 2008).

This study also explored carry-over effects across mental health symptoms and connectedness among this sample of Black juvenile justice-involved youth. First, mental health symptoms increased from baseline to wave 2 (one year later). This finding may suggest the potential for a negative impact of justice-involvement on youth that requires further examination. Although no other carry-over effects were significant over time across mental health symptoms, it is important to note the negative coefficient from mental health symptoms at wave 6 to mental health symptoms at wave 7. Although this path is not significant, the direction of mental health symptoms changes after the significant cross-lagged path from connectedness at wave 4 to mental health symptoms at wave 6. This finding offers an invitation to learn more about how the cross-lagged relationship from connectedness at wave 4 to mental health symptoms at wave 6 may disrupt an either steady or worsening trend of mental health symptoms over time.

Second, carry-over effects across connectedness were unchanged over time. These results on connectedness may be understood once more within the context of the transition to adulthood. Munson and Lox (2012) found that among former system-involved youth with mental health
needs, connections to supportive others was an important theme, but relationships with others often change (e.g., with family and peers) and new relationships emerge (e.g., romantic relationships) during the transition to adulthood (Sakala et al., 2020). Although this study explored peer, family, and community connectedness, it did not explore other potentially meaningful relationships that may emerge during the transition to adulthood. Additionally, transition aged youth involved in the juvenile justice system may not have a network of people providing support and encouragement to successfully move toward adulthood nor the skills to assist with tending to their mental health needs (Brisson et al., 2022). These findings suggest that there were no significant positive or negative changes related to connectedness with peers, family, and community.

This study supports the need to explore the utility of connectedness in addressing mental health symptoms of juvenile justice-involved Black youth during an important transitional time in life. Furthermore, this study is one of the first to explore the relationship between connectedness and mental health over time among Black juvenile justice-involved youth. The relationship between connectedness and mental health symptoms in this study’s findings aligns with research from Lester and colleagues (2013) which discusses the importance of intervening during transitional periods to improve mental health and connectedness outcomes. The development of supportive and trusting relationships with family, peers, and community, among others, is important for TAY in the development of resources to build emotional support that facilitates resilience in adulthood (Chung et al., 2007). However, building connectedness in the transition to adulthood is particularly challenging for system involved youth as many adult connections have been severed or disrupted due to system involvement or histories of abuse,
neglect, and other adverse childhood experiences (Brisson et al., 2022; Munson & Lox, 2012; Pennell et al., 2011).

Implications of Research and Practice

This study’s focus on Black juvenile justice-involved youth centers a population that experiences disproportionate contact with the juvenile justice system. Despite making up 14% of adolescents in the United States, Black youth are involved in 35% of juvenile justice cases and represent over 40% of incarcerated youth in the United States (Chung et al., 2007; Hockenberry & Puzzanchera, 2020; Padgaonkar et al., 2021; Sue & Sue, 2016; Washington et al., 2021). Centering Black juvenile justice-involved youth in this study provides an opportunity prioritize a particularly vulnerable population in both research and practice. Although the effects of systemic racism have been a driver disproportional minority contact (Padgaonkar et al., 2021), there is much to be done to support this population of young people downstream after becoming involved in the juvenile justice system.

For example, although juvenile justice involvement is often mentioned in research on the mental health of system-involved youth, there is little focus on justice-involved youth transitioning to adulthood (see Zajac et al., 2015 as an exception). Furthermore, a great deal of research on the transition to adulthood among juvenile justice-involved youth focuses on employment and education, however, this developmental period requires an investigation of key milestones as well as risks for impediments like mental health symptoms in their journey toward adulthood (Zajac et al., 2015). With this study’s findings related to the relationship between connectedness and mental health symptoms during the transitional period of adulthood, future research can explore how interventions that bolster connectedness can support Black youth involved in the juvenile justice system at this critical time in life.
Limitations

There are some limitations in this study. First, this study uses self-report data to understand mental health symptoms. Using only self-report to explore mental health symptoms could lead to underreporting which can be due to stigma around mental health (Bharadwaj et al., 2017). Drawing data about mental health symptoms from multiple sources of information (e.g., administrative mental health data) in future research could help to further contextualize the relationship between mental health symptoms and connectedness. Secondly, this study included participants from the parent study who were living in the community at the baseline interview (e.g., wave 0). Given ethical constraints of this study, data on participants who were detained, incarcerated, or living in a secured facility at a future wave were excluded and full information maximum likelihood (FIML) methods were used to address the missing data. Future research should explore the experiences of connectedness and mental health symptoms among justice involved youth who are incarcerated or detained in the juvenile justice system. Finally, this study explored the composite score of three areas of connectedness among this sample. It is likely that other forms of connectedness may be influential to explore with mental health symptoms as youth justice-involved youth transition into adulthood (e.g., connectedness with religion, romantic partners, mentors, racial-ethnic identity, and with service providers).

Conclusion

This present study used a random-intercept cross-lagged panel model to test the longitudinal and bidirectional relationship between mental health symptoms and connectedness among Black youth involved in the juvenile justice system. Black youth involved in the juvenile justice system are an incredibly vulnerable population to consider in efforts to improve youth mental health outcomes. This study identified a key transitional time in life in which
connectedness may be a key mechanism for future interventions to address the mental health concerns of this vulnerable population.
REFERENCES: Paper 3


MVP Health Care, Inc. (2020). *Special Populations: Transition Age Youth (TAY).*


CONCLUSIONS

This three-paper dissertation advances research by examining the relationships between the neighborhood environment, connectedness, and mental health among vulnerable Black youth. Collectively, the three papers contribute to growing knowledge on the presence of a nuanced relationship between connectedness and aspects of the neighborhood environment that influence Black youth mental health.

The systematic review conducted in paper 1 identified several aspects of the neighborhood environment that contributes to a range of mental health challenges. This paper also identified critical gaps in research on the relationship between neighborhood environment and mental health among Black youth with marginalized sexual and gender identities, disabilities, immigrant identities, and juvenile justice-involved youth. As such, future research should explore the aspects of the neighborhood environment that are salient in shaping the mental health of youth with marginalized identities.

The second paper focused on a particularly vulnerable population of Black youth – justice-involved youth – to test the stress process model (Aneshensel, 2009; Pearlin et al., 1981). The stress process model posits that the perception of disorder within the neighborhood environment may result in individuals avoiding certain areas and keeping to themselves (Aneshensel, 2009). This may result in a decrease of access to opportunities to build connectedness that can buffer against mental health challenges (Aneshensel, 2009). Using a hierarchical regression (Keith, 2015), this paper revealed that the addition of four connectedness types (peer, family, school, and community) to the model significantly doubled the proportion of
variance explained by the model. Findings suggest that connectedness is impactful in explaining mental health symptoms of Black juvenile justice-involved youth above and beyond demographic variables and the perceived neighborhood environment.

Finally, the third paper continued to investigate justice-involved Black youth mental health by honing in on the longitudinal and bidirectional relationship between mental health symptoms and connectedness in this population. Using a random-intercept cross-lagged panel model (Mulder & Hamaker, 2021; Usami, 2021), findings revealed that connectedness predicted subsequent decreases in mental health symptoms during youth’s transition to adulthood. This cross-lagged relationship may indicate that among the Black juvenile justice-involved youth in this sample, connectedness is an important mechanism for addressing mental health symptoms during the transition to adulthood.

**Limitations**

Each of the papers in this dissertation contributes to growing evidence on the roles of the neighborhood environment and connectedness on vulnerable groups of Black youth. Yet, there are several limitations that are important to consider when interpreting the findings. In paper one, the inclusion criteria for the review included youth aged 11-18 years old. Several studies in the review contained samples that fell outside of the inclusion criteria on both the younger and older side of this range. As such, the exclusion of these studies may leave out important findings related to the adolescent population under 11 years old and above 18 years old. Additionally, this review included studies that explored neighborhood environment as the primary independent variable; therefore, studies that explored the neighborhood environment as a moderating or mediating variable were not included unless the primary independent variable was an aspect of the neighborhood environment. Caution should be exercised when interpreting the results of this
systematic review, because by design it does not represent all that is currently known about the role of the neighborhood environment in mental health outcomes of Black youth.

Regarding paper two, it is important to note that the analysis was cross-sectional. Therefore, causal relationships between the variables cannot be established. While the cross-sectional nature of this data was sufficient for the study of the added contribution of PNE and connectedness in a model explaining the presence of mental health symptoms, this data cannot account for fluctuations in how youth perceive their neighborhood environments, the feelings of connectedness they experience, and the severity of mental health symptoms over time. Secondly, the data used for this study were collected between 2000-2003. Despite the age of the data, this study remains valuable as it explores relationships between variables that transcend time.

In paper 3, the study uses self-report data to understand mental health symptoms. Using only self-report to explore mental health symptoms could lead to underreporting which can be due to mental health stigma (Bharadwaj et al., 2017). Drawing data about mental health symptoms from multiple sources of information (e.g., administrative mental health data) in future research could help to further contextualize the relationship between mental health symptoms and connectedness. Secondly, this study included participants from the parent study who were living in the community at the baseline interview (e.g., wave 0). Given ethical constraints of this study, data on participants who were detained, incarcerated, or living in a secured facility at a future wave were excluded and full information maximum likelihood (FIML) methods were used to address the missing data. Future research should explore the experiences of connectedness and mental health symptoms among justice involved youth who are incarcerated or detained in the juvenile justice system. Finally, this study explored the composite score of three areas of connectedness among this sample. It is likely that other forms
of connectedness may be influential to explore with mental health symptoms as youth justice-involved youth transition into adulthood (e.g., connectedness with religion, romantic partners, mentors, racial-ethnic identity, and with service providers).

Across all three papers in this dissertation, studies were conducted across or within specific counties in the United States. Paper one focused on Black youth across the United States, limiting its generalizability outside of the United States. Papers two and three used convenience samples to recruit Black youth living in Maricopa (Arizona) and Philadelphia (Pennsylvania) counties, therefore future research is needed to confirm the applicability of these study findings to other cities and states across the county.

Implications

Despite these limitations, the three studies provide important insights related to the roles of the neighborhood environment and connectedness in shaping the mental health of vulnerable Black youth. First, the findings of the systematic review highlighted the varied operationalization and measurement of neighborhood environment which points to the need to develop measurement practices that aid in reaching more consistent findings across the field on the influences of the neighborhood environment on Black youth mental health.

Second, related to the relationship between the neighborhood environment and mental health, future research may benefit from mixed methods research on Black youth with marginalized identities (e.g., Black youth with sexual and gender identities, disabilities, immigrant identities, and juvenile justice-involved youth). This may offer valuable insights for understanding the mechanisms that bolster the mental health of vulnerable Black youth amid disadvantaged neighborhood environments from their perspectives. Continued investigation about the built environment within a geographically meaningful boundary may also prove to be a
useful approach to understanding how the objective and structural environment influences Black youth mental health symptoms. While a growing number of studies are exploring egocentric boundaries to generate more specific and contextualized findings related to the impact of neighborhood on various health outcomes (Duncan et al., 2014), more can be explored related to mental health symptoms. For example, understanding how Black youth living in disadvantaged neighborhoods connect with natural spaces and the built environment in their neighborhoods will help develop strategies to support interventions that improve public spaces.

Finally, this dissertation provides important implications on the utility of connectedness in supporting justice-involved Black youth, particularly during their transition to adulthood. Future researchers and practitioners should investigate ways to increase connectedness and build an understanding of how connectedness has the potential to serve as a protective mechanism in addressing the mental health symptoms of justice-involved Black. This is especially important to investigate among justice-involved girls and among justice-involved youth during the transition to adulthood.

This dissertation contributes to a gap in research on the relationships between the neighborhood environment, connectedness, and mental health among vulnerable Black youth. Future studies should use these findings to develop interventions that bolster connectedness among justice-involved Black youth to improve mental health symptoms. In order to identify approaches to addressing concerning mental health trends among Black youth, it is critical to identify intervention points that are salient in this population. Research presented here suggests the presence of a nuanced relationship between connectedness, mental health, and aspects of the neighborhood environment that require further study.
REFERENCES: Conclusions


<table>
<thead>
<tr>
<th>ID</th>
<th>Author and Year</th>
<th>N</th>
<th>Sample Age</th>
<th>Ethnic/Racial Demographics</th>
<th>Neighborhood Predictor</th>
<th>Mental Health Outcome</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aneshensel &amp; Sucoff (1996)</td>
<td>877</td>
<td>12 to 17</td>
<td>African Americans (11.4%)</td>
<td>Ambient Hazards and Social Cohesion</td>
<td>Depression, Anxiety, Oppositional Defiant, &amp; Conduct Disorder</td>
<td>Oppositional defiant disorder was most common in underclass African American neighborhoods and least common in working-class African American neighborhoods ($b = -0.609, p &lt; .001$)</td>
</tr>
<tr>
<td>2</td>
<td>Bennett &amp; Joe (2015)</td>
<td>2,626</td>
<td>7th, 9th, 12th graders (M=15.15)</td>
<td>African American (n=1,116)</td>
<td>Exposure to Community Violence</td>
<td>Suicidality</td>
<td>Exposure to violence showed no direct relationship to suicidality. Exposure to violence was significantly related to depressive symptoms ($b = 0.14, p = 0.02$).</td>
</tr>
<tr>
<td>3</td>
<td>Boxer et al. (2014)</td>
<td>132</td>
<td>11 to 14</td>
<td>Black/African American (86%)</td>
<td>Exposure to Neighborhood Violence</td>
<td>Psychopathology</td>
<td>No significant relations between exposure to community violence and mental health outcomes</td>
</tr>
<tr>
<td>4</td>
<td>Brenner (2012)</td>
<td>665</td>
<td>Mean age = 15.9</td>
<td>Black or African American youth</td>
<td>Neighborhood Disadvantage</td>
<td>Psychological Stress</td>
<td>An individual’s perceived stress level is a function of: the average perceived stress level across all neighborhoods, the contribution of the neighborhood’s specific disadvantage level on the</td>
</tr>
</tbody>
</table>
overall perceived stress level, a person’s linear change in perceived stress over time, the overall effect of a specific level of disadvantage on a person’s linear change in stress, the curvilinear change in stress, the unique effect of a particular neighborhood on an individual’s intercept and slope for perceived stress, and the residuals. The addition of neighborhood socioeconomic disadvantage improved the model fit ($\chi^2=8.44[2], p < 0.05$) over the null model.

Living in a more disadvantaged neighborhood increased an individual’s initial perceived stress levels ($\beta = 0.05 [0.025], p < 0.05$).

Individuals living in more disadvantaged neighborhoods reported a steeper decrease in perceived stress (slope) over time than individuals in less disadvantaged neighborhoods.
There were no significant differences based on neighborhood relocation status for major depressive disorder symptoms in any model.

HOPE VI and control group participants had a similar mean C-DSC conduct disorder symptoms ($\beta = -1.63, p < .01$), however when pre-relocation census data in model 2 and neighborhood measures in model 3 were included, the difference became significant ($\beta = -1.46, p < .05$; $\beta = -1.63, p < .01$, respectively).

For youth self-report of the child behavior checklist, differences in internalizing and externalizing scales became stronger with the addition of pre-move census data, while there was little...
<table>
<thead>
<tr>
<th></th>
<th>Study</th>
<th>Sample Size</th>
<th>Sample Characteristics</th>
<th>Exposure to Community Violence; Urbanicity</th>
<th>Internalizing Behaviors (depression, anxiety, and somatic complaints)</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Chen (2010)</td>
<td>901</td>
<td>(M = 15.11) African American (84.7%)</td>
<td></td>
<td></td>
<td>For African American adolescents, greater level of exposure to community violence was related to increased internalizing behaviors ($\beta = .09, p &lt; .05$) Urbanicity did not predict internalizing behavior.</td>
</tr>
<tr>
<td>7</td>
<td>Cooley-Quille et al. (2001)</td>
<td>185</td>
<td>High School Students (M = 15.43) African American (90%)</td>
<td>Exposure to Community Violence</td>
<td>Behavior problems, Depressive Symptoms, Anxiety</td>
<td>No differences between high and low exposure group on externalizing problems. High exposure groups endorsed more trait anxiety ($F(3, 91) = 3.60, p &lt; .05$) and more internalizing problems ($F(3, 93) = 4.71, p &lt; .005$)</td>
</tr>
<tr>
<td>8</td>
<td>Deane et al. (2021)</td>
<td>268</td>
<td>Mean age = 11.65 African American</td>
<td>Exposure to Community Violence</td>
<td>Post-Traumatic Stress, Dysphoria, Anxiety, and Hostility</td>
<td>Violence exposure was significantly related to elevated same-day posttraumatic stress ($\beta = .06, p &lt; .01$), same-day dysphoria ($\beta = .03, p &lt; .01$), increased next-day posttraumatic stress ($\beta = .11, p &lt; .01$) No relation between violence exposure and same-day hostility or next-day anxiety emerged as significant.</td>
</tr>
</tbody>
</table>
There was a significant interaction between daily violence exposure and both dysphoria ($\beta = .23$, $p < .001$) and anxiety variability ($\beta = -.63$, $p < .02$) on next-day posttraumatic stress levels.

A significant interaction was observed between violence exposure and dysphoria variability in both same-day and next-day dysphoria models.

<table>
<thead>
<tr>
<th>Study</th>
<th>n</th>
<th>Age</th>
<th>Ethnicity</th>
<th>Exposure to Community Violence</th>
<th>Aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td>DiClemente &amp; Richards (2021)</td>
<td>263</td>
<td>6th graders $M = 11.65$</td>
<td>Black (90%)</td>
<td>Exposure to Community Violence</td>
<td>Aggression</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was a negative and significant relationship between being a victim of CV and parent-reported aggression in seventh grade ($b = -1.63$, $p = .015$).

There was a positive and significant interaction between witnessing CV and gender as well as being a victim of CV and gender on child-reported aggression at eighth grade ($b = .88$, $p = .02$ and $b = 2.22$, $p = .04$, respectively).

There was a positive and
significant interaction between witnessing CV and gender on child-reported aggression at eighth grade (b = .88, p = .02).

10  Edlynn et al. (2008)  240  6th graders  African American  Exposure to Community Violence  Anxiety  Correlation coefficient for exposure to community violence showed no direct association with anxiety.

11  Fredland et al. (2008)  309  11 to 14  African American  Community Violence Exposure  Mental health: (internalizing and externalizing symptoms)  Significant bivariate relationships between community violence and externalizing symptoms was found (r = .22, p < .01).

12  Gaylord-Harden et al. (2011)  251  Mean age = 12.86  African American  Exposure to Community Violence  Depressive Symptoms, Anxiety Symptoms  Association between ECV and depression was curvilinear (R^2 = .02, p < .04) whereas the association to anxiety was linear and positive (β = .17, p < .01).

13  Gaylord-Harden et al. (2017)  133  Mean age = 15.17  African American  Exposure to Community Violence  Aggression, depression, hyperarousal  Exposure to community violence predicted changes in levels of aggression (b = .45, p = .004), depression (b = .21, p < .05) and hyperarousal symptoms (b = .22, p = .010) over time.
<table>
<thead>
<tr>
<th></th>
<th>Study</th>
<th>Sample Size</th>
<th>Age Range</th>
<th>Ethnicity</th>
<th>Outcome Measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Gonzalez et al. (2012)</td>
<td>171</td>
<td>11 to 16</td>
<td>African American</td>
<td>Maternal Perceptions of Neighborhood Context, Psychosocial Adjustment (Internalizing and Externalizing Behaviors)</td>
<td>The curvilinear association between ECV and changes in depressive symptoms and aggressive beliefs over time was not significant. Mothers who reported a lower sense of community in their neighborhoods had youths who reported higher levels of hopelessness ($t = -2.70, p &lt; .01$) Mothers who reported higher levels of crime in their neighborhoods had youths who reported greater hopelessness ($t = -2.99, p &lt; .01$) and in turn, more internalizing ($t = 5.17, p &lt; .001$)</td>
</tr>
<tr>
<td>15</td>
<td>Griffin et al. (1999)</td>
<td>452</td>
<td>6th graders</td>
<td>90% Black</td>
<td>Perceived Neighborhood Risk, Interpersonal Aggression</td>
<td>Greater perceived Neighborhood Risk was associated with more Interpersonal Aggression ($\beta = -0.15, p &lt; 0.05$)</td>
</tr>
<tr>
<td>16</td>
<td>Hammack et al. (2004)</td>
<td>196</td>
<td>6th graders</td>
<td>African American</td>
<td>Exposure to Community Violence, Depressive Symptoms</td>
<td>Witnessing CV was significantly associated with increased depressive symptoms both cross-sectionally ($r = .13, p &lt; .05$) and longitudinally ($r = .16, p &lt; .05$), but only for girls.</td>
</tr>
</tbody>
</table>
CV victimization was significantly associated with increased depressive symptoms both cross sectionally ($r = .14, p < .05$) and longitudinally ($r = .18, p < .01$).

The relation between either witnessing or victimization and anxiety symptoms was not significant across the entire sample but, witnessing CV was significantly associated with increased anxiety for girls cross-sectionally.
<table>
<thead>
<tr>
<th>17</th>
<th>Hurd et al. (2003)</th>
<th>571</th>
<th>Mean age = 17.8</th>
<th>African American</th>
<th>Objective Neighborhood Characteristics and Neighborhood Cohesion</th>
<th>Depressive Symptoms and Anxiety Symptoms</th>
</tr>
</thead>
</table>

Adolescents’ perceptions of their neighborhoods as cohesive related to fewer symptoms of depression (b = - .20, SE = 0.09, p < .05) and anxiety (b = - .18, S.E. = 0.07, p < .05).

Did not find support for direct effects of neighborhood level-variables on mental health outcome variables.

Significant indirect effects were found with percent African American residents in neighborhood on depressive symptoms via perceptions of neighborhood cohesion (unstandardized indirect effect = -.13, S.E. = 0.06, p < .05) as well as indirect effects of percent African American residents in neighborhood on anxiety symptoms via perceptions of neighborhood cohesion (unstandardized indirect effect = -.12, S.E. = 0.05, p < .05)

Significant indirect effects
were found with percent residentially stable neighborhood residents on depressive symptoms via perceptions of neighborhood cohesion (unstandardized indirect effect = -.15, SE = 0.06, p < .05) as well as indirect effects of percent residentially stable neighborhood residents on anxiety symptoms via perceptions of neighborhood cohesion (unstandardized indirect effect = -.14, S.E. = 0.06, p < .05)

Significant indirect effects were found with neighborhood unemployment rate on depressive symptoms via perceptions of neighborhood cohesion (unstandardized indirect effect = .10, S.E. = 0.04, p < .05) as well as indirect effects of neighborhood unemployment rate on anxiety symptoms via perceptions of neighborhood cohesion (unstandardized indirect effect = .09, S.E. = 0.04, p < .05)
<table>
<thead>
<tr>
<th></th>
<th>Source</th>
<th>Sample Size</th>
<th>Grade</th>
<th>Race/Ethnicity</th>
<th>Exposure Type</th>
<th>Symptoms</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Kaynak et al. (2011)</td>
<td>216</td>
<td>7th</td>
<td>92% African American</td>
<td>Community Violence Exposure</td>
<td>Depressive Symptoms</td>
<td>CVE did not predict depressive symptoms at time 3 when controlling for gender, experimental condition, depression symptoms at Time 1 social constraints, and social support.</td>
</tr>
<tr>
<td>19</td>
<td>Kohl et al. (2015)</td>
<td>320</td>
<td>6th, 7th, 8th grade students</td>
<td>African American</td>
<td>Exposure to community Violence</td>
<td>Depression Symptoms</td>
<td>ECV at 6th grade was significantly positively associated with depressive symptoms in 6th (unstandardized path coefficient = .20, ( p &lt; .01 )) and 7th grade (unstandardized path coefficient = .24, ( p &lt; .01 )). However, ECV at 6th grade was not significantly associated with 8th grade depression. ECV at 7th grade was significantly positively associated with depressive symptoms at 7th grade (unstandardized path coefficient=.16, S.E. = .07, ( p &lt; .05 )) and in 8th grade (unstandardized path coefficient=.21, S.E. = .06, ( p &lt; .01 )).</td>
</tr>
<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Age Range</td>
<td>Ethnicity</td>
<td>Witnessing Context</td>
<td>Symptoms/Behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>-----------</td>
<td>-----------</td>
<td>--------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lambert et al. (2012)</td>
<td>678</td>
<td>15.11 to 17.22</td>
<td>87% African American</td>
<td>Witnessing Community Violence</td>
<td>Depressive Symptoms, Anxiety Symptoms, Aggressive Behavior</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ECV at 8th grade was significantly positively associated with depressive symptoms at 8th grade (unstandardized path coefficient = .15, S.E.=.07, p < .05).

Witnessing CV against a family member was significantly and positively associated with anxiety symptoms and depressive symptoms across the sample ($t = 2.28, p < .05$ and $t = 3.05, p < .01$ respectively), and was associated with aggressive behaviors among females ($t = 3.19, p < .01$).

Witnessing CV against a close friend was significantly and positively associated with depressive symptoms across the sample ($t = 3.18, p < .05$) and with anxiety symptoms among males ($t = 3.76, p < .001$).

Witnessing CV against an acquaintance was significantly positively associated with aggressive behavior across the sample ($t$
<table>
<thead>
<tr>
<th></th>
<th>Study Reference</th>
<th>Sample Size</th>
<th>Age Range</th>
<th>Ethnicity (Percentage)</th>
<th>Exposure Variable (Risk)</th>
<th>Effect Size</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>McGee (2003)</td>
<td>500</td>
<td>12 to 18</td>
<td>Black (86%)</td>
<td>Exposure to Community Violence (Risk)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Mennis et al. (2018)</td>
<td>248</td>
<td>13 to 14</td>
<td>African American (89%)</td>
<td>Greenspace</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Paxton et al. (2003)</td>
<td>77</td>
<td>13 to 16</td>
<td>African American</td>
<td>Exposure to Community Violence</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exposure to community violence (indirect and direct risk factors) were substantial predictors of both internalizing and externalizing problems ($\beta = .201, p < .001; \beta = .372, p < .001$).

Exposure to greenspace in the activity spaces of urban adolescents is associated with lower psychological stress. Exposure to violence significantly predicted depressive symptoms when controlling for age and socioeconomic status ($\beta = .32, p < .05$).
Additional analyses were conducted to see if specific aspects of exposure to violence were associated with depressive and PTSD symptoms. Direct victimization was the only significant predictor for depressive symptoms ($\beta = .45, p < .001$) and PTSD ($\beta = .31, p < .05$).

Results demonstrated a significant main effect of Time 1 witnessing community violence and Time 2 perceived stress ($b = .25, p = .011$), anxiety ($b = .23, p = .021$), depressive symptoms ($b = .21, p = .030$), aggression ($b = .33, p < .001$), and posttraumatic stress symptoms ($b = .28, p = .006$).

For Time 1 violence victimization, the following main effects were observed: Time 2 stress ($b = .25, p = .010$), anxiety ($b = .26, p = .007$), and depressive
<table>
<thead>
<tr>
<th>Study</th>
<th>Sample Size</th>
<th>Age Range</th>
<th>Ethnicity</th>
<th>Measures</th>
<th>Outcome</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Robinson et al. (2011)</td>
<td>88</td>
<td>13-16</td>
<td>African American Exposure to Community Violence</td>
<td>Aggression</td>
<td>Exposure to violence significantly predicted aggression ($\beta = .41, p &lt; .001$)</td>
</tr>
<tr>
<td>26</td>
<td>Romero et al. (2015)</td>
<td>271</td>
<td>6th graders ($M = 11.65$)</td>
<td>African American Objective Measures of Neighborhood Disadvantage, youth perceived neighborhood disadvantage, parent and youth neighborhood cohesion</td>
<td>Aggression</td>
<td>Examination of fixed effects revealed that, on average, there was no effect of youth perceptions of neighborhood cohesion, youth perceptions of neighborhood disadvantage, parent perceptions of neighborhood cohesion, or parent perceptions of neighborhood disadvantage on the initial level of intercept of aggression. Youth perceptions of neighborhood disadvantage was the only significant predictor of changes in aggression across 3 years ($b_{10} = .26, t(299) = 6.56, p &lt; .001$). Post hoc analyses revealed that only youth perceptions of gang and drug activity in their neighborhood positively correlated with their reports</td>
</tr>
</tbody>
</table>
Objective neighborhood characteristics significantly predicted both the initial level of aggression and the rate of change in aggression across 3 years.

Year 1, $b_{01} = -48.12$, $t(299) = -2.25$, $p < .05$, $b_{11} = 40.34$, $t(299) = .63$, $p < .01$; Year 2, $b_{02} = 77.20$, $t(299) = 2.19$, $p < .05$, $b_{12} = -65.11$, $t(299) = -2.93$, $p < .01$; neighborhood characteristics

Year 3, $b_{03} = -28.74$, $t(299) = -2.08$, $p < .05$, $b_{13} = 24.53$, $t(299) = 2.82$, $p < .01$.

A significant relationship was not found between violence exposure and distress symptoms of PTSD, anger, or anxiety but there was a significant negative correlation between depression ($r = -.321; p < .001$)

<table>
<thead>
<tr>
<th>Study</th>
<th>n</th>
<th>Age Range</th>
<th>Group</th>
<th>Intervention</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scott (1998)</td>
<td>100</td>
<td>15 to 17</td>
<td>African American</td>
<td>Exposure to Community Violence</td>
<td>PTSD, Anger, Anxiety</td>
</tr>
<tr>
<td></td>
<td>Study</td>
<td>Sample Size</td>
<td>Age Range</td>
<td>Group</td>
<td>Variable</td>
</tr>
<tr>
<td>---</td>
<td>----------------</td>
<td>-------------</td>
<td>------------</td>
<td>------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>28</td>
<td>Sun et al. (2020)</td>
<td>85</td>
<td>13 to 17</td>
<td>African American girls</td>
<td>Perceived Neighborhood Violence and Crime</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Post-Traumatic Stress Disorder Symptoms</td>
</tr>
<tr>
<td>29</td>
<td>Tache et al. (2018)</td>
<td>367</td>
<td>9th and 10th graders (M = 14.78)</td>
<td>African American</td>
<td>Community Violence Exposure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Anxiety Symptoms, Depressive Symptoms, Aggressive Behavior</td>
</tr>
<tr>
<td>Study</td>
<td>Authors</td>
<td>Sample Size</td>
<td>Grade Level</td>
<td>Race</td>
<td>Risk Factors</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>-------------</td>
<td>-------------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>30</td>
<td>Wight et al. (2005)</td>
<td>12,473</td>
<td>7th to 12th grade</td>
<td>African American (15.79%)</td>
<td>Contextual Level Risk Factors</td>
</tr>
</tbody>
</table>

The regression of depressive and anxious symptoms on community violence exposure did not yield a significant interaction. Interactions between contextual-level median household income and being African American was not statistically significant.

Interactions between contextual-level proportion Non-Hispanic White and being African American was statistically significant (coefficient = 3.90, S.E. = 1.58, \( p < 0.01 \)). Meaning, African American teens who reside in high-proportion NHW areas report depressive symptoms much more often than NHW living in similar areas.
<table>
<thead>
<tr>
<th>Aspects of the Neighborhood Environment and Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table 1.2</strong></td>
</tr>
<tr>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td><strong>Perceived Neighborhood Environment</strong></td>
</tr>
<tr>
<td>Ambient Hazards</td>
</tr>
<tr>
<td>Social Cohesion</td>
</tr>
<tr>
<td>Collective Efficacy</td>
</tr>
<tr>
<td>Neighborhood Ecology</td>
</tr>
<tr>
<td>Neighborhood Safety</td>
</tr>
<tr>
<td>Neighborhood Cohesion</td>
</tr>
<tr>
<td>Neighborhood Risk</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><em>The degree of gang activity and delinquency in one's neighborhood and attitudes regarding how tough one must be to get by in the neighborhood.</em></td>
</tr>
<tr>
<td>Neighborhood Disadvantage (Subjective)</td>
</tr>
<tr>
<td>Youth's perceived level of crime and problem behavior.</td>
</tr>
<tr>
<td>Perceptions of Neighborhood Context</td>
</tr>
<tr>
<td>Made up of three constructs including neighborhood attitudes, fear of the level of violence in the neighborhood, and the degree to which they worried that someone in their neighborhood would physically hurt them</td>
</tr>
<tr>
<td>Perceived Neighborhood Violence and Crime</td>
</tr>
</tbody>
</table>

**Objective / Structural Neighborhood Environment**
### Neighborhood-Level

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent African American residents, residential stability, neighborhood poverty rate, and neighborhood unemployment rate from block groups in 1990 U.S. Census</td>
<td></td>
<td>Hurd et al., 2013</td>
</tr>
<tr>
<td>Factor scores based on low SES, high SES, residential stability, and racial makeup from 2000 and 2010 U.S. Census tract Data</td>
<td></td>
<td>Byck et al., 2016</td>
</tr>
</tbody>
</table>

### Neighborhood Context

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator of &quot;urbanicity&quot; which includes areas with populations between 2,500 and 8,000</td>
<td>Indicated whether participant lived in a &quot;completely urban&quot; or &quot;not completely urban&quot; neighborhood</td>
<td>Chen, 2009</td>
</tr>
</tbody>
</table>

### Greenspace

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to vegetation and natural areas; natural landscapes.</td>
<td>Mean Normalized Difference Vegetation Index (NDVI) value within 100m buffer surrounding participants location</td>
<td>Mennis et al., 2018</td>
</tr>
<tr>
<td>Neighborhood Disadvantage (Objective)</td>
<td>Composite variable depicting 2000 Census data and Chicago Police Department crime statistics for neighborhoods from which participants are recruited at the zip code level.</td>
<td>Percent of families living below poverty, percentage of single mother headed households, percentage of neighborhood residents without high school diploma, violent crimes per square mile, and violent crime per person.</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Neighborhood Disadvantage</td>
<td>Composite variable created from 1990 Census data at the block level chosen to derive from and are thought to represent theoretically meaningful constructs such as: neighborhood disorganization, poor institutional resources, and a deleterious environmental and developmental setting</td>
<td>Percentage of the male labor force over the age of 16 that is unemployed, percentage of female headed households, percent of families below the poverty line, median family income (reverse coded), percent of people with a bachelor’s degree (reverse coded), and percent of people that work in professional or executive jobs (reverse coded).</td>
</tr>
<tr>
<td>Neighborhood Socioeconomic Disadvantage</td>
<td>Composite variable created from 2000 Census data at the block level.</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Percent of families in the census block group at or below 1.5 times the Federal Poverty Level (FPL), percent of female single-headed households in the block group below the FPL with at least one child under 18 years of age, percent of unemployment in the block group and percent of households with a head of household who has less than a high school education level.</td>
<td>Brenner, 2012</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contextual-Level Risk</th>
<th>The average attributes of the Census tracts that feed into the high school sampling area of the study to characterize both the neighborhood and the surrounding area.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The mean value of all tracks in the sampling area using indicators including: proportion of Non-Hispanic White households and median household income.</td>
<td>Wight et al., 2005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure to Community Violence</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Community Violence Exposure</th>
<th>Exposure through witnessing or victimization to any &quot;deliberate acts intended to cause physical harm against a person or persons in a community&quot; (Cooley-Quille et al., 1995)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children's Report of Exposure to Violence measure (Cooley-Quille et al., 1995)</td>
<td>Tache et al., 2018; Cooley-Quille et al., 2001</td>
</tr>
<tr>
<td>Screening Survey of Exposure to Community Violence (Richters, 1990)</td>
<td>Paxton et al., 2004</td>
</tr>
</tbody>
</table>
Children’s Exposure to Community Violence Scale (Richters & Martinez, 1993)

Bennett & Joe, 2015; Kaynak et al., 2011; Lambert et al., 2012; McGee, 2003; Scott, 1998

9-item Exposure to Violence Scale (Gorman-Smith & Tolan, 1998)

Sum of five types of exposure to violence: witnessed someone shot or stabbed, got stabbed, had a gun or knife pulled on, got shot or was jumped

Byck et al., 2016

Chen, 2009

Adapted (18-items) and full (25-items) Daily Exposure to Violence Measure (DEV; Buka et al., 1997)

Deane et al., 2021; DiClemente & Richards, 2021; Edlynn et al., 2008; Gaylord-Harden et al., 2017; Hammack et al. 2004

Ten violence/victimization subscale items from the Multicultural Events Schedule for Adolescents (MESA; Gonzales et al., 1995)

Gaylord-Harden et al., 2011
<table>
<thead>
<tr>
<th>Exposure to Violence (Parent and Youth Report)</th>
<th>The FBI and police say that a &quot;violent crime&quot; is one of the following things: 1) A physical assault, 2) A robbery, 3) A murder, 4) A sexual assault.</th>
<th>Questions asked about exposure to four types of violence in your neighborhood in the last three months.</th>
<th>Boxer et al., 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to Violence (Police Report)</td>
<td>When someone uses physical force on purpose in a way that could cause death or physical injury.</td>
<td>Counts of all physical assault, robbery, murder, and sexual assault within .25 miles radius</td>
<td>Boxer et al., 2020</td>
</tr>
</tbody>
</table>
Table 2.1

*Descriptive Statistics*

<table>
<thead>
<tr>
<th>Sample Demographics</th>
<th>N (%)</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>140(77.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>40(22.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>180</td>
<td>14-18</td>
<td>15.91</td>
<td>1.18</td>
</tr>
<tr>
<td>Family Composition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Parent</td>
<td>137 (76.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two Parent</td>
<td>14 (7.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does not live with parents</td>
<td>29 (16.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent ISP</td>
<td>179</td>
<td>22 – 77</td>
<td>49.06</td>
<td>11.47</td>
</tr>
<tr>
<td>Mental Health</td>
<td>170</td>
<td>0 – 3</td>
<td>.39</td>
<td>.42</td>
</tr>
<tr>
<td>PNE</td>
<td>180</td>
<td>1 – 4</td>
<td>2.51</td>
<td>.69</td>
</tr>
<tr>
<td>Community Connectedness</td>
<td>180</td>
<td>1 – 4</td>
<td>2.63</td>
<td>.51</td>
</tr>
<tr>
<td>Family Connectedness</td>
<td>177</td>
<td>1 – 4</td>
<td>3.03</td>
<td>.72</td>
</tr>
<tr>
<td>School Connectedness</td>
<td>163</td>
<td>1 – 5</td>
<td>3.55</td>
<td>.62</td>
</tr>
<tr>
<td>Peer Connectedness</td>
<td>176</td>
<td>1 – 4</td>
<td>3.45</td>
<td>.39</td>
</tr>
</tbody>
</table>
### Table 2.2

**Summary of Hierarchical Regression Analysis for Variables Predicting Juvenile Justice-Involved Black Youth’s Mental Health (N=148)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th></th>
<th></th>
<th>Step 2</th>
<th></th>
<th></th>
<th>Step 3</th>
<th></th>
<th></th>
<th>Step 4</th>
<th></th>
<th></th>
<th></th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>SE</td>
<td>β</td>
<td></td>
<td>b</td>
<td>SE</td>
<td>β</td>
<td>b</td>
<td>SE</td>
<td>β</td>
<td>b</td>
<td>SE</td>
<td>β</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-0.56</td>
<td>0.19</td>
<td>-0.23**</td>
<td>-0.56</td>
<td>-0.19</td>
<td>-0.23**</td>
<td>-0.51</td>
<td>-0.19</td>
<td>-0.21**</td>
<td>-0.54</td>
<td>-0.19</td>
<td>-0.22**</td>
<td>0.055</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.01</td>
<td>0.07</td>
<td>0.01</td>
<td>-0.001</td>
<td>0.07</td>
<td>0.01</td>
<td>-0.001</td>
<td>0.07</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.000</td>
</tr>
<tr>
<td>Parent ISP</td>
<td>0.01</td>
<td>0.01</td>
<td>0.12</td>
<td>0.01</td>
<td>0.01</td>
<td>0.09</td>
<td>0.01</td>
<td>0.11</td>
<td>0.01</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.013</td>
<td></td>
</tr>
<tr>
<td>PNE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.65*</td>
</tr>
<tr>
<td></td>
<td>0.09</td>
<td>0.13</td>
<td>0.06</td>
<td>0.17</td>
<td>0.13</td>
<td>0.11</td>
<td>1.01</td>
<td>0.52</td>
<td>0.65*</td>
<td>0.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectedness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>-0.34</td>
<td>0.20</td>
<td>-0.15</td>
<td>-0.36</td>
<td>0.20</td>
<td>-0.16</td>
<td>0.048</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>-0.21</td>
<td>0.13</td>
<td>-0.15</td>
<td>-0.19</td>
<td>0.13</td>
<td>-0.13</td>
<td>0.017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>0.03</td>
<td>0.15</td>
<td>0.02</td>
<td>0.02</td>
<td>0.15</td>
<td>0.01</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer</td>
<td>-0.12</td>
<td>0.22</td>
<td>-0.05</td>
<td>-0.17</td>
<td>0.22</td>
<td>-0.06</td>
<td>0.002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent ISP x PNE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.024</td>
</tr>
<tr>
<td>Female</td>
<td>-0.02</td>
<td>0.01</td>
<td>-0.36*</td>
<td>0.01</td>
<td>-0.36*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>-0.02</td>
<td>0.01</td>
<td>-0.43</td>
<td>0.01</td>
<td>-0.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( F )</td>
<td>3.49**</td>
<td>2.76*</td>
<td>2.79**</td>
<td>2.65**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.07</td>
<td>.07</td>
<td>.14</td>
<td>.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assessment of Change in \( R^2 \)**

| \( \Delta R^2 \) | .004 | .067 | .023 |
| \( F \) for \( \Delta R^2 \) | 3.49*| 2.70*| 1.93|

*Note.* *p < .05. **p < .01; \( \Delta \) = change; ES = Effect size; values for gender were dummy coded as 0 = female, 1 = male
Table 3.1 Descriptive Analysis of Study Variables N = 180

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>%</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>140</td>
<td>77.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>40</td>
<td>22.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Composition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Parent</td>
<td>137</td>
<td>76.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two Parent</td>
<td>14</td>
<td>7.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not connected to parents</td>
<td>29</td>
<td>16.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Index Social Position Baseline</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Baseline</td>
<td>15.91</td>
<td>1.18</td>
<td>14 - 18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age W2</td>
<td>16.91</td>
<td>1.17</td>
<td>15 - 19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age W4</td>
<td>17.92</td>
<td>1.16</td>
<td>16 - 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age W6</td>
<td>18.92</td>
<td>1.17</td>
<td>17 - 21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age W7</td>
<td>19.97</td>
<td>1.16</td>
<td>18 - 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Symptoms Baseline</td>
<td>0.30</td>
<td>0.97</td>
<td>0 - 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Symptoms W2</td>
<td>0.35</td>
<td>0.82</td>
<td>0 - 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Symptoms W4</td>
<td>0.28</td>
<td>0.74</td>
<td>0 - 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Symptoms W6</td>
<td>0.22</td>
<td>0.71</td>
<td>0 - 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Symptoms W7</td>
<td>0.23</td>
<td>0.73</td>
<td>0 - 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectedness Baseline</td>
<td>1.49</td>
<td>0.98</td>
<td>(-7) - 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectedness W2</td>
<td>-0.30</td>
<td>0.81</td>
<td>(-6) - 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectedness W4</td>
<td>-0.39</td>
<td>0.82</td>
<td>(-5) - 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectedness W6</td>
<td>-0.38</td>
<td>0.76</td>
<td>(-3) - 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectedness W7</td>
<td>1.17</td>
<td>0.51</td>
<td>(-3) - 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Connectedness variables are z scores; Gender, Parent Index of social position, and family composition are reported for the sample of Black youth in the baseline wave.
Figure 1.1 Prisma Table of Search and Selection Process

5,899 studies imported for screening → 1,640 duplicates removed

4,259 studies screened → 4,150 studies ineligible

109 full-text studies assessed for eligibility

30 studies included

79 studies excluded:
29 Ineligible age
22 No subgroup analysis of Black youth
9 IV is not an aspect of Neighborhood Environment
8 Not a mental health outcome
6 Adult population
3 Duplicates
1 Systematic review
1 Study outside the United States
**Figure 1.2** Methodological Quality of Included Manuscripts as Assessed Using the Mixed Methods Appraisal Tool

<table>
<thead>
<tr>
<th>Citation</th>
<th>Screening Questions</th>
<th>Quantitative Descriptive Study Design</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S1</td>
<td>S2</td>
</tr>
<tr>
<td>Aneshensel &amp; Sucoff (1996)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Bennett &amp; Joe (2021)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Boxer et al. (2014)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Brenner (2012)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Byck et al. (2015)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Chen (2010)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Cooley-Quille et al. (2001)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Deane et al. (2021)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>DiClemente &amp; Richards (2021)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Edlynn et al. (2008)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Fredland et al. (2008)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gaylord-Harden et al. (2011)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gaylord-Harden et al. (2017)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gonzalez et al. (2012)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Griffin et al. (1999)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Hammack et al. (2004)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Hurd et al. (2003)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Kaynak et al. (2011)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Kohl et al. (2015)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lambert et al. (2012)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>McGee (2003)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Mennis et al. (2018)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Paxton et al. (2003)</td>
<td>Y</td>
<td>C</td>
</tr>
<tr>
<td>Pierre et al. (2020)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Robinson et al. (2011)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Romero et al. (2015)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Scott (1998)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Sun et al. (2020)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Tache et al. (2018)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Wight et al. (2005)</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Notes. S1 = Screening question 1: Are there clear research questions?; S2 = Screening question 2: Do the collected data allow to address the research questions?; 1 = Is the sampling strategy relevant to address the research question?; 2 = Is the sample representative of the target population?; Are the measurements appropriate?; 4 = Is the risk of nonresponse bias low?; 5 = Is the statistical analysis appropriate to answer the research question?; Y = Yes; N = No; C = Can’t tell.
**Figure 3.1** Random intercept cross-lagged model (RI-CLPM) testing Mental Health Symptoms and Connectedness

Notes. RIMH = random intercept of mental health symptoms; RICON = random intercept of connectedness; MH = mental health symptoms; CON = connectedness; wMH = the within-person fluctuations of mental health symptoms, wCON = the within-person fluctuations of connectedness, wMH_N are total scores of mental health symptoms at baseline (0) and waves 2, 4, 6 and 7, wCON_N are total scores of connectedness at baseline, and waves 2, 4, 6 and 7.
Figure 3.2 Random intercept cross-lagged model (RI-CLPM) testing Mental Health Symptoms and Connectedness

Note. * $p < 0.05$. 

Test of Model Fit: $\chi^2 = 101.928 \ df = 56, p = 0.002$; RMSEA = 0.068 90% CI [0.046, 0.084]; SRMR = 0.068
APPENDIX A: SEARCH TERMS

**PSYCINFO** (1,896 results) using title and abstract and no filter for Black*

adolescen* OR TI(youth* OR adolescen* OR “young people” OR teen* OR “high school” OR “middle school”) OR AB(youth* OR adolescen* OR “young people” OR teen* OR “high school” OR “middle school”)

AND

Black* OR (African American or African-American or Jamaican or Haitian or Nigerian or Ethiopian or Somalian or Caribbean or Afro-Latin* or African diaspora)

AND

TI(neighbourhood* or neighborhood* or community or “public housing” or “social environment” or census* or “socioeconomic disadvantage” or “built environment” or zip-code or “zip code” or “subjective appraisal” or “objective indicator” or “social organization” or “structural characteristics” or “structural environment”) OR AB (neighbourhood* or neighborhood* or community or “public housing” or “social environment” or census* or “socioeconomic disadvantage” or “built environment” or zip-code or “zip code” or “subjective appraisal” or “objective indicator” or “social organization” or “structural characteristics” or “structural environment”) OR DE “Neighborhoods” OR DE "Social Environments" OR DE "Communities"

AND

TI(“mental health” or “mental illness” or “mental disorder” or “psychiatric illness” or “psychiatric disorder” or “mood disorder” or “bipolar disorder” or PTSD or “post-traumatic stress” or “post traumatic stress” or “posttraumatic stress” or suicid* or self-harm or depression or depressive* or anger or aggression or “conduct disorder” or “psychotic disorder” or “attention deficit hyperactivity disorder” or “attention-deficit hyperactivity disorder” or “attention deficit disorder” or “attention-deficit disorder” or ADHD or “psychological distress” or hopeless* or wellbeing or well-being or “behavioral health”) OR AB(“mental health” or “mental illness” or “mental disorder” or “psychiatric illness” or “psychiatric disorder” or “mood disorder” or “bipolar disorder” or PTSD or “post-traumatic stress” or “post traumatic stress” or “posttraumatic stress” or suicid* or self-harm or depression or depressive* or anger or aggression or “conduct disorder” or “psychotic disorder” or “attention deficit hyperactivity disorder” or “attention-deficit hyperactivity disorder” or “attention deficit disorder” or “attention-deficit disorder” or ADHD or “psychological distress” or hopeless* or wellbeing or well-being or “behavioral health”) OR DE “Mental Disorders” OR DE "Mental Health"

**PubMed with title/abstract and MeSH** (318 results)

AND


AND


AND


Scopus (2,777 Results) title, abstract, and keywords (8.20.21)

( TITLE-ABS-KEY ( youth OR teen OR teenager* OR adolescent OR adolescence OR {young people} OR "high school*" OR "middle school*" ) AND TITLE-ABS-KEY ( neighbourhood* OR neighborhood* OR communit* OR {public housing} OR {social environment} OR census OR {socioeconomic disadvantage} OR {built environment} OR zip-code OR {zip code} OR {subjective appraisal} OR {objective indicator} OR {social organization} OR {structural characteristics} OR {structural environment} ) ) AND TITLE-ABS-KEY ( {mental health} OR "mental illness" OR "mental disorder" OR "psychiatric illness" OR "psychiatric disorder" OR "mood disorder" OR "bipolar disorder" OR ptsd OR {post-traumatic stress} OR {post traumatic stress} OR {posttraumatic stress} OR suicide OR suicidality OR suicidal OR self-harm OR depression OR depressive OR anger OR aggression OR {conduct disorder} OR {psychotic disorder} OR {attention deficit hyperactivity disorder} OR {attention-deficit hyperactivity disorder} OR {attention deficit disorder} OR {attention-deficit disorder} OR adhd OR {psychological
distress} OR hopeless OR hopelessness OR wellbeing OR well-being OR {behavioral health} ) AND TITLE-ABS-KEY ( black* OR "African American*" OR African-American* OR "Black American*" OR Caribbean* OR Jamaican* OR Haitian* OR Nigerian* OR Ethiopian* OR Somali* OR afro-latin OR {African diaspora} )

Social service abstracts (117 results) Using command line: title, abstract, thesaurus

AB(Youth OR adolescents OR teen OR teenager OR "high school" OR "middle school" OR young people ) OR TI(Youth OR adolescents OR teen OR teenager OR "high school" OR "middle school" OR young people ) OR MAINSUBJECT.EXACT("Adolescents")

AND

MAINSUBJECT.EXACT("Blacks") OR MAINSUBJECT.EXACT("Black Americans") OR ( African AND American OR African-American OR black AND American OR Jamaican OR Haitian OR Nigerian OR Ethiopian OR Somali OR Afro-Latino OR Afro-Latina OR Afro-Latine OR African AND diaspora OR Caribbean )

AND

AB( Neighborhoods OR neighbourhood OR "Neighborhood change" OR "built environment" OR "social environment" community OR "public housing" OR census OR "socioeconomic disadvantage" OR zip-code OR "zip code" OR "subjective appraisal" OR "objective indicator" OR "social organization" OR "structural characteristics" OR "structural environment") OR TI(Neighborhoods OR neighbourhood OR "Neighborhood change" OR "built environment" OR "social environment" community OR "public housing" OR census OR "socioeconomic disadvantage" OR zip-code OR "zip code" OR "subjective appraisal" OR "objective indicator" OR "social organization" OR "structural characteristics" OR "structural environment") OR MAINSUBJECT.EXACT("Neighborhoods")

AND

AB( "mental health" OR "mental illness" OR "mental disorder" OR "psychiatric illness" OR "psychiatric disorder" OR "mood disorder" OR "bipolar disorder" OR ptsd OR "post-traumatic stress" OR "post traumatic stress" OR "posttraumatic stress" OR suicide OR suicidality OR suicidal OR self-harm OR depression OR depressive OR anger OR aggression OR "conduct disorder" OR "psychotic disorder" OR "attention deficit hyperactivity disorder" OR "attention-deficit hyperactivity disorder" OR "attention deficit disorder" OR "attention-deficit hyperactivity disorder" OR "attention deficit disorder" OR adhd OR "psychological distress" OR hopeless OR hopelessness OR wellbeing OR well-being OR "behavioral health") OR TI( "mental health" OR "mental illness" OR "mental disorder" OR "psychiatric illness" OR "psychiatric disorder" OR "mood disorder" OR "bipolar disorder" OR ptsd OR "post-traumatic stress" OR "post traumatic stress" OR "posttraumatic stress" OR suicide OR suicidality OR suicidal OR self-harm OR depression OR depressive OR anger OR aggression OR "conduct disorder" OR "psychotic disorder" OR "attention deficit hyperactivity disorder" OR "attention-deficit hyperactivity disorder" OR "attention deficit disorder" OR

144
"attention-deficit disorder" OR adhd OR "psychological distress" OR hopeless OR hopelessness OR wellbeing OR well-being OR "behavioral health") OR MAINSUBJECT.EXACT("Mental Illness")

**Sociological Abstracts (211 results)** *Using command line: title, abstract, thesaurus*

AB(Youth OR adolescents OR teen OR teenager OR "high school" OR "middle school" OR young people ) OR TI(Youth OR adolescents OR teen OR teenager OR "high school" OR "middle school" OR young people ) OR MAINSUBJECT.EXACT("Adolescents")

AND

MAINSUBJECT.EXACT("Blacks") OR MAINSUBJECT.EXACT("Black Americans") OR ( African AND American OR African-American OR black AND American OR Jamaican OR Haitian OR Nigerian OR Ethiopian OR Somalian OR Afro-Latino OR Afro-Latina OR Afro-Latino OR afro-latine OR African AND diaspora OR Caribbean )

AND

AB( Neighborhoods OR neighbourhood OR "Neighborhood change" OR "built environment" OR "social environment" community OR "public housing" OR census OR "socioeconomic disadvantage" OR zip-code OR "zip code" OR "subjective appraisal" OR "objective indicator" OR "social organization" OR "structural characteristics" OR "structural environment") OR TI(Neighborhoods OR neighbourhood OR "Neighborhood change" OR "built environment" OR "social environment" community OR "public housing" OR census OR "socioeconomic disadvantage" OR zip-code OR "zip code" OR "subjective appraisal" OR "objective indicator" OR "social organization" OR "structural characteristics" OR "structural environment") OR MAINSUBJECT.EXACT("Neighborhoods")

AND

AB( "mental health" OR "mental illness" OR "mental disorder" OR "psychiatric illness" OR "psychiatric disorder" OR "mood disorder" OR "bipolar disorder" OR ptsd OR "post-traumatic stress" OR "post traumatic stress" OR "posttraumatic stress" OR suicide OR suicidality OR suicidal OR self-harm OR depression OR depressive OR anger OR aggression OR "conduct disorder" OR "psychotic disorder" OR "attention deficit hyperactivity disorder" OR "attention-deficit hyperactivity disorder" OR "attention deficit disorder" OR "attention-deficit disorder" OR adhd OR "psychological distress" OR hopeless OR hopelessness OR wellbeing OR well-being OR "behavioral health") OR TI(" mental health" OR "mental illness" OR "mental disorder" OR "psychiatric illness" OR "psychiatric disorder" OR "mood disorder" OR "bipolar disorder" OR ptsd OR "post-traumatic stress" OR "post traumatic stress" OR "posttraumatic stress" OR suicide OR suicidality OR suicidal OR self-harm OR depression OR depressive OR anger OR aggression OR "conduct disorder" OR "psychotic disorder" OR "attention deficit hyperactivity disorder" OR "attention-deficit hyperactivity disorder" OR "attention deficit disorder" OR "attention deficit disorder" OR "attention-deficit disorder" OR adhd OR "psychological distress" OR hopeless OR hopelessness...
OR wellbeing OR well-being OR "behavioral health") OR MAINSUBJECT.EXACT("Mental Illness")

**Social Work Abstracts (54 results) no specified fields**

adolescen* OR TI(youth* OR adolescen* OR “young people” OR teen* OR “high school” OR “middle school”)

AND

Black* OR (African American or African-American or Jamaican or Haitian or Nigerian or Ethiopian or Somalian or Caribbean or afro-latin* or African diaspora)

AND

neighbourhood* or neighborhood* or community or “public housing” or “social environment” or census* or “socioeconomic disadvantage” or “built environment” or zip-code or “zip code” or “subjective appraisal” or “objective indicator” or “social organization” or “structural characteristics” or “structural environment”

AND

“mental health” or “mental illness” or “mental disorder” or “psychiatric illness” or “psychiatric disorder” or “mood disorder” or “bipolar disorder” or PTSD or “post-traumatic stress” or “post traumatic stress” or “posttraumatic stress” or suicid* or self-harm or depression or depressive* or anger or aggression or “conduct disorder” or “psychotic disorder” or “attention deficit hyperactivity disorder” or “attention-deficit hyperactivity disorder” or “attention deficit disorder” or “attention-deficit disorder” or ADHD or “psychological distress” or hopeless* or well-being or “behavioral health”

**ERIC (509 results) title and abstract (no filter for Black)**

(adolescen* OR TI(youth* OR adolescen* OR “young people” OR teen* OR “high school” OR “middle school”)) OR AB(youth* OR adolescen* OR “young people” OR teen* OR “high school” OR “middle school”)

AND

Black* OR (African American or African-American or Jamaican or Haitian or Nigerian or Ethiopian or Somalian or Caribbean or afro-latin* or African diaspora or Caribbean)

AND

TI(neighbourhood* or neighborhood* or community or “public housing” or “social environment” or census* or “socioeconomic disadvantage” or “built environment” or zip-code or “zip code” or “subjective appraisal” or “objective indicator” or “social organization” or
“structural characteristics” or “structural environment”) OR AB (neighbourhood* or neighborhood* or community or “public housing” or “social environment” or census* or “socioeconomic disadvantage” or “built environment” or zip-code or “zip code” or “subjective appraisal” or “objective indicator” or “social organization” or “structural characteristics” or “structural environment”) OR DE “Neighborhoods” OR DE "Social Environments" OR DE "Communities"

AND

TI(“mental health” or “mental illness” or “mental disorder” or “psychiatric illness” or “psychiatric disorder” or “mood disorder” or “bipolar disorder” or PTSD or “post-traumatic stress” or “post traumatic stress” or “posttraumatic stress” or suicid* or self-harm or depression or depressive* or anger or aggression or “conduct disorder” or “psychotic disorder” or “attention deficit hyperactivity disorder” or “attention-deficit hyperactivity disorder” or “attention deficit disorder” or “attention-deficit disorder” or ADHD or “psychological distress” or hopeless* or wellbeing or well-being or “behavioral health”) OR AB(“mental health” or “mental illness” or “mental disorder” or “psychiatric illness” or “psychiatric disorder” or “mood disorder” or “bipolar disorder” or PTSD or “post-traumatic stress” or “post traumatic stress” or “posttraumatic stress” or suicid* or self-harm or depression or depressive* or anger or aggression or “conduct disorder” or “psychotic disorder” or “attention deficit hyperactivity disorder” or “attention-deficit hyperactivity disorder” or “attention deficit disorder” or “attention-deficit disorder” or ADHD or “psychological distress” or hopeless* or wellbeing or well-being or “behavioral health”) OR DE “Mental Disorders” OR DE "Mental Health"
### APPENDIX B: STUDY EXTRACTION FORM

<table>
<thead>
<tr>
<th>Citation</th>
<th>Research question, hypotheses, or aim</th>
<th>Sample (size and age)</th>
<th>Ethnic/Racial demographics</th>
<th>Location</th>
<th>Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Design</td>
<td>Study Design</td>
<td>Neighborhood Environment Predictor (Aspect, measure, operationalization)</td>
<td>Mental Health Outcome</td>
<td>Control Variables</td>
<td>Analyses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Citation</th>
<th>Research question, hypotheses, or aim</th>
<th>Sample (size and age)</th>
<th>Ethnic/Racial demographics</th>
<th>Location</th>
<th>Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Design</td>
<td>Study Design</td>
<td>Neighborhood Environment Predictor (Aspect, measure, operationalization)</td>
<td>Mental Health Outcome</td>
<td>Control Variables</td>
<td>Analyses</td>
</tr>
</tbody>
</table>