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Profiles of Protective Factors in Urban African American Youth Exposed to Community Violence: A Prospective Study of Resilience

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LOYOLA UNIVERSITY CHICAGO

PROFILES OF PROTECTIVE FACTORS IN URBAN AFRICAN AMERICAN
YOUTH EXPOSED TO COMMUNITY VIOLENCE: A PROSPECTIVE
STUDY OF RESILIENCE

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

PROGRAM IN CLINICAL PSYCHOLOGY

BY

DEVIN C. CAREY

CHICAGO, IL

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ABSTRACT

The broad purpose of the study was to investigate the relationship between exposure to community violence and adjustment in an urban sample of African American youth living in Chicago. After years of research on community violence, there has been a call to understand the influences of all levels and systems on child adjustment, as well as to use research to promote positive outcomes and prevention of future violence (Aisenberg & Herrenkohl, 2008). With this in mind, this project used latent profile analysis to create profiles of protection based on individual, family, peer, and community factors, as well as evaluate the extent to which these factors interact to contribute to the adjustment, both cross-sectionally and longitudinally, in youth exposed to community violence. The current study was conducted using an archival dataset of a larger longitudinal study (Project on Human Development in Chicago Neighborhoods) examining on exposure to community violence, and what contributes to it, as well as the effects of exposure.

Results suggested a 2-class solution of protective factors best described the African American participants in the study. The largest class (75.51% of the sample) was characterized by higher levels across most protective factors and was labeled as “Higher Protection.” The second class was labeled as “Lower Protection,” and was characterized by lower levels of protective factors, especially the factors of Emotion Regulation, Parental Monitoring, and Family Cohesion. While the Higher Protection class had lower

levels of internalizing and externalizing symptoms, as reported by parents, at Wave 1, class membership did not significantly predict to differences in parent-reported internalizing or externalizing symptoms or PTSD symptoms at Waves 2 and 3. While this was contrary to expectations, class membership did significantly predict youth-reported internalizing and externalizing symptoms at Wave 2, with the Higher Protection group having lower levels of symptoms. Finally, moderation analyses revealed several significant interactions between class membership and both victimization and witnessing community violence predicting outcomes, suggesting that profiles found in this study were important in understanding resilience in this population. The implications of these findings and how they can serve as a guide to future research and intervention are discussed.

CHAPTER ONE

INTRODUCTION

Many African American youth growing up in Chicago are exposed to numerous stressors that are associated with their urban environments. Factors such as poverty, crime, and exposure to community violence have strong detrimental effects on these youth as they develop. A review of the research, particularly violence exposure, associates these factors with negative outcomes such as substance abuse, delinquency, school failure, and mental health problems (Fowler Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009). Because of these outcomes, much of the community violence research has been based in a deficit-centered model (Aisenberg & Herrenkohl, 2008). In this way, researchers have concentrated on the risk factors that are associated with increased likelihood of violence exposure and the associated negative outcomes (Dalton, Elias, & Wandersman, 2007). Although these factors are certainly important, not all youth develop adjustment difficulties after exposure to community violence (Overstreet & Mazza, 2003). Accordingly, it is necessary for researchers to focus on the strengths of urban youth and families, as well as their communities, to understand what increases the capacity to adapt successfully, and function competently (Dalton, Elias, & Wandersman, 2007). An appreciation for protective processes and resilience in the research provides a more comprehensive picture of what is actually occurring in youth development, and has

implications for both researchers and mental health professionals focusing on prevention work and protection of youth from future community violence exposure.

Researchers have used a variety of methods and strategies to explore the relationship between exposure to community violence and adjustment in childhood. Namely, they have established links between violence exposure and the development of post-traumatic stress disorder, internalizing psychopathology, externalizing problems, and other types of maladjustment, such as substance use, impaired social relationships, and poor academic performance (for a review, see Fowler, et al., 2009). While the consequences of violence exposure appear to depend on several factors (such as the persistency and type of violence, individual child characteristics, and family processes) research has demonstrated most youth exposed to community violence experience negative consequences. Yet, despite the concentration in the literature on these harmful effects of violence exposure, certain youth are more resilient. Several hypotheses have been put forth to help explain the reason for differences in adjustment, including coping strategies, adaptation to violence, social support, or desensitization (Garbarino, 2001; Griffith, Dubow, & Ippolito, 2000; Hammack, Richards, Luo, Edlynn, & Roy, 2004; Ng-Mak, Salzinger, Feldman, & Stueve, 2004), it is clear that both risk and protective factors are important to understand when examining the consequences of community violence.

After years of research on community violence, we still have many questions and intervention programs continue to be largely ineffective. Therefore, in order to reduce the gap between research and practice, the influences of all levels and systems need to be assessed (Aisenberg & Herrenkohl, 2008). Thus, the purpose of this study is to examine

factors across ecological levels to create distinct profiles of protection of urban African American youth. A second aim is to understand how youth with these specific protective profiles differ in their adjustment, both cross-sectionally and longitudinally, depending on their community violence exposure. This research will lead to greater understanding of the development of youth exposed to community violence, with a focus on factors that promote resilience and positive well-being, which will allow for mental health providers, public health officials, and others to use such research for the promotion of positive outcomes and prevention of future violence (Aisenberg & Herrenkohl, 2008).

Latent profile analysis will allow for a classification of youth on selection of individual, family, school, and peer variables into groups of similar clusters of risk and protection. While this type of person-centered analysis has been used infrequently in the community violence literature, it provides important information in understanding how risk and protective factors work together in the “real world” to affect child adjustment and mental health (Copeland-Linder, Lambert, & Ialongo, 2010). Specifically, this analysis discriminates classes of individuals based on characteristics that are similar within a cluster and that are different from individuals in other clusters, resulting in groups of youth high on protective factors across several ecological levels, as well as groups of youth with varying combinations of risk and protection levels across the same domains (Valdez, Lambert, & Ialongo, 2011).

In order to understand how the risk of community violence exposure may affect youth differentially, the specific protective factors to be examined in this study will include measures across individual, family, peer, and community levels of analysis. It is

hypothesized that several groups will emerge from the profile analysis, including “risky” groups (lower on protective factors) and “protected” groups (higher on protective factors). Moreover, it is expected that certain groups of youth will differ on their outcomes based on their specific profiles, such that youth with fewer protective factors at Wave 1 (W1) are expected to be less adjusted overall at Wave 2 (W2) and Wave 3 (W3), as measured by higher scores on ratings of internalizing symptoms, externalizing symptoms, and post-traumatic stress symptoms. Youth in the “protected” groups will have lower ratings of all of these symptoms. Furthermore, the relationship between these profiles and outcomes will be moderated by exposure to violence, such that higher exposure to violence will lead to more negative outcomes, especially for the less protected groups.

The current study will be conducted using the Project on Human Development in Chicago Neighborhoods (PHDCN), a longitudinal study collected over seven years from a sample of children, adolescents, and their primary caregivers. This dataset is unique in both its depth and breadth of understanding adjustment in urban youth, and will allow for an examination of the research questions of interest that would not be possible with smaller or more limited datasets. As mentioned above, individual, family, peer, and community questionnaires will be used as measures of risk and protective factors, and adjustment will be examined with measures of child behavior that include assessment of internalizing and externalizing disorders, and post-traumatic stress symptoms.

The following sections will include a review of the current literature pertaining to the hypotheses of this study. Specifically, the literature review will present an overview

of the theoretical model, review of the research on risk, protection, and resilience, and person-centered approaches. Furthermore, methods are discussed, including descriptions of the data collection process and measures used. Data analytic procedures that address the hypotheses of this study are explained. Finally, results are reported and conclusions, clinical implications, and future directions are discussed.

CHAPTER TWO

REVIEW OF RELEVANT LITERATURE

Theoretical Model

The theoretical models that inform the study include ecological theory and the developmental psychopathology perspective. Much of the research on risk and resilience has utilized approaches that have examined relationships between individual-level variables. However, this method fails to capture the complexity of youth development, as violence in the community not only affects individuals, it also influences their families, their peers, their schools, and their neighborhoods, these factors need to be recognized within context. In the same way, the concepts of risk and resilience are complex, and incorporate both individual and contextual factors (Fraser, 2004).

The ecological perspective stems from Bronfenbrenner's (1979) original ecological model, and has been extended to community violence by other researchers (e.g., Cicchetti & Lynch, 1993; Overstreet & Mazza, 2003). In this model, children's adjustment is understood as affected by the influences of the microsystem (family environment), mesosystem (interactions between the family and child development settings, such as the school), exosystem (indirect and direct community-level influences on the child), and macrosystem (larger social, economic, and political systems) (Bronfenbrenner, 1979). How those systems relate to one another, and how the child perceives those relationships, is what determines the developmental course and outcome.

Moreover, these influences do not exist independently, but interact with each other throughout a child's development. In this way, this model recognizes that risk and protective factors within each subsystem may affect children's development. For example, when these factors are stressful, youth are at greater risk, but when factors are supportive, they facilitate positive adjustment (Harden & Koblinsky, 1999).

Building on Bronfenbrenner's theory, Cicchetti (1989) and others (Sroufe & Rutter, 1984) have used a developmental psychopathology framework in their research. Developmental psychopathology is an integrative study of pathways that lead to typical and atypical development. Like ecological systems, this approach emphasizes context and the complex and dynamic interplay of many different factors within contexts that interact throughout development to produce adaptive or maladaptive outcomes (Mash & Dozois, 2003). With this, there is recognition that individuals are active and influential in their own development, such that youth both react to and elicit specific responses from their different ecological systems (Sameroff, 2009). Other important aspects of this perspective include a focus on the concepts of equifinality and multifinality, as well as adaptive and maladaptive behavior (Cicchetti & Rogosch, 2002). Developmental psychopathology researchers emphasize that because development is so dynamic, we must understand not only how behaviors predict to outcomes, but also how specific variations in positive and negative adjustment occur over time (Coatsworth, 2010).

As one can see, individual, family, peer, and neighborhood factors are all important to consider when examining the effects of community violence exposure on adjustment (Aisenberg & Herrnkohl, 2008). Several researchers have adapted an

ecological-developmental psychopathology perspective to examine the effects of community violence exposure. Cicchetti and Lynch (1993) proposed an ecological-transactional model in which they differentiate between transient and enduring risk and protective factors. While the former refer to factors that tend to be more temporary, shifting over time, the latter refer to factors that are more enduring and/or chronic (Lynch & Cicchetti, 1998). Moreover, both of these types of factors may be more proximal or distal to the child. In this way, a child with more transient and distal risk factors will likely have better outcomes than a child with enduring, proximal risks. Community violence is thought to be a risk factor that occurs in the exosystem (Lynch and Cicchetti, 1998), unless a child directly experiences that violence, through victimization or witnessing, which then places the risk more closely to the child, in the microsystem.

In their review of variables that both predict to and result from community violence exposure, Salzinger and colleagues (2002) emphasize the importance of using an ecological-transactional approach to understand both exposure to community violence and its outcomes. The authors conclude that our current knowledge is limited by failing to take into account the context of community violence exposure in sampling, instruments, and analysis. In this way, they call for future research to examine adjustment within multiple ecological levels and across developmental periods in order to maximize the efficacy of intervention and prevention efforts (Salzinger, Feldman, Ng-Mak, Mojica, Stockhammer, & Rosario, 2002).

Thus, building from this brief review and the recommendations by Salzinger and colleagues (2002), both the ecological systems and developmental psychopathology

models will inform the design of this study in the following ways. First, the study will examine variables across several ecological systems to create distinct profiles, in order to capture the idea that youth are multiply affected by several factors, both within and outside of themselves. Next, this study will focus on children and adolescents, with an understanding that as children grow older, they increasingly interact with and are influenced by a greater number of biological, psychological, and social systems (Cicchetti & Rogosch, 2002). Moreover, individuals moving from childhood to adolescence play a more active role in their development, and this period is seen as an important developmental transition in the life course (Cicchetti & Rogosch, 2002; Coatsworth, 2010). Third, this study will utilize prospective longitudinal design. This type of design is advantageous over cross-sectional or retrospective studies for several reasons, including a greater understanding of causality and an appreciation of development and developmental changes over time (Cicchetti & Rogosch, 2002). Furthermore, a longitudinal design is especially useful in evaluating the effect of the various systems on the transition period of adolescence. Finally, because both theoretical models emphasize the importance of positive adjustment and competence, this study will take a strengths-based approach to resilience. That is to say, even youth who are considered high risk, such as those exposed to community violence, have the capacity to change and adapt (Garbarino, 1992). This study aims to not only identify the specific factors and processes that lead to psychopathology, but it also aims to identify those that result in good developmental outcomes.

Risk, Protection, and Resilience

Risk and risk factors. Risk factors are defined as influences that increase the probability of negative outcomes for children or adolescents. These risks may be at the individual level (e.g., low IQ) or within the family (e.g., low parental involvement). Additionally, there are social risk factors, such as social rejection, and community risk factors, such as low levels of community participation (Resnick et al., 2004). While some risks (e.g., natural disasters) may occur on their own, other risks are more interrelated and may co-occur (e.g., poverty and stress) or build upon each other. Finally, the negative effects of risk are considered to be cumulative, in that the more risks an individual is exposed to, the greater their likelihood of a negative outcome (Coie et al., 1993; Masten & Powell, 2003).

As previously mentioned, a variety of risks are associated with living in the inner-city neighborhoods, such as poverty and chronic hassles (Li, Nussbaum, and Richards, 2007). While many of these risk factors have been studied in past research and shown to be relevant in predicting youth outcomes, this study will focus on exposure to violence, through both witnessing violence and direct victimization, as the main risk factor of interest. Although the concept of cumulative risk and the measurement of risk factors through aggregation has its strengths, comprehensive cumulative risk approaches may prevent researchers from clearly understanding how a specific risk factor influences outcomes (Masten & Powell, 2003). Understanding how community violence exposure interacts with a variety of protective factors and predicts to different areas of adjustment

will allow this study to clarify unique effects of this risk and more strongly inform intervention and prevention work (Lynch, 2003).

This approach to understanding risk is necessary because children's exposure to community violence has become a major public health problem in the United States (Finkelhor, Turner, Ormod, Hamby, & Kracke, 2009) and significantly predicts to negative outcomes, even when controlling for other stressors and risk factors (Gorman-Smith & Tolan, 1998). This risk has been characterized as occurring through both witnessing violence and violent victimization, with some statistics reporting that 60-70% of inner city children have been victimized by at least one violent act and 80-90% have witnessed violence in their community (Bender & Roberts, 2009).

Although many variables are associated with exposure to community violence, minority children living in low-income, inner-city neighborhoods are most significantly affected (Stein, Jaycox, Kataoka, Rhodes, & Vestal, 2003) and are repeatedly and chronically exposed due to the pervasive amounts of violence occurring in their neighborhoods (Richters & Martinez, 1993). Furthermore, African American youth appear are at greatest risk, as they experience more community violence than Latino, Asian and Caucasian youth (Cooley-Strickland, Quille, Griffin, Stuart, Bradshaw, & Furr-Holden, 2009; Fowler et al., 2009; Malk et al., 1997; Selner-O'Hagan et al., 1998), even when the effects of socioeconomic status are considered (Crouch, Hanson, Saunders, Kilpatrick, & Resnick, 2000). They also have the highest rates of victimization when compared to all other races (Bureau of Justice Statistics, 2007). Moreover, the violence experienced by these children is often severe. For example, Bell & Jenkins

(1993) surveyed elementary school children in Chicago and found that three out of four children had witnessed a robbery, stabbing, shooting or killing. As the research reveals a disproportionate risk of community violence exposure for African American youth, the current study will focus on this population.

Regarding gender differences in community violence exposure, many studies have found that males are exposed to more community violence than females (Cooley-Quille, Boyd, Frantz, & Walsh, 2001), across both victimization (Bell & Jenkins, 1993) and witnessing (Selner-Hagan et al., 1998). While the reason for this increased exposure for males is not completely understood, it could be explained by their social expectations, opportunities (Fraser, Kirby, & Smokowski, 2004) or susceptibility to aggressive behavior (Loeber et al., 2013). Furthermore, the higher levels of community violence exposure reported in males has resulted in some researchers classifying male gender as a risk factor (Fraser, Kirby, & Smokowski, 2004). Thus, in the current study, gender differences will be examined between the profile groups in order to more fully elucidate its role in risk and protection.

Psychological sequelae of community violence exposure. In addition to the obvious threats to a child's physical and mental health, repeated exposure to violence, especially over time, as is seen in inner city neighborhoods, may alter a child's developmental trajectories and result in negative outcomes across several domains. In this way, violence may alter children's views of the world and of themselves, not only shifting their perceptions about the meaning and purpose of life, but also their expectations for future happiness (Garbarino, Kostelny, & Dubow, 1991). Past

researchers have documented comprehensively these negative effects on youth development, leading to increased vulnerability across several domains and will be reviewed below.

Externalizing symptoms have a relatively well-established association with exposure to violence in the literature (Fowler et al., 2009), as longitudinal studies have found that exposure to violence is related to increased antisocial behavior (Miller, Wasserman, Neugebauer, Gorman-Smith, & Kamboukos, 1999), aggression (Gorman-Smith, Henry, & Tolan, 1998), and violent behavior (Farrell & Bruce, 1997), even when controlling for prior levels of these problems. Interestingly, externalizing behaviors may develop even when exposed to low levels of violence (Bradshaw, Rodgers, Ghandour, & Garbarino, 2009). It is theorized that social learning, in which children exposed to violence observe and then imitate violent behavior, can account for the relation between exposure to violence and the later development of externalizing disorders (Dodge, Lochman, Harnish, Bates, & Pettit, 1997). In addition, externalizing behavior may put children at greater risk for more exposure to violence (Lynch & Cicchetti, 1998). In other words, there may be a bidirectional relationship between externalizing behavior and exposure to community violence. However, all of these relationships need to be studied in greater depth.

Internalizing symptoms, such as depression and anxiety have been indicated, yet less consistently than externalizing disorders (Fowler et al., 2009; Gorman-Smith, Henry, & Tolan, 1998; Kliewer, Lepore, Oskin, & Johnson, 1998; Lynch & Cicchetti, 1993). Some researchers have found that the development of internalizing symptoms depends on

whether the child witnessed or is victimized by violence. For example, Fitzpatrick and Boldizar (1993) found that violent victimization, but not witnessing violence, predicted depression in African American youth. Other authors have theorized that the differential outcomes may depend on the gender of the child, such that girls exhibit more internalizing symptoms than boys as a result of violence exposure (Gorman-Smith, Henry, & Tolan, 1998; McGee, 2003). Furthermore, it is possible that other factors, such as a child's ability to cope (Edlynn, Miller, Gaylord-Harden, & Richards, 2008; McGee, 2003), social support (Hammack, et al., 2004), or the level and severity of violence exposure (Lynch & Cicchetti, 1998), may influence whether or not a child develops internalizing symptoms.

However, the most powerful associations with violence exposure are seen in the form of post-traumatic stress symptoms (PTSS; Fowler et al., 2009). These symptoms include sleep disturbances, irritability, hypervigilance, heightened startle responses, and flashbacks of the original trauma (Osofsky, 1995). Even when children do not meet the full criteria for post-traumatic stress disorder (PTSD), youth may demonstrate other negative responses related to their trauma that result in deleterious effects on their social-emotional development, such as intrusive thoughts of violence experiences, threats of danger, avoidance of outside areas, separation anxiety, and anger (Foster, Kuperminc, & Price, 2003; Ortiz, Richards, Kohl, & Zaddach, 2008; Overstreet & Braun, 2000). Researchers have linked these symptoms not only to encountering personal trauma, as is seen in children who are victimized by community violence, but also the constant

feelings of helplessness and fear for safety that children living in violent neighborhoods continuously experience (Fowler et al., 2009).

From this review, many children and adolescents exposed to community violence experience both emotional and behavioral symptoms, which are all important to consider. However, our knowledge of outcomes is limited both by researchers failing to recognize the heterogeneity of their samples (beyond age and ethnicity), as well as the fact that many studies focus only on one area of adjustment. This study will address these limitations by using a person-centered analysis to create several distinct groups and then examine the adjustment of these groups, across several outcomes, including internalizing disorders, externalizing disorders, and post-traumatic stress disorder.

Protection and protective factors. Yet, despite exposure to community violence and other risks, some youth in urban, low-income communities do not develop negative outcomes. Researchers have characterized youth who achieve positive adaptation despite these significant risk factors as resilient (Luthar, Cicchetti, & Becker, 2000). The concept of resilience has been debated in the literature, with critics proposing that definitions have been ambiguous and the construct itself has limited clinical or research value (Tolan, 1993). However, it is now accepted that resilience is not simply an all or nothing trait, but a process that results when the individual interacts with his or her environment. That is, when risk factors interact with protective factors within an individual and maladjustment does not occur, we call that resilience. In this way, research on resilience requires examination of the interaction of multiple factors over time (Rutter, 2012).

In contrast to risk factors, protective factors are influences, characteristics, or conditions that either buffer or less the affect of an individual's exposure to risk (Jenson & Fraser, 2006). While risk factors have been clearly defined, the concept of protection is less well-established due to difficulties in conceptualization. Initially, researchers characterized risk and protection as similar constructs at the opposite end of the spectrum. For example, while deviant peers were thought of as a risk factor, positive peer influences were seen as protective. While there is some usefulness to think about risk and protection in this way, it fails to appreciate the interactive nature between the individual and the environment. In this way, protective factors are best considered conceptually different than the converse of risk factors (Rutter, 2000).

Finally, it is important to note that all protective factors do not work in the same way. The effects of some protective factors may vary based on gender, developmental stage, and/or ethnicity (Fraser, Kirby, & Smokowski, 2004). Furthermore, while some protective factors are more universal, others may interact differently depending on the specific risk factor. Nonetheless, several protective factors have been identified in the literature and will be reviewed below, with a focus on protective factors for African American youth exposed to community violence:

Individual protective factors. Individual protective factors are those that are considered to be personal attributes of the child (Luthar, 1991). Past research has demonstrated that a variety of factors such as cognitive abilities, locus of control, social competence, ethnic identity, easy temperament, and coping skills all are important for protecting a child against risk (Coie et al., 1993).

Across a wide range of risk factors, good self-regulation has been established as a robust indicator for positive development. Self-regulation is an aspect of temperament that includes the child's ability to control himself or herself in a variety of areas, including emotional and behavioral responses. From a young age, children who are described as having a difficult temperament, often seen as an indicator of poor self-regulation, are shown to have more trouble with coping with stress. As children develop, the regulation of emotions and behavior in response to a variety of stressors has been shown to be necessary for mental health and adjustment throughout the lifespan (Southam-Gerow & Kendall, 2002), making them both important factors to examine in respect with the risk of community violence exposure (Buckner, Mezzacappa, & Beardslee, 2003; Kliewer et al., 2004; Silk, Shaw, Forbes, Lane, & Kovacs, 2006).

It is thought that youth with well-developed emotion regulation skills are better able to manage their negative affect and replace maladaptive responses with adaptive ones. Incompetencies in emotion regulation have been linked to social difficulties, behavior problems, and internalizing disorders (Katz, Hessler, & Annett, 2007; Eisenberg et al., 2001). For example, adolescents, who report more intensity and lability in their emotions, such as sadness and anger, have greater negative outcomes, such as depression and behavior problems (Larson, Raffaelli, Richards, Ham, & Jewell, 1990; Silk, Steinberg, & Morris, 2003). When considering this research with children who have been exposed to community violence, it follows that those who feel sad and are unable to normalize their mood may develop depressive symptoms and those who cannot appraise their own emotional states may not be able to respond emotionally to interactions, and

instead react physically, as with aggression (van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). Supporting this theory, youth aged 8 to 17 who were classified as “resilient” had better emotion regulatory abilities than children who were less resilient (Buckner et al., 2003). Additionally, in a study of African American youth exposed to violence and their families, emotion regulation skill of the child was found to be a protective factor, along with the caregiver’s emotion regulation skill and caregiver-child interaction (Cunningham, Kliwer, & Garner, 2009). Finally, among females only, Luthar, Cicchetti, and Becker (2000) found that appropriate emotion regulation serves as a protective stabilizing effect, which is one that results in sustaining competence despite increasing risk.

Sociability, or the desire to be with others, is another well-established protective factor for children exposed to risks. Because exposure to high levels of community violence can result in behavioral and emotional difficulties that significantly affect social relationships, these youths often demonstrate problems in connecting with their peers or interacting appropriately in social situations, as a result of feelings of uncertainty about themselves and their relationships with others (Lynch, 2003). Furthermore, community violence is associated with peer rejection and mistreatment (Schwartz & Proctor, 2000) and African Americans who live in low-income, inner-city neighborhoods may be exposed to more negative peer influences, leading to less positive social interactions (Mason, Cauce, Gonzales, & Hiraga, 1996). However, children who are rated sociable are more able to manage peer and other social relationships successfully, which is protective against negative outcomes such as delinquency and substance abuse (Fraser,

2004). In studies of resilient adolescents, prosocial skills predicted both positive behavior and social adjustment over time, suggesting that children exposed to stress may find that relationships with others provide a means for them to cope (Wyman, 2003).

Family protective factors. In examining protection in the family system, researchers have found that several different dimensions of family structure and functioning buffer children from the adverse outcomes of exposure to violence (Proctor, 2006). A review of the literature demonstrates that parental support (Bowen & Chapman, 1996; Jain, Buka, Subramanian, & Molnar, 2012; Kliwer et al., 1998), family cohesion (Gorman-Smith & Tolan, 1998; 2003), parental attachment (Lynch & Cicchetti, 1998), or simply the presence of a parent (Fitzpatrick & Boldizar, 1993; Overstreet & Braun, 1999) have all been recognized as related to community violence exposure and a wide-range of adjustment variables. It is thought that parental and family characteristics can help youth by providing both emotional and structural support and by serving as models of coping in high-risk communities (Wallen & Rubin, 1997). For example, Gorman-Smith and Tolan (1998) found level of organization and support within the family moderated the relation of both aggression and internalizing symptoms for those exposed to community violence. Other aspects of family functioning, such as positive parenting and emotional cohesion, protect youth from perpetrating violence after they are exposed (Gorman-Smith, Henry, & Tolan, 2004). Furthermore, another important way that families can protect children from negative outcomes is through parental monitoring (Brookmeyer, Henrich, & Schwab-Stone, 2005). Several studies have shown that parents who provide guidance to, communicate with, and supervise their children are able to protect them from some

negative effects of community violence (Bacchini, Miranda, & Affuso, 2011; Jarrett, 1999). However, other studies have shown that for certain groups of children (e.g., older males) living in high risk communities, and for certain types of violence exposure, parental monitoring and the protective nature of family factors against exposure to community violence is not enough to promote resilience in the long-term (O'Donnell, Schwab-Stone, & Muyeed, 2002; Richards, Miller, O'Donnell, Wasserman, & Colder, 2004).

Peer protective factors. One reason that family functioning as a protective factor has been equivocal in the literature may be that as youth grow older and mature into adolescence, they become more autonomous and spend less time with their families (O'Donnell, Schwab-Stone, & Muyeed, 2002), although for African American youth, this shift may be less pronounced and powerful (Larson, Richards, Sims, & Dworkin, 2001). In this way, peers have become an important variable to study in terms of protection. Both positive peer relationships and friend support have increased emotional resilience (Jain et al., 2012) in youth exposed to violence. Alternatively, some peer relationships are associated with more negative outcomes, such as academic underachievement, delinquency, and drug use (Clark, Belgrave, & Abel, 2012; Gonzales, Cauce, Friedman, & Mason, 1996). In terms of community violence exposure, research has shown that peer support appears to have a positive, but weak effect on resilience (O'Donnell et al., 2002). It is clear that peer relationships need to be further studied in terms of protection. This study will look at both positive aspects of peer relationships (e.g. peers who are good

citizens) and negative aspects of peer relationships (e.g. peers who have stolen things) to further clarify the protective nature of peer relationships.

Community protective factors. Other researchers have explained that the family and peer measures reviewed above are not strong enough to protect youth with high levels of risk in their communities (Hammack et al., 2004; Kliwer et al., 2004; Luthar & Goldstein, 2004; Sullivan, Kung, & Farrell, 2004), making it necessary to look beyond this system to neighborhood and community characteristics. While some environmental factors have been more difficult for researchers to measure, specific social processes in an individual's community have been linked to more positive youth development and protective from risk. These include the concepts such as social support, social cohesion, and social organization (i.e., participation in both formal and informal organizations) (Sheidow, Gorman-Smith, Tolan, & Henry, 2001). For example, children exposed to community violence who report feeling more supported by others in their community demonstrate more positive outcomes (Hammack et al., 2004). Thus, even the perception of a positive neighborhood seems to buffer the effects of risks, such as exposure to community violence, against negative outcomes (Li, Nussbaum, & Richards, 2007).

Collective efficacy has been defined as the degree to which members of a neighborhood share values, beliefs, and expectations, as well as the degree to which neighbors are willing to take action on behalf of each other (Sampson, 2001) as an important protective factor that encompasses many of these community social processes. Research using the Project on Human Development in Chicago Neighborhoods (Sampson et al., 1997) demonstrated that collective efficacy mediated the relationships between

neighborhood structural variables on neighborhood violence and neighborhood social disorder and crime (Sampson et al., 2001). Furthermore, lower levels of collective efficacy in the community are associated with antisocial and aggressive behavior among youth, such that those living in neighborhoods with more collective efficacy are less likely to engage in violence (Berg & Loeber, 2011; Maimon & Browning, 2010; Sampson, Morenoff, & Raudenbush, 2005)

Resilience. As demonstrated above, community violence puts youth at great risk for a variety of psychological sequelae. However, despite these risks, certain youth demonstrate positive adjustment or resilience (Garmezy, 1993). Resilience research shifts the focus on risk from vulnerability and pathology to the factors and processes that lead to good outcomes (Rutter, 2012).

The idea of resilience in psychology research was first applied by Werner (1984) to describe children in studies of schizophrenic families who appeared to be psychologically strong in the face of stress and adversity. Since that time, researchers interested in the concept have defined resilience in several ways and used a variety of approaches to understand how resilience develops in certain groups of children. One way in which resilience has been conceptualized is when youth achieve salient developmental tasks or competence criteria, as defined by their society or culture (Masten, 2001). Alternatively, other research has defined an individual as resilient when they do not develop any significant impairment or type of psychopathology (Masten, 2001). No matter how one defines the concept of resilience, it is important to understand that

resilience researchers strive not only to understand outcomes, but the processes that account for a good outcome in the face of risk (Masten, 2001).

While resilience has been conceptualized in multiple ways since Werner's work, the current accepted definition of resilience is a "relative resistance to environmental risk experiences, the overcoming of stress or adversity, or a relatively good outcome despite risk experiences (p. 34, Rutter, 2012)." In this way, resilience is thought to be a process that results from the interaction of risk and protective factors and requires that a child has experienced significant adversity. While resilience research builds on risk and protection research, in that in order to study the construct of resilience appropriately one needs to quantify measures of both risk and protection, Rutter argues that resilience is different from risk and protection alone, as resilience examines the influences of the heterogeneity found in individuals exposed to stress and adversity, while risk and protection focuses on group outcomes (Rutter, 2012).

Recently, there has been a push in research to understand resilience as a multidimensional construct (O'Donnell et al., 2002), integrating individual, peer, and family factors. In this way, O'Donnell and colleagues examined two risk indices (witnessing and victimization of violence) and three protective indices (parent support, peer support, and family support) used structural equation modeling to investigate whether there were distinct dimensions of resilience (future expectations, self-reliance, interpersonal relations, substance abuse, delinquency, depression/anxiety, and somatization). In their analysis, the authors examined the longitudinal relationship among resilience and protective factors in children who had witnessed and experienced

victimization by community violence, and in those who had no community violence exposure, finding that both parent and school support factors were significantly positively associated with resilience in children who had been exposed to community violence. Additionally, peer support was negatively associated with resilience for substance abuse and delinquency. These results were most robust among victimized children, followed by children who had witnessed violence.

In a longitudinal study done by Jain and colleagues (2012), the authors were interested in how a variety of the protective factors reviewed above were related to resilience in a sample of children and adolescents living in Chicago (Project on Human Development in Chicago Neighborhoods, the same dataset that will be used in the current study). Using a selection of the developmental assets set forth by the Search Institute (Scales & Leffert, 1999) the authors examined whether the protective factors of support (family support, friend support, other adult support), opportunities (time spent in structure activities per week), boundaries and expectations (positive peer influence, family boundaries and expectations), and collective efficacy (neighborhood-level cohesion and control) moderated the relationship between exposure to community violence and emotional resilience. In order to do this, the authors created three categorical groups based on the exposure to community violence data, resulting in non-exposed, witness, and victim groups. Then, using Generalized Estimating Equations (GEE), the authors examined whether these protective factors at baseline predicted to emotional resilience at Waves 2 and 3 in three groups. The authors found that supportive relationships and positive peers were strong predictors of resilience for all groups of children. However,

both family support and the effects of positive peers were less important over time for youth who were victims of community violence. When looking at time spent in structured activities, this protective factor was only significant for the unexposed group. Finally, while the authors found that collective efficacy was not significant at any single time point, it did influence an increase in emotional resilience over time, especially for the victimized group.

While this study had several strengths in attempting to understand how multiple protective factors are related to resilience over time in youth exposed to violence, it failed to examine protective factors or exposure to violence over time. Moreover, both their determination of protection and resilience seem to be limited in that their protective factors did not include any individual-level factors and resilience was limited to internalizing problems only. This current study will build on this research by examining both protective factors and exposure to community violence over time, as well as including additional variables in the conceptualization of both protective factors and resilience, using a person-centered approach.

Person-Centered Approaches

Much of the traditional research reviewed above, as well as much of research in child psychology has been carried out using variable-centered approaches. As one may expect from its name, these types of analyses focus in how variables relate. While this type of research has provided many meaningful conclusions, such as those that are reviewed above, there are several limitations that are inherent in this approach in studying

complex and dynamic organisms, such as children and adolescents (Mandara, 2003; Magnusson, 2001).

One of the biggest issues with the variable-centered approach is that while researchers are trying to make conclusions about people or groups, their analyses are truly only answering questions about the specific variables chosen. Another issue is that one must covary the same variables across all participants or groups (Mandara, 2003). While many researchers appropriately control for differences such as gender, socioeconomic status, or race, they still fail to account for many differences in group variation (Block, 2000). Finally, Mandara (2003) points out that by examining specific variables in research fails to account for the meaning of that variable in the system as a whole. For example, he states that by studying a singular family variable, such as cohesiveness, and how it relates to outcomes, one fails to understand the intricate and complex nature of the system in its context.

In response to these limitations, some researchers have moved toward more person-centered or typological approaches in understanding their questions. These types of approaches allow one to “identify, organize, and systematically describe naturally occurring behavioral patterns of people in such a way that the wholeness of people is retained (Mandara, 2003, p. 132).” In person-centered analyses, researchers are less interested in specific processes that lead to outcomes, as seen through mediation and moderation, but in patterns that occur in the real world (Masten, 2001). In regard to resilience research, a person-centered approach allows researchers to examine how risk and protective factors interact within different individuals and result in different

outcomes, which is necessary for prevention and intervention. In comparison to variable-centered approaches that draw conclusions based on the relationship between a specific risk and an outcome, this type of analysis typically examines individuals who have similar levels of risk or protective factors, but may have varied outcomes (Masten & Powell, 2003). A select review of research utilizing person-centered analyses follows:

Review of Research on Person-Centered Approaches

Several researchers have used person-centered approaches to examine risks across multiple domains to predict adolescent functioning. For example, using a nationally representative sample of adolescents, Parra, DuBois, and Sher (2006) measured both 7th and 11th grade students on multiple domains to determine specific risk profiles, as well as how the profiles related to conduct problems and depression cross-sectionally. In both groups of adolescents, four distinct groups emerged from the examination of risks in individual, family, peer, and environmental domains, although they differed slightly based on age. While the profiles of both 7th and 11th grade students resulted in a low risk group, a socioeconomic disadvantage group, and a family high-risk group, the 7th grade students had a peer high-risk group, whereas the 11th grade students merely had a high-risk group. Youth in the family high-risk groups had the highest level of depressive symptoms, while youth in the peer high-risk group had higher levels of conduct problems.

Valdez, Lambert, and Ialongo (2011), examined profiles of individual, academic, and social risk factors in urban first grade students (86% African American, 68.3% qualified for free/reduced lunch) and how these profiles predicted to adolescent outcomes

(data collected in 6th-9th grade). Using measures of depressive symptoms, aggressive behavior, peer relationships, and academic achievement, the authors found three distinct groups of children, which they categorized as well-adjusted, academic/peer risk, and behavior/academic/peer risk groups. As one would expect, children in both risk groups were found to have worse outcomes in adolescence, in that they were more likely to receive school and specialized mental health services and more likely to have low academic performance in adolescence than children in the well-adjusted class. Surprisingly, there were no significant differences in outcomes between the two risk groups, which the authors conclude may indicate that it is the amount of risk that is most important in predicting adjustment (Valdez, Lambert, and Jalongo, 2011).

More closely related to the current study, some researchers have examined community violence exposure using person-centered approaches. Ronzio, Mitchell, and Wang (2011) used Latent Class Analysis (LCA) to explore patterns of witnessing community violence in urban, African American mothers. These authors found both a higher-exposure and a lower-exposure group, with mothers in the higher-exposure group more likely to be low-income and to have a high school education or less. While the higher-exposure group had significantly higher anxiety scores, there were no differences in depression scores between the two groups. Lambert and colleagues (2010) also used LCA to examine the different patterns of violence exposure experienced cross-sectionally and longitudinally by a community sample of African American adolescents (6th-8th grades). The authors found two groups of community violence exposure: a high exposure group (20% of sample) and a low exposure group (80% of sample), but did not find any

differences in groups based on types of exposure, such as witnessing and victimization. Both depressive symptoms and impulsive behavior predicted community violence exposure, such that youth with higher levels of each were more likely to be in the high exposure group in 6th grade. However, gender, parental monitoring, and deviant peer affiliation did not distinguish the high versus low exposure group. When examining transitions between the two groups, the authors determined that the groups remained relatively stable over time across all variables (Lambert, Nylund-Gibson, Copeland-Linder, & Ialongo, 2010). Finally, Gaylord-Harden, Dickson, and Pierre (2015) also use LCA to identify profiles of violence in African American early adolescents, finding three groups: low exposure, victimization, and high exposure classes. Interestingly, the highest exposure class had the lowest level of depressive symptoms, while the groups did not differ on anxiety outcomes. Together, these person-centered analyses are valuable in creating profiles of individuals based on both their types and level of violence exposure, as well as providing information about how these profiles are differentially related to outcomes, although the conclusions are somewhat equivocal.

Finally, Copeland- Linder, Lambert, & Ialongo (2010) used Latent Profile Analysis (LPA) to identify profiles of 6th grade adolescents (88% African American, 66% low SES) risk (community violence exposure) and protective factors (self-worth, parental monitoring, and parental involvement in academics). In their analysis, they found three distinct profiles emerged, which they described as (1) vulnerable, (2) moderate risk and medium protection, and (3) moderate levels of risk and comparatively higher levels of protection. The authors then examined depressive symptoms and aggression one year

later in the participants to understand how these groups related to outcomes. In 7th grade, the youth in group 3 had significantly fewer depressive symptoms than the other two groups, but there were no significant differences found in any group for aggression.

As evidenced above, person-centered approaches provide researchers with ways to classify groups on variables of interest, such as risk and protective factors. The research focused on community violence exposure demonstrates that profiles emerge based on different levels and types of exposure and these profiles then provide important information about outcomes. Moreover, the study by Copeland-Linder and colleagues (2010) demonstrates including protective factors with the risk of community violence further differentiates individuals into groups and provides additional information about the heterogeneity of outcomes. While this study and the other studies reviewed above are important in understanding risk and protection for youth exposed to violence with a person-centered approach, they are limited in their scope of both understanding protective factors and outcomes. The current study will address these limitations, as will be described below.

The Current Study

The purpose of this study is to examine profiles of risk and protection among inner-city African American youth exposed to community violence. While researchers have examined various aspects of risk and protection in attempt to understand what predicts to resilience versus psychopathology, these studies have failed to capture the complexity of this relationship. While community violence has been shown to predict to internalizing disorders, externalizing disorders, and post-traumatic stress disorder, the

outcomes vary depending on not only the severity and type of violence exposure, but other variables, such as individual, family, and community predictors that may increase or reduce a child's risk. Thus, it has been challenging to identify answers to the question of what makes a child resilient.

Because of the above, this study will utilize profile analysis techniques to examine specific subgroups of children that exist within a larger group of children exposed to violence. By identifying subgroups of children exposed to community violence, and then examining how these subgroups differ in their longitudinal outcomes, it is possible that more tailored interventions could be designed to address the different types of risks and protective factors that exist within each group. The current study aims to determine groups of children that differ on specific protective factors. Using the ecological framework, it will be important to assess protective factors in multiple levels. Much of previous research has focused on factors of only one level, which disregards the dynamic properties of resilience in youth (Ungar, 2011). Furthermore, even when studies have attempted to examine risk and protective factors at multiple levels, they have not attempted to understand how these factors may affect the youth's longitudinal outcomes. This study will attempt to address both of these shortcomings.

Aims and Hypotheses

Aim I. The primary aim of the current study is to identify distinct profiles of youth based on individual, family/peer, and community-level protective factors. No hypothesis will be made regarding the number of profiles that will emerge, but is expected that protective factors will cluster together to predict group membership, such

that the profiles will include a “risky group” (low levels across all protective factors) and a “protected group” (high levels across all protective factors), This hypothesis is based on previous research on person-centered approaches reviewed above that found that levels of risk/protection factors were stronger predictors in distinguishing profiles, rather than types of factors (e.g., Copeland- Linder, Lambert, & Ialongo, 2010).

Aim II. A second aim of this study is to examine how these groups predict adjustment over time. It is hypothesized that the risky group will demonstrate elevated levels of maladjustment at Wave 2 (controlling for Wave 1 variables) and Wave 3 (controlling for Wave 1 and Wave 2 variables) as measured by internalizing and externalizing symptoms, in comparison to the resilient group. Moreover, because the PTSD measure was not collected at Wave 1, previous PTSD symptoms cannot be controlled for, but will still be examined as an outcome at Waves 2 and 3. It is again expected that youth with lower levels of protective factors across ecological levels (the “risky group”) will have higher levels of PTSD symptoms at both Waves 2 and 3.

Aim III. Finally, because this study is interested in understanding how risk interacts with protective factors, the effect of exposure to community violence on the profile groups will also be examined. Specifically, it is hypothesized that the relationship between exposure to violence (witnessing and victimization) and outcomes will be moderated by profile groups, such that higher exposure to violence will lead to more negative outcomes, especially for the less protected groups. The moderating relationship will be examined at Waves 2 and 3, as the Exposure to Violence measure differs at Wave

1 and does not provide sufficient information to examine both witnessing and victimization.

Finally, gender, age, and SES will be examined to see how these variables affect risk and resilience. Based on previous research that has found that males are at greater risk for community violence exposure, it is expected that males will be significantly overrepresented in the riskier groups. SES and age will both be examined as exploratory analyses.

CHAPTER THREE

METHODS

Participants, Design, and Procedures

The current study will be conducted using Project on Human Development in Chicago Neighborhoods (PHDCN), a longitudinal study collected over seven years from a sample of children, adolescents, and their primary caregivers. Participants were recruited using a multi-stage sampling strategy. First, findings from cluster analyses of 1990 U.S. Census data, knowledge of Chicago neighborhoods, and observations of geographic boundaries (e.g., railroad tracks, parks, and freeways) were used to assign each of Chicago's 847 census tracts to one of 343 neighborhood clusters (NCs). The resulting NCs were then stratified by ethnic composition (7 categories) and SES (3 categories: high, medium, and low), yielding 21 strata. Roughly equal numbers of NCs were randomly selected from all but three empty strata—low SES primarily White NCs, high SES primarily Latino NCs, and high SES primarily Black and Latino NCs. This yielded a final representative sample of 80 NCs. Approximately 35,000 households within these 80 NCs were randomly selected and screened for eligibility (eligible households had children within 6 months of one of seven target ages).

For the Longitudinal Cohort Study, a stratified probability sample of 80 neighborhoods was selected. The 80 NCs were sampled from the 21 strata (seven racial/ethnic groups by three socioeconomic levels) with the goal of representing the 21

cells as equally as possible to eliminate the confounding between racial/ethnic mix and socioeconomic status. Once the 80 NCs were chosen, then block groups were selected at random within each of the sample neighborhoods. A complete listing of dwelling units was collected for all sampled block groups. Pregnant women, children, and young adults in seven age cohorts (birth, 3, 6, 9, 12, 15, and 18 years) were identified through in-person screening of approximately 40,000 dwelling units within the 80 NCs. The screening response rate was 80 percent. Children within six months of the birthday that qualified them for the sample were selected for inclusion in the Longitudinal Cohort Study. A total of 8,347 participants were identified through the screening. Of the eligible study participants, 6,234 children and adolescents in seven age groups (ages 0, 3, 6, 9, 12, 15, and 18 years), or cohorts, were interviewed for the first wave of data collection. Wave 2 and 3 assessments were administered at approximately 2- to 2½-year intervals (i.e., the second wave of data collection occurred between 1997 and 1999; and the third wave of data was collected between 2000 and 2001).

Retention rates were relatively high; 86% of the original sample enrolled at Wave 2 and 77% of the original sample enrolled at Wave 3 (Martin & Schoua-Glusberg, 2002), although complete data are not available for all participants at each wave. At each assessment, youth and primary caregivers completed measures of functioning in a wide variety of physical, social, psychological, behavioral, and academic domains. For all cohorts except 0 and 18, primary caregivers as well as the child were interviewed. The primary caregiver was the person found to spend the most time taking care of the child. Separate research assistants administered the primary caregiver interviews and the child

interviews. The primary method of data collection was face-to-face interviewing, although participants who refused to complete the personal interview were administered a phone interview. Depending on the age and wave of data collection, participants were paid between \$5 and \$20 per interview. Other incentives, such as free passes to museums, the aquarium, and monthly drawing prizes were included.

The youth-level sample for the present study was drawn from cohorts 9 and 12 (i.e., those who were 9 or 12 years old at Wave 1). We limited the analytic sample to participants who were assessed at each of the three time-points included in our analyses (i.e., Waves 1, 2, and 3). Additionally, we included only youth of African American descent. This decision was made based on researchers (e.g., Cooley-Strickland et al., 2009) calling for African Americans to be directly studied when investigating community violence due to their disproportionate levels of exposure. Our final sample consisted of 587 youth at Wave 1 (50.6% female, M age = 10.69).

Measures

Demographic. Information on the following demographic variables was assessed: gender, child age, family structure, and socioeconomic status (SES).

Protective factors. Table 1 shows the protective factors analyzed in this study.

Emotion regulation. The Emotionality, Activity, Sociability, and Impulsivity (EASI; Bluss & Plomin, 1975) Temperament Survey was included in the Longitudinal Cohort Study to assess the participant's temperamental disposition. It is a 40-item questionnaire administered to parents of participants that obtained information about the participant's tendencies regarding different aspects of temperamental makeup. The

responses were 1 = uncharacteristic, 2 = somewhat uncharacteristic, 3 = neither, 4 = somewhat characteristic, and 5 = characteristic, with higher scores suggesting that the particular trait was more characteristic of the participant being observed. For this study, the items were reverse coded, such that higher scores indicated greater levels of emotion regulation for the participant and would be more easily compared to other protective factors. Five items (e.g. “Reacts intensely when upset”) from the EASI Emotionality subscale will be used as a measure of child emotion regulation ($\alpha = .72$).

Table 1. Protective Factors by Ecological Level

Ecological level	Protective Factor (Measure)	Reporter
Individual	Emotion Regulation (EASI)	Parent
	Sociability (EASI)	Parent
Family	Family Cohesion & Conflict (Family Environment Scale)	Parent
	Parental Monitoring (HOME)	Parent
	Parent Social Support (Provision of Social Relations)	Child
Peer	Positive Peer Influence (Deviance of Peers)	Child
	Friend Social Support (Provision of Social Relations)	Child
Community	Collective Efficacy (Community Survey)	Parent

Sociability. Five items from the EASI (see above) subscale of Sociability (e.g. “Makes friends easily” and “Likes to be with people”) scale ($\alpha = .81$) will also be used as an individual level protective factor.

Parental monitoring. Parental monitoring was measured using items from the Home Observation for Measurement of the Environment (Caldwell & Bradley, 1984) includes items such as “Is the subject let in public without supervision?” and “Does the

primary caregiver have a set time (curfew) to be home on school and weekend nights?” Items were coded yes or no, with higher scores indicating more parental monitoring. In this study, 8-items from the HOME were used to assess parental monitoring. While internal consistency for these items were somewhat lower than desired ($\alpha = .60$), it demonstrated an improvement on past research using the longer 13-item subscale ($\alpha = .50$; Gibson, Sullivan, Jones, & Piquero, 2010).

Family cohesion. The Family Environment Scale (FES; Moos & Moos, 1994) was designed to assess the interpersonal relationships and the overall social environment within the family. The FES captured the perception of the family's functioning from one of its own members and was administered to the primary caregivers (PCs) for the participants belonging to cohorts 0 through 15. The FES specifically sought to quantify three dimensions of the family environment: interpersonal relationships, directions of personal growth, and basic organization and structure. This study will utilize the FES subscale of Conflict/Cohesion, which includes 9 true-false items such as “We fight a lot in our family” and “We try hard to smooth over disagreements.” Specific items were reverse scored so that higher scores indicate greater cohesion. This subscale has demonstrated moderate internal consistency ($\alpha = .70$ to $.72$; Skeer et al., 2011, and Boyd, Gullone, Needleman, & Burt, 1997, respectively) in past research with this dataset.

Peer relationships. The Deviance of Peers (Huizinga, Esbenson, & Weiher, 1991) scale 36-item self-report interview was used as a measure of peer relationships. For each question, the participant was asked to answer how many of their friends (1= never to 3 =all) are involved in conventional and delinquent activities. For the current

study, items were selected that captured positive activities (e.g., “Number of friends who are considered good students” and “Number of friends who are generally honest and tell the truth”) and used as a measure of Positive Peer Influence (8 items; $\alpha = .61$).

Social support. The Provision of Social Relations (PSRS; Turner, Frankel, & Levin, 1983) instrument evaluated the social support received by the participant from family and friends. The PSRS interview asked specific questions regarding the respondent's primary source of help and sense of closeness to family members and friends. The PSRS interview asked specific questions regarding the respondent's primary source of help, sense of closeness to family members and friends, and the presence or absence of feelings of loneliness (e.g., “When I am with my friends, I am able to relax and be myself”, “People in my family help me find solutions to my problems”). The response format for all but three of the questions was the PSRS was 1 = very true, 2 = somewhat true, 3 = not true. This study will utilize both the Family Support (8 items) and Friend Support (8 items) subscales, which have demonstrated good reliability in previous research ($\alpha = .72$ and $\alpha = .63$, respectively; Milan, Turner et al., 1983; Turner, Grindstaff, & Phillips, 1990).

Collective efficacy. This parent-reported measure was aggregated from a sum of Neighborhood Social Cohesion and Neighborhood Social Control (Sampson et al., 1997). Neighborhood Social Cohesion was a sum of 5 items (strongly disagree to strongly agree) about residents' willingness to help, trust each other, get along, share the same values, and perceive the community as close-knit and Neighborhood social control (5 items) captured perception of neighborhood boundaries, that is, neighbors will intervene if

children are skipping school, hanging out on a street corner, or spray-painting graffiti.

This measure has demonstrated good reliability in past research with this dataset ($\alpha = .79$, Cooley-Strickland et al., 2009).

Risk: Exposure to Community Violence

Community violence exposure. Youth's exposure to community violence was assessed using items from the My Exposure to Violence scale (My ETV; Kindlon et al., 1996; Kuo, Mohler, Raudenbush, & Earls, 2000; Selner-O'Hagan et al., 1998), which is an expanded version of the Survey of Exposure to Community Violence (Richters & Martinez, 1993). The My ETV scale assesses frequency, type, and intensity of exposure to different types of community violence, including seeing someone shoved, kicked, or punched; seeing someone attacked with a knife; hearing a gunshot; and seeing someone shot. If the youth participants reported that they had witnessed or been victimized by that type of incident in the community during the prior 12 months, they reported on the frequency of each event. Two subscales of witnessing (nine items; $\alpha = .74$) and victimization (seven items; $\alpha = .57$) were calculated for participants at Waves 2 and 3. The psychometric properties of these scales have been tested in diverse populations using item-response theory and Rasch modeling (Selner-O'Hagan et al. 1998).

Mental Health Outcomes

Internalizing and externalizing problems. The Child Behavior Checklist (CBCL; Achenbach, 1991) was a parent-report questionnaire on which the child was rated on various behavioral and emotional problems. The CBCL is one of the most widely-used standardized measures in child psychology for evaluating maladaptive

behavioral and emotional problems in youth between the ages of 4 and 18. It assessed internalizing (i.e., anxious, depressive, and overcontrolled) and externalizing (i.e., aggressive, hyperactive, noncompliant, and undercontrolled) behaviors.

Additionally at Waves 2 and 3, the Youth Self-Report (YSR; Achenbach, 1991) was given to youth participants. These measures will be included in analyses at Waves 2 and 3 to examine differential reporting in internalizing and externalizing symptoms.

Post-traumatic stress disorder. The Post-Traumatic Stress Disorder (Past Year) was administered to participants at Waves 2 and 3. The instrument was adapted from the Anxiety module of the Diagnostic Interview Schedule for Children (DISC-IV; Shaffer et al., 2000), an extensive and well-validated measure of PTSD diagnostic criteria (Kamineer, Seedat, & Stein, 2005). The measure obtained information regarding participants' anxiety or stress symptoms in relation to traumatic events that may have happened to the participants in the past year.

CHAPTER FOUR

RESULTS

Descriptive Analyses

The means and standard deviations for all variables (demographic, protective factors, exposure to violence, and outcomes), along with the correlations among the variables are presented in Table 2.

Identification of the Latent Profiles of Protective Factors

Latent profile analysis (LPA) procedure. To address the first aim of this study, protective profiles or classes were identified using Latent Profile Analysis (LPA) in Mplus Version 7.0 (Muthén & Muthén, 1998–2007). Missing data were accounted for using maximum likelihood estimation via the EM algorithm (Enders, 2010). LPA, used to identify unobserved subgroups with similar patterns, proceeds in a series of steps starting with a one-class model solution and increasing in number of classes (Pastor, Barron, Miller, & Davis, 2007). The best-fitting model is determined by evaluating multiple criteria, with each statistical index providing unique information about the fit of the model. Goodness-of-fit measures, which include information criterion indices, adjust for model complexity (e.g., number of parameters estimated in the model), with lower values reflecting better model fit. Relative fit indices provide information regarding comparisons between competing models, with lower values indicating improved fit. To determine the statistically indicated number of classes to include in the final model, Lo-Mendell-

Table 2. Correlations, Means, and Standard Deviations

	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender												
2. Age	-.30											
3. Sociability	-.02	-.03										
4. Emotion regulation	-.04	-.09*	.18**									
5. Parental monitoring	-.09*	-.03	.04	-.07								
6. Family cohesion	.02	-.07	.02	-.28**	.07							
7. Family social support	-.01	.06	.01	-.07	-.02	.08						
8. Peer social support	-.10**	.13**	.03	-.06	.01	.03	.35**					
9. Positive peers	-.07	-.03	.04	.03	-.03	.09	.14**	.24**				
10. Collective efficacy	-.04	.02	-.02	.01	.13*	.17**	.08	.00	-.04			
11. Witnessing W2	.15**	.20	.05	.02	.00	-.01	-.07	.02	-.09	-.00		
12. Victimization W2	.12*	.07	.03	.06	-.03	-.09	-.19**	-.04	-.12*	.05	.40**	
13. Witnessing W3	.29**	-.01	-.13*	-.13*	-.10	-.00	-.08	.12*	.04	-.00	.20**	.31**
14. Victimization W3	.04	.13**	-.07	-.03	.08	-.14**	-.07	.20**	.15**	.07	-.07	.07
15. CBCL internalizing W1	.04	.09*	-.04	.46**	-.10*	-.31**	-.06	-.11*	.00	-.06	.01	.12*
16. CBCL internalizing W2	-.02	.17**	-.03	.34**	-.14**	-.28**	-.10	-.07	-.09	-.00	.08	.28**
17. CBCL internalizing W3	-.08	.18**	.02	.33**	-.08	-.27**	-.04	-.01	-.05	-.01	.05	.11*
18. CBCL externalizing W1	.13**	.03	.03	.46**	-.15**	-.41**	-.03	-.12**	-.01	-.03	.11*	.12*
19. CBCL externalizing W2	.09	.06	.04	.36**	-.16**	-.36**	-.08	-.09	.03	-.01	.13*	.23**
20. CBCL externalizing W3	.04	.10*	.06	.31**	-.13*	-.31**	-.06	-.01	.00	-.04	.10	.14**
21. PTS symptoms W2	-.05	.04	.02	-.05	-.03	.02	-.08*	-.01	-.03	-.03	.20**	.20**
22. PTS symptoms W3	-.11**	.04	-.00	.07	.03	-.03	.04	.03	-.02	-.06	.07	.05
23. YSR internalizing W2	-.25**	-.07	-.14	-.03	-.08	-.13*	-.13*	-.16**	-.00	-.03	-.03	.23**
24. YSR internalizing W3	-.25**	.09	-.03	-.04	-.06	-.13*	-.09	.06	.02	.05	.17**	.23**
25. YSR externalizing W2	.06	.16**	-.05	-.12*	-.12*	.15**	-.08	-.05	-.16**	.04	.36**	.38**
26. YSR externalizing W3	-.09	.23**	-.03	-.04	-.09	-.18*	-.04	.08	-.08	.01	.33**	.31**
<i>M</i>	0.49	10.69	3.66	2.95	7.10	7.19	16.66	14.15	17.13	3.37	5.36	.71
<i>SD</i>	.50	1.52	.72	1.11	1.26	1.99	1.75	2.67	2.66	.71	4.74	1.57

	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Gender														
2. Age														
3. Sociability														
4. Emotion regulation														
5. Parental monitoring														
6. Family cohesion														
7. Family social support														
8. Peer social support														
9. Positive peers														
10. Collective efficacy														
11. Witnessing W2														
12. Victimization W2														
13. Witnessing W3														
14. Victimization W3	.13*													
15. CBCL internalizing W1	.12*	.80**												
16. CBCL internalizing W2	.11	.79*	.58**											
17. CBCL internalizing W3	.11*	.22**	.46**	.62**										
18. CBCL externalizing W1	.09	.14**	.63**	.52**	.43**									
19. CBCL externalizing W2	.19**	.22**	.41**	.68**	.46**	.65**								
20. CBCL externalizing W3	.20**	.27**	.29**	.52**	.73**	.56**	.66**							
21. PTS symptoms W2	.09	.11*	.02	.06	.04	.04	.04	.05						
22. PTS symptoms W3	.19**	.17**	.05	.06	.11*	.03	.06	.12*	.13**					
23. YSR internalizing W2	.31**	.03	.12*	.16**	.18**	.11*	.13**	.16**	.10	.23**				
24. YSR internalizing W3	.24**	.22**	.18**	.22**	.25**	.15**	.17**	.18**	.23**	.23**	.45**			
25. YSR externalizing W2	.28**	.22**	.23**	.27**	.19**	.33**	.34**	.30**	.19**	.06	.50**	.31**		
26. YSR externalizing W3	.46**	.34**	.10	.26**	.28**	.22**	.30**	.41**	.15**	.13*	.25**	.56**	.56**	
<i>M</i>	5.55	.73	7.39	8.20	9.38	12.43	9.12	9.40	.54	.43	11.05	10.07	7.95	9.06
<i>SD</i>	4.70	1.54	6.70	.7.84	8.39	9.11	7.20	7.77	1.94	1.54	7.71	7.29	5.38	5.92

* $p < .05$. ** $p < .01$.

Rubin's (2001) adjusted-LRT statistic was used for comparing nested latent class models by comparing the improvement in fit between two models (i.e., comparing $k - 1$ and the k class models). Finally, entropy indicates the precision with which the cases are classified into the various extracted latent classes with larger values indicating better classification (Lubke & Muthén, 2007; Ramaswamy et al., 1993). The final solution is chosen based on the smaller information criterion values (AIC, BIC, & ABIC), large entropy values, and a significant adjusted LRT, as well as the evaluating the interpretability of each solution from a theoretical viewpoint.

Model Selection

Using the previously described procedure, a series of five LPA models were run that included eight protective factors: Emotion Regulation, Sociability, Parental Monitoring, Family Cohesion, Family Social Support, Peer Social Support, Positive Peers, and Collective Efficacy as observed indicators. All indicators were allowed to correlate, but variances and co-variances were constrained to be equal across classes. To avoid convergence on a local maximum, 200 random sets of starting values were used (Pastor et al., 2007). Table 3 presents fit statistic results for each analysis.

Based on optimal fit indices and interpretability, the 2-class solution was selected as the final model. This decision was made based on the entropy for this model being the highest out of all the tested models, as well as the significant LMR test ($p < .05$) for this solution, suggesting that the 2-class solution provided a better fit than the 1-class solution. Both the 3- and 5-class solutions were rejected due to nonsignificance of the LMR tests ($p > .05$). While the 4-class model had relatively high entropy and a

significant LMR test ($p < .05$), suggesting that the 4-class solution provided a better fit than the 3-class solution, an examination of the 4-class solution suggested that it did not add any meaningful information beyond what is suggested in the 2-class solution and may represent a meaningless division of preceding classes. Specifically, an examination of the item-means for this solution suggested a lack of distinction between the four-classes and similar groups to the 3-class solution. Finally, this solution included a class that was less than 10% of the overall sample (5.15%; $N = 30$), which makes interpretability and further analysis difficult.

Table 3. Fit Statistics for Each Class Solution (1-5)

	1 Class	2 Classes	3 Classes	4 Classes	5 Classes
AIC	19249	16004	15814	15743	15691
BIC	19332	16122	15981	15957	15953
Sample	19272	16036	15860	15801	15763
Adjusted BIC					
Entropy	NA	.933	.894	.925	.929
Lo, Mendell, Rubin	NA	2 v 1 Value = 334 p = .0000	3 v 2 Value = 208 p = .0687	4 v 3 Value = 92 p = .0059	5 v 4 Value = 75 p = .2295
N for each class	C=584	C1=441 C2=143	C1=135 C2=378 C3=71	C1=61 C2=111 C3=30 C4=382	C1=77 C2=4 C3=363 C4=30 C5=110

Note. AIC = Akaike Information Criterion- $2 * \text{LogLikelihood} + 2p$. Where p is number of free parameters (15). Smaller is better. BIC = Bayesian Information Criterion- $2 * \log\text{Likelihood} + p * \ln(n)$. Where p is number of free parameters (15), n is sample size (1102). Smaller is better. Sample Size Adjusted BIC = $-2 * \log\text{Likelihood} + p[\ln((n+2)/24)]$. Smaller is better. Entropy—this is a measure of how clearly distinguishable the classes are based on how distinctly each individual's estimated class probability is. Larger (closer to 1) is better. Lo, Mendell, and Rubin likelihood ratio test—this test uses a special distribution (not chi-square) for estimating the probability.

Finally, it is important to note that while the BIC and the adjusted BIC (ABIC) decreased with each of the solutions, the decreases in these numbers were not large,

suggesting that the improvement in the model was meaningful. Additionally, these fit indices may keep on decreasing while additional classes are added, potentially because of their sensitivity to sample size (Muthen & Muthen, 2010).

Characteristics of the Profiles

An examination of the final 2-class solution (Figure 1) reveals interesting patterns. A majority of the youth (75.51%, N = 441) demonstrated higher levels across most protective factors and is labeled as “Higher Protection.” The remainder of the youth (24.49%, N = 143) fell into a group characterized by lower levels of protective factors, especially Emotion Regulation, Parental Monitoring, and Family Cohesion and is labeled as “Lower Protection.” Table 4 presents the means on protective factor indicators for the profiles.

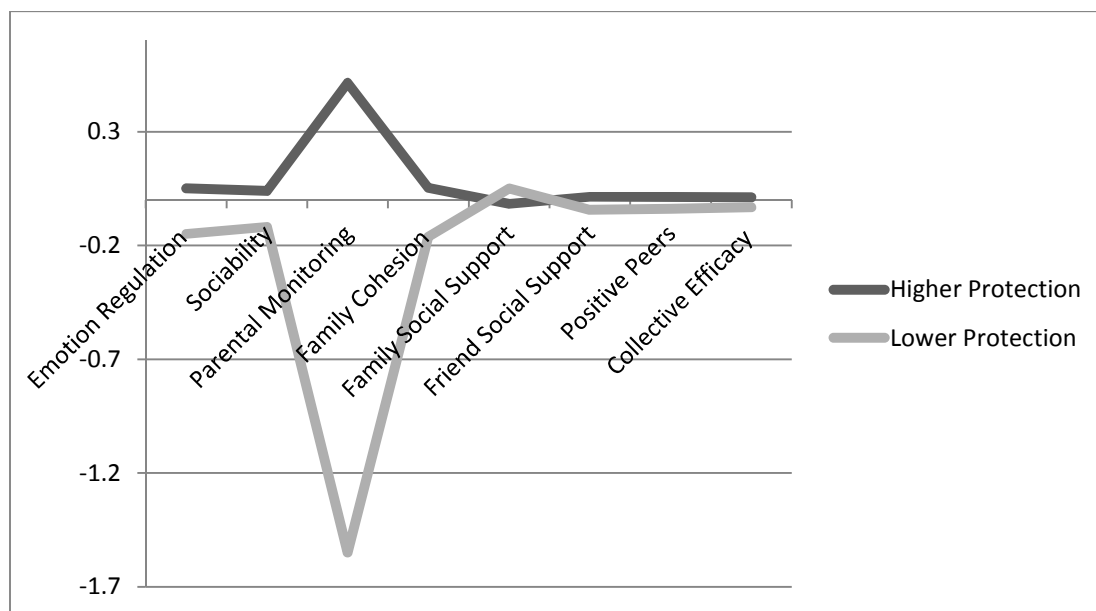


Figure 1. Best-Fitting 2-Profile Model of Protective Factors (*z*-Scored Means).

Table 4. Means of Two-Class Solution

Variable	Overall item means	Two class solution	
		First class (Higher protection)	Second class (Lower protection)
Emotion regulation	2.95	3.12*	2.89
Sociability	3.66	3.69	3.58
Parental monitoring	7.10	7.72***	5.12
Family cohesion	7.19	7.30*	6.84
Family Social support	16.65	16.63	16.75
Peer social support	14.14	14.18	14.02
Positive peers	17.14	17.17	17.02
Collective efficacy	3.37	3.38	3.34
<i>N</i>	584	441	143

* $p < .05$. ** $p < .01$. *** $p < .001$.

Independent sample t-tests were also conducted to compare the two classes on the protective factors used as class indicators (Emotion Regulation, Sociability, Parental Monitoring, Family Cohesion, Family Social Support, Peer Social Support, Positive Peers, and Collective Efficacy) and are also presented in Table 4. Results revealed that there were significant differences between the two groups for Emotionality, Parental Monitoring, and Family Cohesion, $p < .05$. Youth in Lower Protection class reported significantly lower levels of Emotion Regulation, Family Cohesion, and Parental Monitoring. There were no other significant differences between the two groups in terms of protective factors.

Following the LPA, the classes were further validated by conducting independent sample T-tests to compare individuals within each class across demographic characteristics and mental health symptoms at Wave 1. Results (Table 5) indicated that the two classes significantly differed by gender, with Lower Protection class having

significantly more males, $t(242.61) = 2.37, p = .018$. The two classes did not significantly differ in age or SES, $p > .05$. Additionally, frequencies for the two classes on several additional demographic variables are presented in Table 6.

Table 5. Descriptive Statistics and t -Test Results for Demographic Characteristics by Class

Variable	Higher protection			Lower protection			t	df
	M	SD	n	M	SD	n		
Gender	0.47	0.50	441	0.58	0.50	143	2.37*	242.61
Age	10.64	1.52	441	10.85	1.51	143	1.40	582
SES	43.81	17.31	436	41.36	17.06	143	-1.47	577
Size of family	5.23	2.33	425	5.32	2.32	139	0.08	576

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6. Frequencies for Additional Demographic Characteristics by Class

Variable	Higher protection		Lower protection	
	f	%	f	%
Gender				
Female	235	46.7	60	42
Male	206	53.3	83	58
PC marital status				
Married	166	37.6	40	28.0
Single	221	50.1	79	55.2
Partnered	47	10.7	23	16.1
Salary				
<5,000	70	15.9	29	20.3
5,000-9,999	58	13.2	22	15.4
10-19,999	80	18.1	26	18.2
20,000-29,999	79	17.9	21	14.7
30-39,999	48	10.9	23	16.1
40,000-49,999	36	8.2	9	6.3
>50,000	65	14.7	13	9.1
Max education of PC				
Less than high school	14	3.2	2	1.4
Some high school	79	17.9	39	27.3
Finish high school	51	11.6	19	13.3
Some More than High school	233	52.8	73	51.0
Bachelor's Degree	59	13.4	10	7.0

For mental health symptoms at Wave 1, there were significant differences between the two classes for parent-reported CBCL Internalizing symptoms, such that youth in Lower Protection class ($M = 8.74$, $SD = 7.42$) had significantly higher symptoms than youth in Higher Protection class ($M = 6.94$, $SD = 6.40$), $t(212.60)$, $p = .011$. Youth in Lower Protection class also had significantly higher CBCL Externalizing symptoms ($M = 15.07$, $SD = 10.45$) than youth in High Protection class ($M = 11.57$, $SD = 8.46$), $t(203.71)$, $p = .000$.

Protective Profiles, Exposure to Community Violence, and Mental Health Outcomes

The next set of hypotheses pertained to the possible moderating effect of class membership on the relation exposure to violence and youth outcomes. It was hypothesized that class membership would be differentially associated with of internalizing symptoms, externalizing symptoms, and PTSD symptoms. Specifically, it was predicted that youth in the Higher Protection class would have lower levels of these symptoms at both Waves 2 and 3. It was also expected that, among children who experienced higher levels of exposure to violence (both witnessing and victimization), would demonstrate higher levels of mental health symptoms. However, for those youth in Higher Protection class, this relationship would not be as strong, such that their class membership would serve as a protective factor for negative outcomes.

In order to address the second and third aims of the study, the relation between each of these variables was examined by a series of hierarchical simultaneous multiple regressions. Baseline outcomes were entered simultaneously as controls for each analysis. Then, the centered main effects of both Class and Exposure to Violence were entered into

the regression equation, followed by an interaction term, comprised of the product of these two variables. These analyses were completed for Witnessing and Victimization, as well as the outcomes of internalizing symptoms (both parent and youth-report), externalizing symptoms (both parent and youth-report), and PTSD symptoms (youth-report only). Significant interactions were probed according to procedures recommended by Aiken and West (1991) and Holmbeck (2002). See Tables 7-12.

Main Effects of Protective Profiles and Exposure to Community Violence

To examine the relationships between protective profiles and mental health symptoms, youth were assigned a class membership based on the LPA solution. This approach is acceptable when, as in the present case, the entropy of the LPA model is above .80 (Clark & Muthén, 2009). Then, regression analyses were conducted to determine if class membership at Wave 1 predicted adjustment, specifically internalizing symptoms, externalizing symptoms, and PTSD symptoms at Waves 2 and 3.

Class membership did not significantly predict parent-reported internalizing symptoms or externalizing symptoms at Wave 2, Wave 3, or longitudinally. It also did not significantly predict PTSD symptoms at Wave 2 or Wave 3. However, class membership did significantly predict youth-report of internalizing symptoms at Wave 2, $\beta = -.106$, $t(345) = -2.03$, $p = .043$. Class membership was also marginally significant in predicting youth-reported externalizing symptoms at Wave 2, $\beta = -.086$, $t(345) = -1.73$, $p = .085$.

Table 7. Hierarchical Simultaneous Multiple Regression Analyses Predicting Outcomes from Protective Class and Exposure to Community Violence-Victimization, Wave 2.

	Class × Victimization				Higher protection class				Lower protection class			
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Parent-Report Externalizing Symptoms												
Externalizing W1	.49	.03	.62	15.07***	.51	.04	.61	12.68***	.46	.06	.64	8.40***
Victimization	1.45	.37	.32	3.91***	.45	.22	.10	2.10*	1.55	.36	.32	4.24***
Class	-.66	.68	-.04	-.97								
Class × Victimization	-1.05	.45	-.19	-2.35*								
Parent-Report Internalizing Symptoms												
Internalizing W1 (control)	.64	.05	.55	12.61***	.66	.06	.54	10.92***	.58	.09	.56	6.40***
Victimization	1.25	.43	.25	2.90**	.98	.25	.20	3.98***	1.34	.43	.27	3.08**
Class	-.88	.78	-.05	-1.12								
Class × Victimization	-.27	.52	-.05	-.53								
Youth-Report Externalizing Symptoms												
Victimization	1.87	.34	.55	5.52***	1.10	.20	.32	5.52***	1.86	.32	.55	5.82***
Class	-1.07	.62	-.09	-1.73								
Class × Victimization	-.82	.41	-.20	-1.99*								
Youth-Report Internalizing Symptoms												
Victimization	2.89	.49	.59	5.85***	1.06	.29	.22	3.71***	2.86	.49	.55	5.82***
Class	-1.88	.90	-.11	-2.09*								
Class × Victimization	-1.93	.60	-.33	-3.23***								
PTSD												
Victimization	.50	.12	.41	4.19***	.16	.06	.14	2.54**	.50	.15	.32	3.36***
Class	-.21	.22	-.05	-.96								
Class × Victimization	-.36	.15	-.24	-2.52*								

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 8. Hierarchical Simultaneous Multiple Regression Analyses Predicting Outcomes from Protective Class and Exposure to Community Violence-Witnessing, Wave 2

	Class × Witnessing				Higher protection class				Lower protection class			
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Parent-Report Externalizing Symptoms												
Externalizing W1	.50	.03	.64	15.16***	.51	.04	.62	12.66***	.49	.06	.68	8.23***
Witnessing	.10	.12	.07	.83	.08	.07	.05	1.11	.10	.13	.06	.77
Class	-.66	.70	-.04	-.94								
Class × Witnessing	-.02	.15	-.01	-.14								
Parent-Report Internalizing Symptoms												
Internalizing W1	.67	.05	.57	12.92***	.68	.06	.56	11.02***	.64	.10	.61	6.73***
Witnessing	.04	.14	.02	.26	.14	.08	.09	1.68	.02	.15	.01	.13
Class	-.88	.81	-.05	-1.09								
Class × Witnessing	.11	.17	.05	.62								
Youth-Report Externalizing Symptoms												
Witnessing	.32	.11	.28	2.87**	.44	.07	.38	6.75***	.30	.12	.28	2.51*
Class	-1.08	.63	-.09	-1.72								
Class × Witnessing	.12	.14	.09	.92								
Youth-Report Internalizing Symptoms												
Witnessing	.46	.17	.29	2.81**	.33	.10	.21	3.45**	.46	.18	.28	2.53*
Class	-1.90	.94	-.11	-2.03*								
Class × Witnessing	-.15	.20	-.07	-.72								
PTSD												
Witnessing	.09	.04	.22	2.30*	.08	.02	.22	3.85***	.08	.05	.16	1.60
Class	.09	.04	.22	2.30*								
Class × Witnessing	-.21	.22	-.05	-.95								

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 9. Hierarchical Simultaneous Multiple Regression Analyses Predicting Outcomes from Protective Class and Exposure to Community Violence-Victimization, Wave 3.

	Class × Victimization				Higher protection class				Lower protection class			
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Parent-Report Externalizing Symptoms												
Externalizing W2	.68	.05	.60	13.36***	.62	.06	.55	10.45***	.846	.10	.74	8.81***
Victimization	.68	.50	.14	1.37	.73	.25	.16	2.97**	.62	.48	.11	1.29
Class	-.60	.85	-.03	-.71								
Class × Victimization	-.01	.55	-.00	-.02								
Parent-Report Internalizing Symptoms												
Internalizing W2	.70	.06	.58	12.22***	.72	.07	.57	10.71***	.63	.11	.59	5.94***
Victimization	.81	.56	.15	1.46	.29	.28	.06	1.05	.85	.54	.16	1.56
Class	-.37	.95	-.02	-.39								
Class × Victimization	-.50	.62	-.09	.80								
Youth-Report Externalizing Symptoms												
Externalizing W2	.58	.06	.51	10.43***	.56	.06	.50	8.83***	.62	.11	.59	5.85***
Victimization	1.19	.41	.32	2.90**	.80	.21	.22	3.83***	1.20	.36	.34	3.36***
Class	-.44	.72	-.03	-.61								
Class × Victimization	-.40	.46	-.10	-.88								
Youth-Report Internalizing Symptoms												
Internalizing W2	.40	.05	.42	7.91***	.36	.06	.38	6.20***	.53	.10	.58	5.33***
Victimization	1.00	.54	.23	1.86	.84	.26	.20	3.22***	1.05	.51	.22	2.06*
Class	-.61	.95	-.03	-.64								
Class × Victimization	-.18	.60	-.04	-.31								
PTSD												
PTSD W2	.10	.04	.12	2.44*	.04	.06	.04	.69	.18	.05	.36	3.65***
Victimization	.11	.13	.09	.82	.21	.07	.17	3.05*	.08	.10	.08	.81
Class	.19	.21	.04	.88								
Class × Victimization	.09	.15	.07	.64								

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 10. Hierarchical Simultaneous Multiple Regression Analyses Predicting Outcomes from Protective Class and Exposure to Community Violence-Witnessing, Wave 3.

	Class × Witnessing				Higher protection class				Lower protection class			
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Parent-Report Externalizing Symptoms												
Externalizing W2	.68	.05	.61	13.61***	.64	.06	.57	11.03***	.81	.10	.72	8.34***
Witnessing	.29	.17	.18	1.70	.17	.08	.11	2.11*	.23	.17	.12	1.41
Class	-.54	.85	-.03	-.64								
Class × Witnessing	-.13	.19	-.07	-.68								
Parent-Report Internalizing Symptoms												
Internalizing W2	.70	.06	.58	12.22***	.72	.07	.57	10.71***	.63	.11	.59	5.94***
Witnessing	.81	.56	.15	1.46	.29	.28	.06	1.05	.85	.54	.16	1.56
Class	-.37	.95	-.02	-.39								
Class × Witnessing	-.50	.62	-.09	.80								
Youth-Report Externalizing Symptoms												
Externalizing W2	.68	.05	.61	13.61***	.64	.06	.57	11.03***	.81	.10	.72	8.34***
Witnessing	.29	.17	.18	1.70	.17	.08	.11	2.11*	.23	.17	.12	1.41
Class	-.54	.85	-.03	-.64								
Class × Witnessing	-.13	.19	-.07	-.68								
Youth-Report Internalizing Symptoms												
Internalizing W2	.71	.06	.59	12.74***	.74	.07	.59	11.20***	.64	.10	.60	6.17***
Witnessing	.43	.19	.25	2.32*	.00	.09	.00	.02	.44	.18	.24	2.49*
Class	-.28	.95	-.01	-.29								
Class × Witnessing	-.43	.21	-.22	-2.07*								
PTSD												
PTSD W2	.10	.04	.12	2.44*	.03	.06	.03	.56	.18	.05	.37	3.80***
Witnessing	.01	.04	.02	.18	.09	.02	.22	3.99***	.00	.03	.01	.10
Class	.18	.21	.04	.87								
Class × Witnessing	.08	.05	.18	1.61								

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 11. Hierarchical Simultaneous Multiple Regression Analyses Predicting Outcomes from Protective Class and Exposure to Community Violence-Victimization, Longitudinal

	Class × Victimization				Higher protection class				Lower protection class			
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Parent-Report Externalizing Symptoms												
Externalizing W2	.73	.06	.63	12.65***	.70	.07	.58	10.11***	.83	.11	.75	7.88***
Victimization	.60	1.01	.11	.59	-.11	.31	-.02	-.36	.03	.50	.01	.06
Class	-.42	.91	-.02	-.46								
Class × Victimization	-.37	.56	-.12	.66								
Parent-Report Internalizing Symptoms												
Internalizing W2	.70	.06	.58	11.20***	.73	.07	.57	9.97***	.61	.12	.60	5.15***
Victimization	-1.26	1.13	-.22	-1.12	.16	.34	.03	.46	-.38	.56	-.08	-.68
Class	-.26	1.02	-.01	-.25								
Class × Victimization	.72	.63	.23	1.15								
Youth-Report Externalizing Symptoms												
Externalizing W2	.55	.07	.50	8.37***	.59	.08	.52	7.92***	.38	.15	.37	2.55*
Victimization	.93	.89	.23	1.05	.33	.29	.08	1.16	1.00	.48	.31	2.10*
Class	-.44	.81	-.03	-.55								
Class × Victimization	-.27	.49	-.12	-.55								
Youth-Report Internalizing Symptoms												
Internalizing W2	.36	.06	.38	6.19***	.38	.07	.39	5.72***	.29	.13	.32	2.31*
Victimization	2.77	1.13	.57	2.45*	.29	.34	.06	.41	1.77	.61	.41	2.92***
Class	-.75	1.02	-.04	-.73								
Class × Victimization	-1.23	.63	-.45	-1.98*								
PTSD												
PTSD W2	.09	.04	.12	2.34*	.02	.05	.02	.77	.24	.05	.49	5.22***
Victimization	.09	.21	.09	.42	.03	.06	.03	.54	-.02	.07	-.03	.78
Class	.19	.18	.05	1.03								
Class × Victimization	-.03	.12	-.06	-.29								

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 12. Hierarchical Simultaneous Multiple Regression Analyses Predicting Outcomes from Protective Class and Exposure to Community Violence-Witnessing, Longitudinal.

	Class × Witnessing				Higher protection class				Lower protection class			
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Parent-Report Externalizing Symptoms												
Externalizing W2	.73	.06	.63	13.17***	.69	.07	.58	10.19***	.82	.10	.75	8.71***
Witnessing W2	.24	.33	.15	.73	.00	.09	.00	.01	.10	.15	.06	.67
Class	-.38	.91	-.02	-.42								
Class × Witnessing W2	-.13	.18	-.14	-.68								
Parent-Report Internalizing Symptoms												
Internalizing W2	.69	.06	.58	11.41***	.73	.07	.57	10.16***	.59	.11	.57	5.31***
Witnessing W2	.14	.37	.08	.38	.06	.10	.04	.65	.10	.18	.06	.54
Class	-.23	1.02	-.01	-.22								
Class × Witnessing W2	-.04	.21	-.04	-.18								
Youth-Report Externalizing Symptoms												
Externalizing W2	.55	.06	.49	8.64***	.57	.07	.50	7.71***	.47	.12	.45	3.94***
Class	.59	.30	.47	1.97*	.15	.08	.12	1.78	.30	.13	.35	3.01**
Class × Witnessing W2	-.47	.80	-.03	-.59								
Witnessing	-.22	.16	-.32	-1.32								
Youth-Report Internalizing Symptoms												
Internalizing W2	.40	.06	.42	7.15***	.36	.07	.37	5.54***	.52	.11	.58	4.77***
Witnessing W2	-.12	.39	-.08	-.31	.20	.01	.14	2.02*	-.02	.19	-.01	-.09
Class	-.90	1.03	-.05	-.87								
Class × Witnessing W2	.15	.21	.19	.72								
PTSD												
PTSD W2	.09	.04	.12	2.34*	.01	.05	.01	.10	.23	.04	.48	5.33***
Witnessing W2	.01	.07	.02	.12	.03	.02	.07	1.23	.00	.02	.01	.07

	Class × Witnessing				Higher protection class				Lower protection class			
	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Class	.19	.18	.05	1.03								
Class × Witnessing W2	.01	.04	.03	.14								

* $p < .05$. ** $p < .01$. *** $p < .001$.

Main Effects of Exposure to Community Violence and Mental Health Outcomes

The relationship between exposure to violence (witnessing and victimization) and adjustment was also examined both cross-sectionally and longitudinally. At Wave 2, results revealed significant main effects between victimization and parent-report of externalizing symptoms, $\beta = .32$, $t(339) = 3.91$, $p = .000$, and internalizing symptoms, $\beta = .25$, $t(339) = 2.90$, $p = .004$. Additionally, there were significant main effects for victimization for youth-report of externalizing symptoms, $\beta = .55$, $t(345) = 5.52$, $p = .000$, and youth-report of internalizing symptoms, $\beta = .56$, $t(345) = 5.85$, $p = .000$. Witnessing violence also predicted youth report of externalizing symptoms, $\beta = .28$, $t(345) = 2.87$, $p = .004$, and internalizing symptoms, $\beta = .29$, $t(345) = 2.81$, $p = .005$. Finally, for PTSD symptoms, there were also significant main effects of both witnessing violence, $\beta = .22$, $t(403) = 2.30$, $p = .022$, and victimization, $\beta = .41$, $t(403) = 4.19$, $p = .000$.

For Wave 3, youth-report of externalizing symptoms were predicted by both victimization, $B = .90$, $\beta = .24$, $t(277) = 2.16$, $p = .032$, and witnessing, $B = .38$, $\beta = .30$, $t(277) = 2.81$, $p = .005$. There were no other significant results Wave 3.

Finally, longitudinal results were examined (ETV at Wave 2 predicting outcomes at Wave 3, controlling for Wave 2). Victimization at Wave 2 significantly predicted youth-report of internalizing symptoms at Wave 3, $\beta = .29$, $t(277) = 2.58$, $p = .010$. Finally, witnessing violence at Wave 2 significantly predicted youth-report of externalizing symptoms at Wave 3, $\beta = .26$, $t(277) = 2.71$, $p = .007$. There were no additional significant longitudinal results.

Moderation Analyses: Protective Profiles, Exposure to Community Violence, and Mental Health Outcomes

In order to examine the moderating effect of class membership on the relationship between exposure to community violence and outcomes, the interaction term between these variables was examined, as outlined above.

The analyses revealed that for Wave 2, there was a significant Class \times Victimization interaction, $\beta = -.189$, $t(339) = -2.35$, $p = .020$, for parent-report of externalizing symptoms (Figure 2). As suggested by the simple slope tests presented in Figure 2, there was a significant relation between victimization by violence and externalizing symptoms for youth in both Higher Protection Class, $\beta = .101$, $t(264) = 2.10$, $p = .036$, and in Lower Protection Class, $\beta = .321$, $t(76) = 4.24$, $p = .000$. This indicates that for children in both classes, they had significantly more externalizing symptoms when exposed to higher levels of victimization. However, the Lower Protection class suggested a stronger relationship between victimization and externalizing symptoms, such that the magnitude of the relation was more than three times the relation than the Higher Protection class.

Youth-report of internalizing and externalizing symptoms were also examined at Wave 2. There was a significant interaction for Victimization \times Class predicting YSR internalizing scores at Wave 2 $\beta = -.325$, $t(345) = -3.23$, $p = .001$. There were significant relationships between victimization and internalizing symptoms for youth in both Higher Protection class, $\beta = .221$, $t(268) = 3.71$, $p = .000$, and Lower Protection class, $\beta = .553$, $t(77) = 5.82$, $p = .000$, see Figure 3. Examining the regression coefficients, this effect

was most pronounced for the Lower Protection class, as compared to the Higher Protection class.

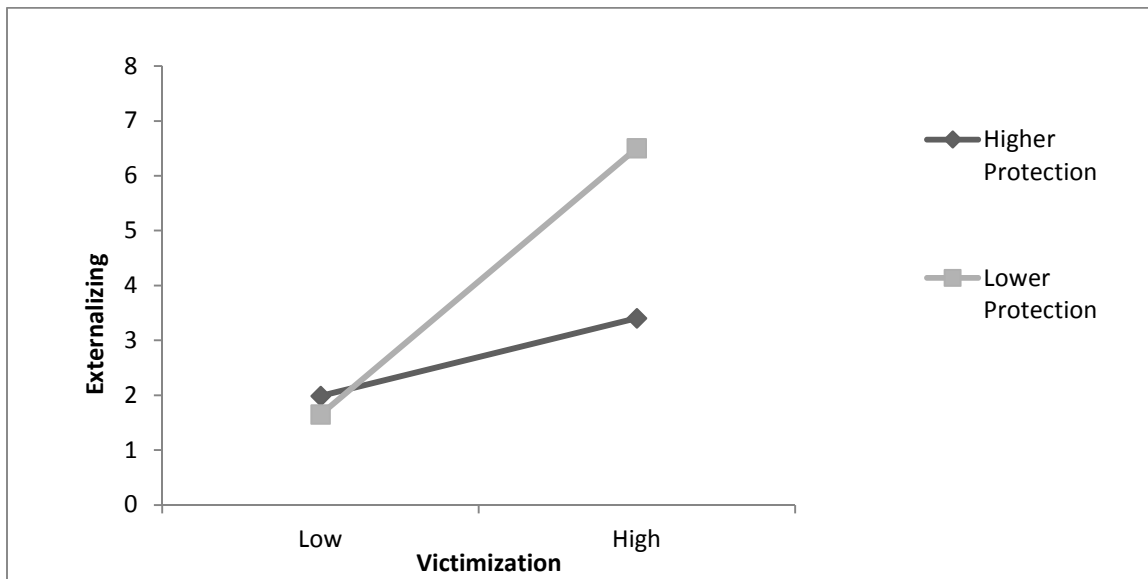


Figure 2. Victimization as a Moderator of the Relation Between Class Membership and Externalizing Symptoms (Parent Report), Wave 2.

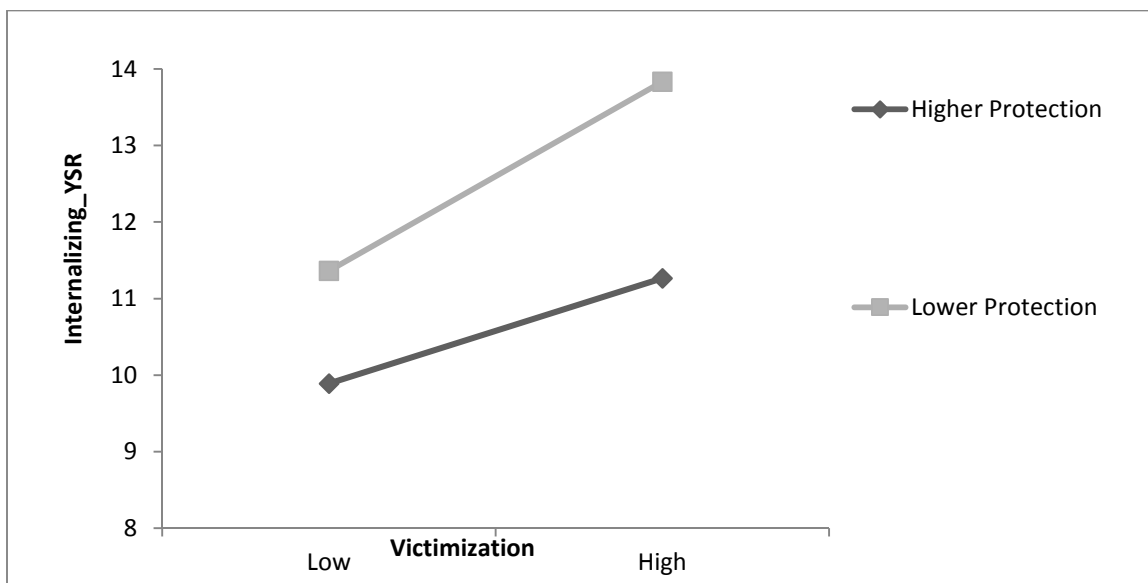


Figure 3. Victimization as a Moderator of the Relation between Class Membership and Internalizing Symptoms (Youth Report), Wave 2.

There was also a significant interaction for youth-reported externalizing symptoms at Wave 2, $\beta = -.197$, $t(345) = -1.99$, $p = .047$. Simple slopes (Figure 4) demonstrated significant relationships between victimization and youth-reported externalizing symptoms for both Higher Protection class, $\beta = .320$, $t(268) = 5.52$, $p = .000$, and Lower Protection class, $\beta = .553$, $t(77) = 5.82$, $p = .000$, with a meaningfully stronger relationship between victimization and youth-reported externalizing symptoms for the Lower Protection class.

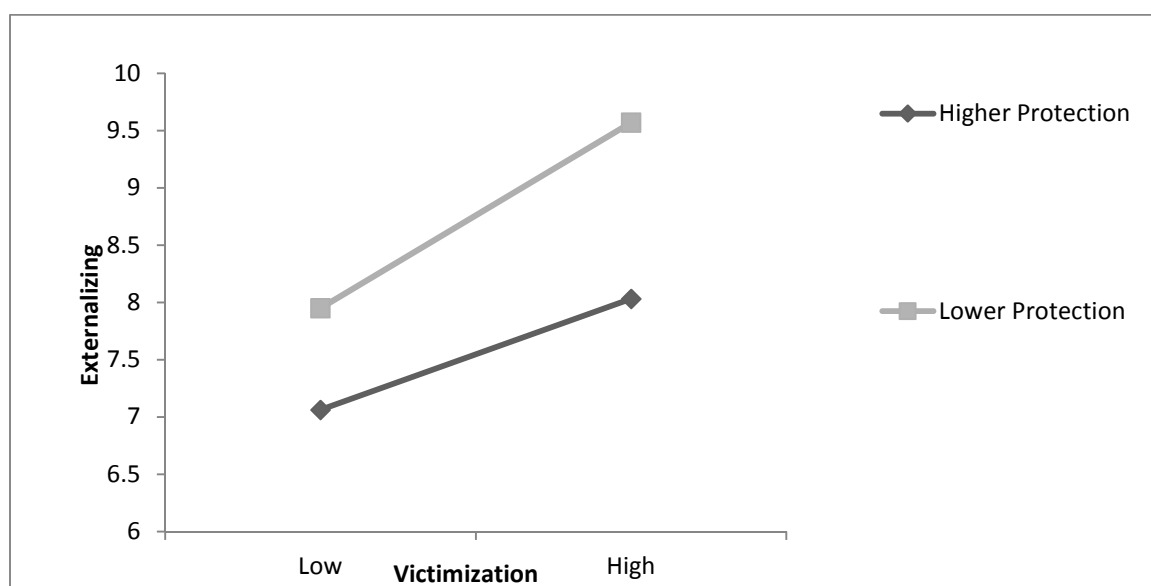


Figure 4. Victimization as a Moderator of the Relation between Class Membership and Externalizing Symptoms (Youth Report), Wave 2.

There was also a significant Class \times Victimization interaction predicting PTSD symptoms at Wave 2, $\beta = -.365$, $t(403) = -2.52$, $p = .012$ (Figure 5). The simple slope analyses revealed that for youth in Higher Protection class, there was a significant relation between victimization and PTSD symptoms, $\beta = .144$, $t(303) = 2.54$, $p = .012$. There was also a significant relation between victimization and PTSD symptoms for Lower Protection class, $\beta = .318$, $t(100) = 3.36$, $p = .001$. Again, it is important to note

that the relation between exposure and PTSD symptoms was almost twice the magnitude for the Lower Protection class as compared to the Higher Protection class. There were no other significant interaction results at Wave 2.

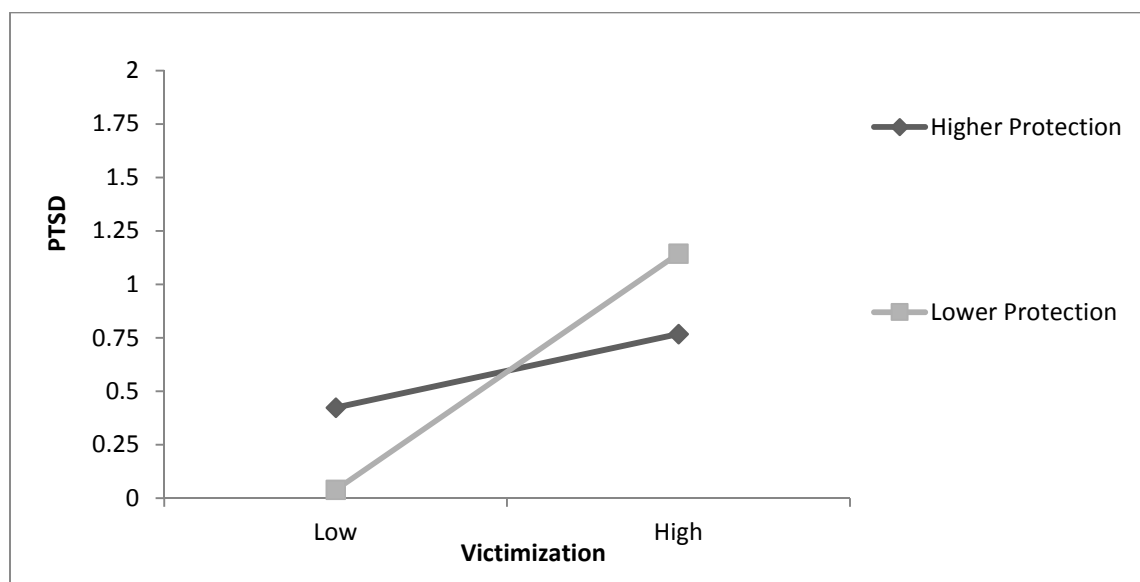


Figure 5. Victimization as a Moderator of the Relation between Class Membership and PTSD Symptoms (Youth Report), Wave 2.

At Wave 3, the analyses revealed significant Class \times Witnessing interaction for internalizing symptoms, $\beta = -.455$, $t(305) = -2.07$, $p = .039$ (Figure 6). The simple slope analyses for internalizing symptoms demonstrated that there was no significant relationship for Higher Protection class, $B = .001$, $\beta = .001$, $t(243) = .016$, $p = .988$, but there was a significant relationship for Lower Protection class, $\beta = .241$, $t(61) = 2.49$, $p = .015$. There were no other significant interaction results at Wave 3.

Longitudinally, there was a marginally significant Class \times Victimization interaction for youth-reported internalizing symptoms, $\beta = -.208$, $t(277) = -1.92$, $p = .056$. The simple slope analyses (Figure 7) revealed that for youth in Higher Protection class, victimization did not predict to increased internalizing symptoms, $\beta = .046$, $t(218)$

= .73, $p = .465$. Children from Higher Protection class who reported higher versus lower victimization did not differ in internalizing symptoms. However, for children in Lower Protection class, there was a significant relation between victimization predicted increased internalizing symptoms, $\beta = .264$, $t(55) = 2.04$, $p = .046$. Children from Lower Protection class who reported higher victimization had higher internalizing symptoms. There were no other significant moderations.

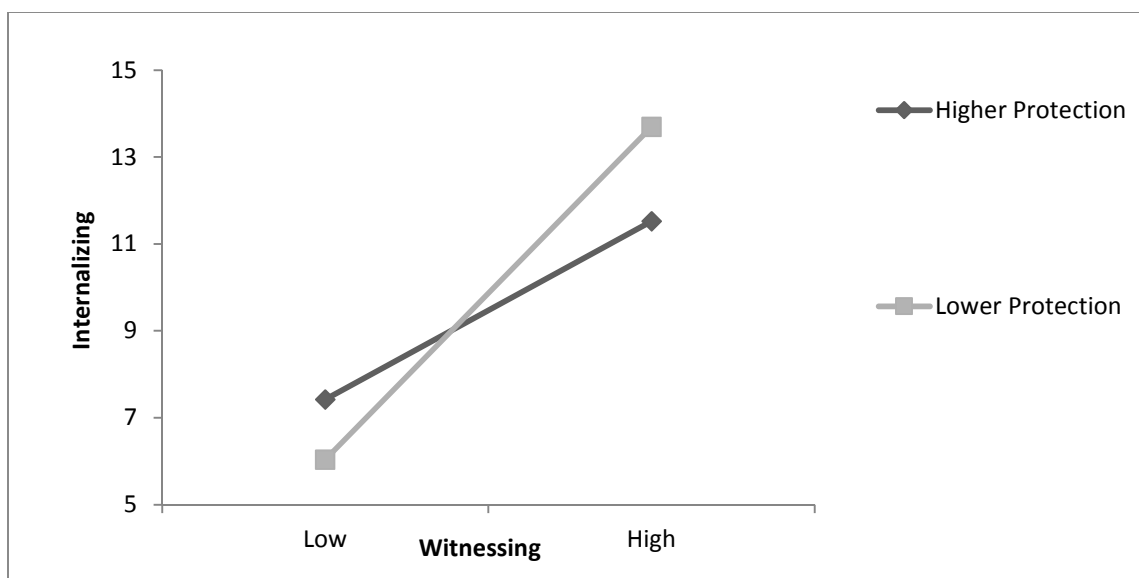


Figure 6. Witnessing as a Moderator of the Relation between Class Membership and Internalizing Symptoms (Parent Report), Wave 3.

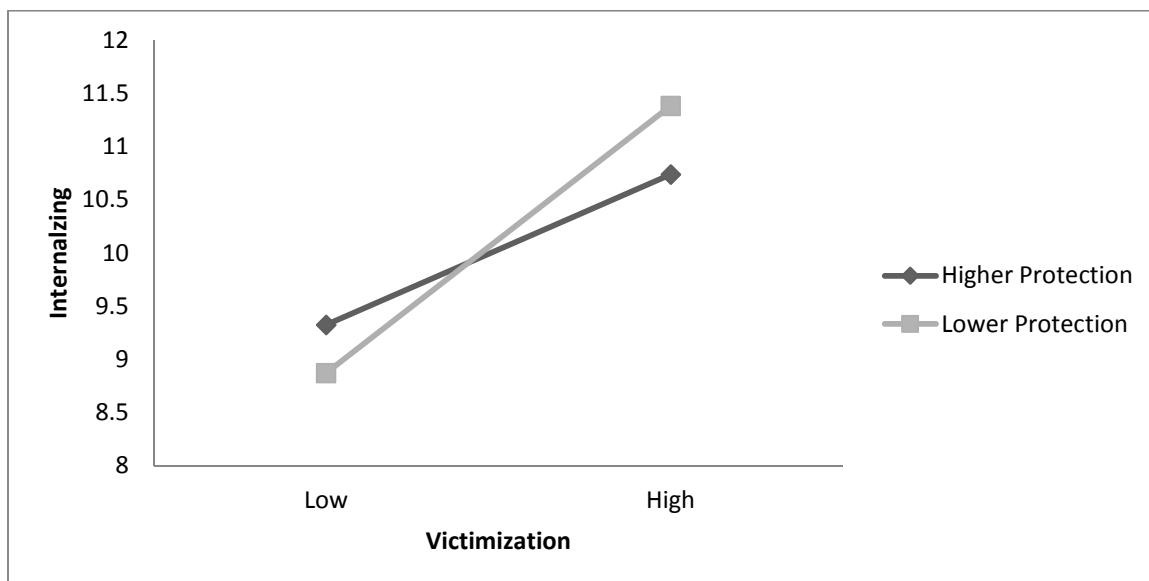


Figure 7. Wave 2 Victimization as a Moderator of the Relation between Class Membership and Wave 3 Internalizing Symptoms (Youth Report).

CHAPTER FIVE

DISCUSSION

The purpose of this study was to examine protective factors across ecological levels to determine if there are distinct groups or “profiles” of African American youth. It also aimed to examine whether these protective classes differentially predicted adjustment over time, as well as the risk factor of exposure to community violence affected the relationship between protective profile and outcome.

The results of this study suggested a 2-class solution of protective factors best described the African American participants in the study. The largest class (75.51% of the sample) was characterized by higher levels across most protective factors and was labeled as “Higher Protection.” The second class was labeled as “Lower Protection,” and was characterized by lower levels of protective factors. While the Higher Protection class had lower levels of internalizing and externalizing symptoms, as reported by parents, at Wave 1, class membership did not significantly predict to differences in parent-reported internalizing or externalizing symptoms or PTSD symptoms at Waves 2 and 3. While this was contrary to expectations, class membership did significantly predict youth-reported internalizing and externalizing symptoms at Wave 2, with the Higher Protection group having lower levels of symptoms. Finally, moderation analyses revealed several significant interactions between class membership and both

victimization and witnessing community violence predicting outcomes, suggesting that profiles found in this study were important in understanding resilience in this population.

This study built upon the current literature by examining individual differences in protective factors within African American youth, rather than using predetermined groups. Additionally, rather than examining one protective factor, the current study assessed protective factors across ecological levels (individual, family, peer, and community) to generate multidimensional profiles of protection. This type of analysis may be more valuable than studies that use preexisting cutoffs to create protective or risky groups. Moreover, few studies have attempted to examine how profiles interacted with risk to predict to outcomes, as this study did. The following section includes a review of the aims and hypotheses, a description of the findings, and a discussion of possible explanations for the findings. Finally, suggestions for future directions and clinical applications based upon the study are discussed.

Profile Analysis of Protective Factors

Scores from eight protective factors (Emotion Regulation, Sociability, Parental Monitoring, Family Cohesion, Social Support, Peer Relationships, and Collective Efficacy) were used as indicators for the classes and as stated above, a 2-class solution was found to be the best fit for the data. While no specific hypothesis was made regarding the number of profiles, it was expected that individual, family, peer, and community protective factors would cluster together at higher and lower levels to form profiles. Indeed, the Higher Protection group had higher scores on seven out of the eight

protective factors examined (with the exception of Family Social Support), as compared to the Lower Protection group.

While no studies have specifically examined the exact same measures in examining protective profiles, Copeland-Linder and colleagues (2010) also found that levels of risk and protective factors were stronger predictors in distinguishing profiles, rather than specific patterns or types of factors. Similar to this study, the researchers also found that the group that was highest on protective factors (labeled Moderate Risk/High Protection) was the largest (Copeland-Linder, Lambert, & Ialongo, 2010).

A closer analysis of the profiles revealed that the three protective factors of Emotion Regulation, Parental Monitoring, and Family Cohesion were significantly higher in the Higher Protection class, as compared to the Lower Protection class. Previous research has implicated each of these variables individually as important protective factors for high-risk youth (e.g., Zolkoski & Bullock, 2012) and those exposed to community violence (e.g. O'Donnell et al., 2002). Examined together, these three protective factors suggest that the Higher Protection class may be characterized by positive family systems qualities and parenting behaviors that helped develop the self-regulation skills within the individual child. This is supported by previous literature has suggested that individual-level protective factors and family-level protective factors may be viewed as a transactional relationship, such that family interactions shape the individual regulatory skills within the young child, which in turn then affect how the parents and family interact with the with child as he or she develops. In this case, one can speculate that for youth in the Higher Protection group, parental supervision and cohesion

within the family created an emotional atmosphere that allowed the youth to develop the regulation skills to respond effectively to their emotions (Houlberg, Henry, & Morris, 2012). However, it is important to note that a specific examination of this development of protective factors was beyond the scope of this study, and this process should be further tested in future research.

It is important to note that in the present study, several of the protective factors added relatively little to class distinction. Sociability, Positive Peers, Collective Efficacy, Peer Social Support, and Family Social Support did not significantly differ between the two classes. This was somewhat surprising, given the plethora of past research on the importance of these protective factors in discriminating groups of African American youth (e.g., Grant, et al., 2000). While this finding is difficult to understand, it may be that the differences between three protective factors of Emotion Regulation, Parental Monitoring, and Family Cohesion were strong enough to discriminate the classes. Alternatively, it may be that the protective factors chosen were all relatively high across the participants, making it difficult to differentiate the classes. Indeed, an examination of the distributions revealed low to moderate negative skewness, suggesting that the overall sample had scores at the higher ends of the protective factor measures. However, because these were not clinical scales, one is not able to determine if these higher scores on these measures are meaningful. Nonetheless, it would be valuable to understand how adding other protective factors to the LPA would change the class solution, as these results are limited to these specific factors chosen and a different set of classes may have emerged with other combinations.

In order to further validate the class solution, the two classes were also compared across demographic characteristics and Wave 1 symptomatology. The two classes significantly differed by gender, with the Lower class having significantly more males (58%) than the Higher Protection class (53.3%). However, there were no significant differences between the two classes in age or SES. This gender difference may support the suggestion that some researchers have made that gender is a protective/risk factor in and of itself, with female gender being protective and male gender as a risk factor (Fraser, Kirby, & Smokowski, 2004). Alternatively, the gender difference may indicate that the protective factors chosen may tend to be stronger in females, as compared to males. For example, Mandara and colleagues (2010, 2012) have found that there are different socialization processes for males and females in African American families, such that females have increased parental monitoring and warmer, closer relationships with parents. Furthermore, the gender differences in behavior, with males having poorer outcomes, were explained by the differential parenting approaches (Mandara, Murray, Telesford, Varner, & Richman, 2012). This influence of gender on protective factors will be important to further examine in future research.

Further validation of the class solution was completed by examining class differences in internalizing and externalizing symptoms at Wave 1. There were significant differences between the two classes, with the Lower Protection class having higher levels of both internalizing and externalizing symptoms, as reported by parents on the CBCL. This finding provided evidence of utility of the classes found through the LPA and suggests that the profile analysis based on the protective factors was meaningful in

terms of psychological functioning. This finding is supported by previous literature that youth with higher level of protective factors, across individual, family, and community levels, have more positive functioning than youth with lower levels of protective factors (e.g., Hammack et al., 2004; Li et al, 2007; O'Donnell et al, 2002).

Protective Profiles Predicting Mental Health Outcomes

The second aim of the study was to examine how the classes differentially predicted to outcomes. Specifically, we expected that subgroups of youth who experienced higher levels of protective factors at Wave 1 would have lower levels of internalizing, externalizing, and PTSD symptoms at Waves 2 and 3 than youth who had had lower levels of protective factors, controlling for Wave 1 outcomes when possible. Contrary to our expectations, class membership did not significantly predict parent-reported internalizing symptoms or externalizing symptoms at Wave 2, Wave 3, or longitudinally. It also did not significantly predict PTSD symptoms at Wave 2 or Wave 3. However, class membership did significantly predict youth-reported internalizing symptoms and was marginally significant in predicting externalizing symptoms at Wave 2, with the Lower Protection class having greater levels of these symptoms.

This finding suggests that parents did not report lower levels of internalizing or externalizing symptoms in the Higher Protection class as compared to the Lower Protection class. However, youth in the Higher Protection class rated themselves as having lower levels of both of symptoms across both internalizing and externalizing symptoms at Wave 2. These differential findings between parent and youth-report are common in the literature, especially as children begin to move from childhood to

adolescence (Sourander, Helstela, & Helenius, 1999). At Wave 2, the participants were well into their teenage years and parents have been found to be poor reporters of their children's symptoms at this age.

Another possibility for the lack of overall findings is the relatively long time period between when protective factors were measured at Wave 1 and the outcomes were measured at Waves 2 and 3. The study was designed so that each wave of data was collected 2-3 years apart, resulting in a potential 5-6 year gap between Wave and 3, and a time period where the youth moved from the middle schools years to late adolescence. While we hoped that many of these protective factors continue to have positive influences on the youth throughout their development, a review of the research demonstrates that there is often little continuity in positive outcomes, especially in samples that may be considered high-risk (Vanderbilt-Adriance & Shaw, 2008) or have been exposed to community violence (Jain et al., 2012). For example, Sameroff and colleagues (1998, 2006) have found that the best predictor of later mental health and IQ scores was the individual's amount of risk, rather than their amount of "competence" (or protective factor) and concluded that resilience often cannot overcome repeated risk. In this way, it may be important for future studies to not only examine protective factors predicting competence over time, but also the continuity and discontinuity of these particular groups of protective factors.

Exposure to Community Violence: Risk or Resilience?

Beyond identifying the profiles, this study was also interested in understanding how these distinct profiles of protective factors interacted with the risk of exposure to

community violence. This analysis was important in order to further understand how the classes differentially predicted to risk or resilience. Previous researchers, such as Luthar, Cicchetti, & Becker (2000) have distinguished resilience from other concepts, such as positive adjustment, by the presence of a risk factor. Thus, in order to truly understand whether the profiles found from the LPA were associated with resilience, it was necessary to look at the interaction between the protective profiles and risk.

Consistent with other samples (Bell & Jenkins, 1993; Bender & Roberts, 2009; Richters & Martinez, 1993) participants in this study were exposed to high levels of community violence, with more than 63% reporting victimization by violence and 98% witnessing at least one violent event. As predicted, this exposure to community violence was significantly related to negative youth outcomes. At Wave 2, victimization by violence was associated with higher levels of both parent and youth-report of externalizing and internalizing symptoms, as well as PTSD symptoms. Witnessing violence at Wave 2 was associated with higher levels of youth-reported externalizing, internalizing, and PTSD symptoms. At Wave 3, witnessing and victimization were associated with only youth-report of internalizing and externalizing symptoms. Finally, longitudinally, youth who were victims of violence at Wave 2 self-reported higher levels of internalizing symptoms, while youth who were witnesses of violence had self-reported higher levels of externalizing symptoms.

Results from this study demonstrated that higher levels of both victimization and witnessing community violence exposure are associated with both internalizing and externalizing symptoms. This supports previous literature that exposure to community

violence has harmful effects on development (Fowler et al., 2009). However, a closer examination of the pattern of results reveals that only victimization was linked to parent-reported negative outcomes, while youth-reported symptoms were associated with both witnessing and victimization. This is interesting given that the youth were reporting on their own violence exposure and may have had a better understanding of how it was affecting them. Furthermore, it may be that parents were more likely to be aware about their child being victimized, given that it is a more direct experience, and may be more likely to rate their child as having difficulties given this trauma. Previous research has supported this possibility, with the greatest divergent mother-child accounts of violence exposure found related to witnessing violence and psychological distress (Ceballo, Dahl, Aretakis, & Ramirez, 2001).

This study builds on previous research examining the effects of community violence on mental health symptoms. While externalizing symptoms have a relatively well-established association with exposure to violence, internalizing symptoms have less strongly indicated (for a review, see Fowler et al., 2009). For example, Fitzpatrick and Boldizar (1993) found that violent victimization, but not witnessing violence, predicted depression in African American youth. Despite some differences in patterns with parent and child report, this study suggests that both internalizing and externalizing outcomes are important to examine in violence-exposed youth.

While significant results were found both cross-sectionally and longitudinally, the strongest associations between exposure to community violence and outcomes were found at Wave 2, with fewer negative outcomes found at Wave 3 or longitudinally.

Additionally, the link between exposure to violence and PTSD was only found at Wave 2. This may suggest that as youth grew older that were better able to adapt to the risk of violence exposure. Supporting this finding, some researchers have theorized that children living in high crime areas become psychosocially desensitized from repeated exposure to violence which protects them emotional distress and the consequent negative effects (Garbarino, Kostelny, & Dubow, 1991). Ng-Mak and colleagues (2002, 2004) describe youth exposed to violence as developing a pathologic adaptation to violence, such that consistent exposure leads to beliefs that normalize violence. This is contrary to the traumatic stress paradigm of violence that many researchers have suggested, in which assumes that children exposed to greater levels of violence will have worse outcomes. As children in violent communities develop, they begin to realize that if they normalize the violence they are seeing in their everyday lives, they will become less affected by it (Ng-Mak, Salzinger, Feldman, & Stueve, 2002). Supporting this, a recent study by Gaylord-Harden and colleagues (2015) used a person-centered analysis to examine the relationships between levels and types of violence exposure and outcomes and determined that the group of adolescents with the highest violence exposure had the lowest levels of depressive symptoms. While the mechanisms through which this adaptation to violence occurs in children are still unknown, specific coping or cognitive mechanisms may allow children to become gradually desensitized to the realities of their violent environment (Ng-Mak, et al., 2004). Other researchers have found that as youths, living in highly violent communities, moved through adolescence, their use of approach coping strategies increased (Griffith, Dubow, & Ippolito, 2000).

Results demonstrated that there were differential outcomes between classes based on their levels of exposure to violence, such that several significant Class \times Exposure to Violence interactions were found. Overall, the pattern of interactions revealed that negative outcomes were highest for youth in the Lower Protection class at high levels of community violence. This pattern held true even when the High Protection class had increased symptoms at higher levels of risk, as the increase (as determined by the magnitude of the relationship) was consistently much greater in the Lower Protection class. Thus, youth in the Higher Protection class had more positive outcomes, or lower levels of symptoms, at higher levels of risk as compared to the Lower Protection class. This type of interaction can be labeled as a “protective-stabilizing,” according to the criteria set forth by Luthar and colleagues (2000). In these types of interactions, adjustment difficulties are low and remain relatively stable despite increasing risk when protective factors are high, as seen in the Higher Protection class. However, at lower levels of the protection, such as in the Lower Protection class, adjustment difficulties increase with increasing risk.

Thus, together the combination and level of protective factors found in the Higher Protection class buffered the effects of community violence exposure on negative outcomes. This finding builds on previous research that has examined Luthar et al.’s (2000) patterns of risk-protection to examine resilience. For example, Li, Nussbaum, and Richards (2007) found that the protective-stabilizing interaction pattern best described the urban African American youth exposed to multiple-risks, including daily hassles, exposure to violence, and poverty. As few studies have examined these specific patterns

or processes, this study demonstrates the value in examining interaction effects when determining resilience. It is not enough to simply examine main effects in understanding the relationship between protective and risk factors, as they fail to depict the complexity of how protective factors may function under varying levels of risk. Results from this study highlights the importance of higher levels of protective factors across ecological levels, especially the specific combination of emotion regulation, family cohesion, and parental monitoring, is most valuable when risk is high.

Limitations, Strengths, and Future Directions

Before attempting to understand the implications of the results, there are several limitations that should be considered. First, the sample used in this study was a group of African American youth growing up in in Chicago neighborhoods during a certain time period. While the experiences of these individuals are certainly important to examine, the findings of this study have limited external validity. It is difficult to generalize the findings of this study to other groups, such as those who experience different types of trauma or who live in different environments. Future research should examine similar models with diverse samples, including age, ethnicity, and culture.

Another limitation of this study concerns measurement. While multi-reporter methods were used for internalizing and externalizing symptoms, many of the other constructs were measured only by a single reporter (either child or parent only). Additional parent-report or teacher-report measures may have provided a more complete picture of the child's functioning in several settings, as well as offer information about how different individuals in the child's life diverge in their reporting. Additionally,

several of the measures were not available at all three waves of data (e.g., protective factor measures, exposure to community violence, YSR, and PTSD measures). This prohibited us from truly understanding how protection and risk changed over time in these youth. In future studies, researchers should aim to examine how the protective profiles change over time, through analyses such as Latent Transition Analysis (LTA), and how these changes predict to outcomes.

Furthermore, the only risk measured in this study was exposure to community violence. While this specific risk is an important one to examine, especially for African American youth in Chicago, only focusing on one risk factor may not be capturing the full risk experiences of the sample. Previous research has demonstrated that risk does not occur in isolation and many children experience multiple adversities over time. In this way, future research should aim to examine cumulative risk factors to understand resilience processes more fully (Wright, Masten, Narayan, 2013).

The final limitation of the study concerns the research design and statistical analysis. While the study followed the participants longitudinally over three waves, causal inferences are still difficult to be drawn from these data. None of the variables was manipulated and no alternate models were tested. It is very possible that other variables or constructs that were not measured in this study may help explain the relations between protective factors and adjustment. Future studies should aim to test other plausible models, including additional individual, family, and community characteristics, as well as their interactions.

Even with these limitations, the current study has several strengths. This is one of the first studies to use a person-centered analysis to examine protective factors and their interaction with the risk of exposure to community violence in predicting longitudinal outcomes in African American youth. Many studies have examined these factors using variable-centered approaches and added to our knowledge of both risk and protection. However, a variable-centered approach would not have identified these profile groups. A person-centered approach is a more efficient way to identify groups of youth based on a combination of factors. It will be important for researchers to continue to use person-centered approaches

Another major strength of this study is its design. Few studies have been able to follow such a large sample of at-risk youth over an extended period of time in their attempt to understand outcomes. Additionally, very few researchers have examined the differences in witnessing violence versus being victimized by violence in the same study. While this study cannot prove causality, the longitudinal design of the present study over three waves furthers our knowledge about the developmental course of African American youth exposed to community violence.

Given the strengths of this study, there are important implications for how interventions may be developed for African American youth. Most importantly, results suggest that there are distinct groups of youth based on levels of protective factors. Distinguishing between these youth has important implications for identifying youth who are at the greatest need of intervention and for characterizing youth who may benefit the most from prevention and intervention programs (van Lier, Muthen, van der Sar, &

Crijnen, 2004). Youth with lower levels of protective factors across ecological levels are at greatest risk for negative outcomes when they experience community violence. Thus, programs should target these children and adolescents as being at highest-risk and aim to further strengthen their protective factors. All of the protective factors in the study were chosen partly because they are changeable (as opposed to more set protective factors, such as IQ or gender) and responsive to intervention. Moreover, because the two groups were significantly different on the protective factors of Emotion Regulation, Family Cohesion, and Parental Monitoring, these specific factors in intervention work with families may be most beneficial to target, especially for those who are at greatest risk. While reducing the risk of exposure to community violence is an admirable goal, it has shown itself to be difficult. Thus, this study demonstrates that both clinical and community-based prevention and intervention programs can help promote positive adjustment in youth by building protective factors across the individual, family, peer, and community levels.

REFERENCES

- Achenbach, T. M. (1991). *Child behavior checklist/4–18*. Burlington: University of Vermont.
- Achenbach, T. M. (1991). *Manual for the YSR and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.
- Akaike, H. (1987). Factor analysis and AIC. *Psychometrika*, *52*(3), 317–332.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression*. Beverly Hills, CA: Sage.
- Aisenberg, E., & Herrenkohl, T. (2008). Community violence in context risk and resilience in children and families. *Journal of interpersonal violence*, *23*(3), 296–315.
- Bacchini, D., Miranda, M. C., & Affuso, G. (2011). Effects of parental monitoring and exposure to community violence on antisocial behavior and anxiety/depression among adolescents. *Journal of interpersonal violence*, *26*(2), 269–292.
- Bell, C. C., & Jenkins, E. J. (1993). Community violence and children on Chicago's southside. *Psychiatry: Interpersonal and Biological Processes*.
- Bender, J. A., & Roberts, M. C. (2009). Exposure to violence, perceived peer relationships, and corresponding psychological sequelae. *Journal of Child and Family Studies*, *18*(3), 350–355.
- Berg, M. T., & Loeber, R. (2011). Examining the neighborhood context of the violent offending-victimization relationship: A prospective investigation. *Journal of Quantitative Criminology*, *27*(4), 427–451.
- Block, J. (2000). Three tasks for personality psychology. In L. R. Bergman, R. B. Cairns, L.-G. Nilsson, & L. Nystedt (Eds.), *Developmental science and the holistic approach* (pp. 155–164). Mahwah, NJ: Erlbaum.
- Bowen, G. L., & Chapman, M. V. (1996). Poverty, neighborhood danger, social support, and the individual adaptation among at-risk youth in urban areas. *Journal of Family Issues*, *17*(5), 641–666.
- Bradshaw, C. P., Rodgers, C. R., Ghandour, L. A., & Garbarino, J. (2009). Social-cognitive mediators of the association between community violence exposure and aggressive behavior. *School Psychology Quarterly*, *24*(3), 199–210.

- Brandt, R., Ward, C. L., Dawes, A., & Flisher, A. J. (2005). Epidemiological measurement of children's and adolescents' exposure to community violence: Working with the current state of the science. *Clinical Child and Family Psychology Review*, 8(4), 327–342.
- Brookmeyer, K. A., Henrich, C. C., & SchwabStone, M. (2005). Adolescents who witness community violence: Can parent support and prosocial cognitions protect them from committing violence? *Child Development*, 76(4), 917–929.
- Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist*, 34(10), 844–850.
- Buckner, J. C., Mezzacappa, E., & Beardslee, W. R. (2003). Characteristics of resilient youths living in poverty: The role of self-regulatory processes. *Development and psychopathology*, 15(1), 139–162.
- Bureau of Justice Statistics. (2007). Criminal victimization in the United States. Retrieved from <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=1743>
- Ceballo, R., Dahl, T. A., Aretakis, M. T., & Ramirez, C. (2001). Inner-City children's exposure to community violence: How much do parents know? *Journal of Marriage and Family*, 63(4), 927–940.
- Cicchetti, D. (Ed.). (1989). *Rochester symposium on developmental psychopathology: The emergence of a discipline* (Vol. 1). Hillsdale, NJ: Erlbaum.
- Cicchetti, D., & Lynch, M. (1993). Toward an ecological/transactional model of community violence and child maltreatment: Consequences for children's development. *Psychiatry: Interpersonal and biological processes*.
- Cicchetti, D., & Rogosch, F. A. (2002). A developmental psychopathology perspective on adolescence. *Journal of consulting and clinical psychology*, 70(1), 6–20.
- Clark, T. T., Belgrave, F. Z., & Abell, M. (2012). The mediating and moderating effects of parent and peer influences upon drug use among African American adolescents. *Journal of Black Psychology*, 38(1), 52–80.
- Clark, S., & Muthén, B. (2009). *Relating latent class analysis results to variables not included in the analysis*. Manuscript submitted for publication and downloaded. Retrieved from Stat Model website: <http://www.statmodel.com/download/relatinglca.pdf>
- Coatsworth, D. J. (2010). A developmental psychopathology and resilience perspective on 21st century competencies. *Retrieved*, 10(10).

- Coie, J. D., Watt, N. F., West, S. G., Hawkins, J. D., Asarnow, J. R., Markman, H. J., . . . Long, B. (1993). The science of prevention: a conceptual framework and some directions for a national research program. *American Psychologist*, *48*(10), 1013–1022.
- Cooley-Strickland, M., Quille, T. J., Griffin, R. S., Stuart, E. A., Bradshaw, C. P., & Furr-Holden, D. (2009). Community violence and youth: Affect, behavior, substance use, and academics. *Clinical child and family psychology review*, *12*(2), 127–156.
- Cooley-Quille, M., Boyd, R. C., Frantz, E., & Walsh, J. (2001). Emotional and behavioral impact of exposure to community violence in inner-city adolescents. *Journal of Clinical Child Psychology*, *30*(2), 199–206.
- Copeland-Linder, N., Lambert, S. F., & Ialongo, N. S. (2010). Community violence, protective factors, and adolescent mental health: A profile analysis. *Journal of Clinical Child & Adolescent Psychology*, *39*(2), 176–186.
- Crouch, J. L., Hanson, R. F., Saunders, B. E., Kilpatrick, D. G., & Resnick, H. S. (2000). Income, race/ethnicity, and exposure to violence in youth: Results from the national survey of adolescents. *Journal of Community Psychology*, *28*(6), 625–641.
- Cunningham, J. N., Kliwer, W., & Garner, P. W. (2009). Emotion socialization, child emotion understanding and regulation, and adjustment in urban African American families: Differential associations across child gender. *Development and Psychopathology*, *21*(01), 261–283.
- Dalton, J. H., Elias, M. J., & Wandersman, A. (2007). *Community psychology: Linking individual and communities*. Belmont, CA: Thomson Wadsworth.
- Dodge, K. A., Lochman, J. E., Harnish, J. D., Bates, J. E., & Pettit, G. S. (1997). Reactive and proactive aggression in school children and psychiatrically impaired chronically assaultive youth. *Journal of Abnormal Psychology*, *106*(1), 37–51.
- Eisenberg, N., Gershoff, E. T., Fabes, R. A., Shepard, S. A., Cumberland, A. J., Losoya, S. H., . . . Murphy, B. C. (2001). Mother's emotional expressivity and children's behavior problems and social competence: Mediation through children's regulation. *Developmental psychology*, *37*(4), 475–490.
- Finkelhor, D., Turner, H., Ormrod, R., Hamby, S., & Kracke, K. (2009). National Survey of Children's Exposure to Violence. *Juvenile Justice Bulletin*.
- Fitzpatrick, K. M., & Boldizar, J. P. (1993). The prevalence and consequences of exposure to violence among African American youth. *Journal of the American Academy of Child & Adolescent Psychiatry*, *32*(2), 424–430.

- Foster, J. D., Kuperminc, G. P., & Price, A. W. (2004). Gender differences in posttraumatic stress and related symptoms among inner-city minority youth exposed to community violence. *Journal of Youth and Adolescence*, *33*(1), 59–69.
- Fowler, P. J., Tompsett, C. J., Braciszewski, J. M., Jacques-Tiura, A. J., & Baltes, B. B. (2009). Community violence: A meta-analysis on the effect of exposure and mental health outcomes of children and adolescents. *Development and Psychopathology*, *21*(1), 227–259.
- Fraser, M. W. (2004). The ecology of childhood: A multisystems perspective. In M. W. Fraser (Ed.), *Risk and resilience in childhood: An ecological perspective* (2nd ed., pp. 1–12). Washington, DC: NASW Press.
- Fraser, M. W., Kirby, L. D., & Smokowski, P. R. (2004). Risk and resilience in childhood. In M. W. Fraser (Ed.) *Risk and resilience in childhood: An ecological perspective* (2nd ed., pp. 13 –66). Washington D C: NASW Press.
- Garbarino, J. (1992). *Children in danger: Coping with the consequences of community violence*. San Francisco, CA: Jossey-Bass.
- Garbarino, J. (2001). An ecological perspective on the effects of violence on children. *Journal of Community Psychology*, *29*(3), 361–378.
- Garbarino, J., Kostelny, K., & Dubow, N. (1991). What children can tell us about living in danger. *American Psychologist*, *46*(4), 376–383.
- Garmezy, N. (1993). Children in poverty: Resilience despite risk. *Psychiatry*, *56*(1), 127–130.
- Gaylord-Harden, N. K., Dickson, D., & Pierre, C. (2015). Profiles of community violence exposure Among African American youth: An Examination of desensitization to violence using Latent Class Analysis. *Journal of Interpersonal Violence*, 1–25.
- Gonzales, N. A., Cauce, A. M., Friedman, R. J., & Mason, C. A. (1996). Family, peer, and neighborhood influences on academic achievement among African American adolescents: One-year prospective effects. *American journal of community psychology*, *24*(3), 365–387.
- Gorman-Smith, D., Henry, D. B., & Tolan, P. H. (2004). Exposure to community violence and violence perpetration: The protective effects of family functioning. *Journal of Clinical Child and Adolescent Psychology*, *33*(3), 439–449.
- Gorman-Smith, D., & Tolan, P. (1998). The role of exposure to community violence and developmental problems among inner-city youth. *Development and Psychopathology*, *10*(1), 101–116.

- Griffith, M. A., Dubow, E. F., & Ippolito, M. F. (2000). Developmental and cross-situational differences in adolescents' coping strategies. *Journal of Youth and Adolescence, 29*(2), 183–204.
- Hammack, P. L., Richards, M. H., Luo, Z., Edlynn, E. S., & Roy, K. (2004). Social support factors as moderators of community violence exposure among inner-city African American young adolescents. *Journal of Clinical Child and Adolescent Psychology, 33*(3), 450–462.
- Harden, B. J., & Koblinsky, S. A. (1999). Double exposure: Children affected by family and community violence. *Family violence: Prevention and treatment, 2*, 66–101.
- Holmbeck, G. N. (2002). Post-hoc probing of significant moderational and mediational effects in studies of pediatric populations. *Journal of pediatric psychology, 27*(1), 87–96.
- Houltberg, B. J., Henry, C. S., & Morris, A. S. (2012). Family interactions, exposure to violence, and emotion regulation: Perceptions of children and early adolescents at risk. *Family Relations, 61*(2), 283–296.
- Huizinga, D., Esbenson, F., & Weiher, A. W. (1991). Are there multiple paths to delinquency? *The Journal of Criminal Law and Criminology, 82*, 83–118.
- Jain, S., Buka, S. L., Subramanian, S. V., & Molnar, B. E. (2012). Protective factors for youth exposed to violence: Role of developmental assets in building emotional resilience. *Youth Violence and Juvenile Justice, 10*(1), 107–129.
- Jarrett, R. L. (1999). Successful parenting in high-risk neighborhoods. *The Future of Children, 45–50*.
- Jenson, J. M., & Fraser, M. W. (2006). A risk and resilience framework for child, youth, and family policy. *Social policy for children & families: A risk and resilience perspective, 1–18*.
- Kaminer, D., Seedat, S., & Stein, D. J. (2005). Post-traumatic stress disorder in children. *World Psychiatry, 4*(2), 121.
- Katz, L. F., Hessler, D. M., & Anest, A. (2007). Domestic violence, emotional competence, and child adjustment. *Social Development, 16*(3), 513–538.
- Kliewer, W., Cunningham, J. N., Diehl, R., Parrish, K. A., Walker, J. M., Atiyeh, C. . . . Mejia, R. (2004). Violence exposure and adjustment in inner-city youth: Child and caregiver emotion regulation skill, caregiver–child relationship quality, and neighborhood cohesion as protective factor. *Journal of Clinical Child and Adolescent Psychology, 33*(3), 477–487.

- Kliewer, W., Lepore, S. J., Oskin, D., & Johnson, P. D. (1998). The role of social and cognitive processes in children's adjustment to community violence. *Journal of consulting and clinical psychology, 66*(1), 199–209.
- Lambert, S. F., Nylund-Gibson, K., Copeland-Linder, N., & Ialongo, N. S. (2010). Patterns of community violence exposure during adolescence. *American journal of community psychology, 46*(3–4), 289–302.
- Larson, R. W., Raffaelli, M., Richards, M. H., Ham, M., & Jewell, L. (1990). Ecology of depression in late childhood and early adolescence: A profile of daily states and activities. *Journal of Abnormal Psychology, 99*(1), 92–102.
- Larson, R. W., Richards, M. H., Sims, B., & Dworkin, J. (2001). How urban African American young adolescents spend their time: Time budgets for locations, activities, and companionship. *American Journal of Community Psychology, 29*(4), 565–597.
- Li, S. T., Nussbaum, K. M., & Richards, M. H. (2007). Risk and protective factors for urban African American youth. *American Journal of Community Psychology, 39*(1–2), 21–35.
- Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika, 88*(3), 767–778.
- Lubke, G., & Muthén, B. O. (2007). Performance of factor mixture models as a function of model size, covariate effects, and class-specific parameters. *Structural Equation Modeling, 14*(1), 26–47.
- Luthar, S. S. (1991). Vulnerability and resilience: A study of high-risk adolescents. *Child development, 62*(3), 600–616.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child development, 71*(3), 543–562.
- Lynch, M. (2003). Consequences of children's exposure to community violence. *Clinical child and family psychology review, 6*(4), 265–274.
- Lynch, M., & Cicchetti, D. (1998). An ecological-transactional analysis of children and contexts: The longitudinal interplay among child maltreatment, community violence, and children's symptomatology. *Development and psychopathology, 10*(2), 235–257.
- Maimon, D., & Browning, C. R. (2010). Unstructured socializing, collective efficacy, and violent behavior among urban youth. *Criminology, 48*(2), 443–474.

- Magidson, J., & Vermunt, J. (2002). Latent class models for clustering: A comparison with K-means. *Canadian Journal of Marketing Research*, 20(1), 36–43.
- Magnusson, D. (2001). The holistic-interactionistic paradigm: Some directions for empirical developmental research. *European Psychologist*, 6(3), 153–162.
- Mandara, J. (2003). The typological approach in child and family psychology: A review of theory, methods, and research. *Clinical child and family psychology review*, 6(2), 129–146.
- Mandara, J., Murray, C. B., Telesford, J. M., Varner, F. A., & Richman, S. B. (2012). Observed gender differences in African American mother-child relationships and child behavior. *Family Relations*, 61(1), 129–141.
- Mandara, J., Varner, F., & Richman, S. (2010). Do African American mothers really “love” their sons and “raise” their daughters? *Journal of Family Psychology*, 24(1), 41–50.
- Martin, K. R., & Schoua-Glusberg, A. (2002). *Project on human development in Chicago neighborhoods longitudinal cohort study: Field data collection report*. Cambridge, MA: Harvard University.
- Mash, E. J., & Dozois, D. J. A. (2003). Child psychopathology: A developmental-systems perspective. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (2nd ed., pp. 3–71). New York, NY: Guilford Press.
- Mason, C. A., Cauce, A. M., Gonzales, N., & Hiraga, Y. (1996). Neither too sweet nor too sour: Problem peers, maternal control, and problem behavior in African American adolescents. *Child Development*, 67(5), 2115–2130.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American psychologist*, 56(3), 227–238.
- Masten, A. S., & Powell, J. L. (2003). A resilience framework for research, policy, and practice. In S. Suniya (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 1–25). New York, NY: Cambridge University Press.
- McGee, Z. T. (2003). Community violence and adolescent development an examination of risk and protective factors among African American Youth. *Journal of Contemporary Criminal Justice*, 19(3), 293–314.
- Miller, L. S., Wasserman, G. A., Neugebauer, R., Gorman-Smith, D., & Kamboukos, D. (1999). Witnessed community violence and antisocial behavior in high-risk, urban boys. *Journal of Clinical Child Psychology*, 28(1), 2–11.

- Muthén, B., & Muthén, L. K. (2000). Integrating person-centered and variable-centered analyses: Growth mixture modeling with latent trajectory classes. *Alcoholism: Clinical and experimental research*, 24(6), 882–891.
- Muthén, L. K., & Muthén, B. O. (2007). 1998–2007. Mplus User's Guide. Los Angeles, CA: Muthén & Muthén.
- Ng-Mak, D. S., Salzinger, S., Feldman, R. S., & Stueve, C. (2004). Pathologic adaptation to community violence among inner-city youth. *American Journal of Orthopsychiatry*, 74(2), 196–208.
- O'Donnell, D. A., Schwab–Stone, M. E., & Muyeed, A. Z. (2002). Multidimensional resilience in urban children exposed to community violence. *Child development*, 73(4), 1265–1282.
- Ortiz, V., Richards, M., Kohl, K., & Zaddach, C. (2008). Trauma symptoms among urban African American young adolescents: A study of daily experience. *Journal of Child & Adolescent Trauma*, 1(2), 135–152.
- Osofsky, J. D. (1995). The effect of exposure to violence on young children. *American Psychologist*, 50(9), 782–788.
- Overstreet, S., & Braun, S. (1999). A preliminary examination of the relationship between exposure to community violence and academic functioning. *School Psychology Quarterly*, 14(4), 380–396.
- Overstreet, S., & Braun, S. (2000). Exposure to community violence and post-traumatic stress symptoms: Mediating factors. *American Journal of Orthopsychiatry*, 70(2), 263–271.
- Overstreet, S., & Mazza, J. (2003). An ecological-transactional understanding of community violence: Theoretical perspectives. *School Psychology Quarterly*, 18(1), 66–87.
- Parra, G. R., DuBois, D. L., & Sher, K. J. (2006). Investigation of profiles of risk factors for adolescent psychopathology: A person-centered approach. *Journal of Clinical Child and Adolescent Psychology*, 35(3), 386–402.
- Proctor, L. J. (2006). Children growing up in a violent community: The role of the family. *Aggression and Violent Behavior*, 11(6), 558–576.
- Ramaswamy, V., DeSarbo, W. S., Reibstein, D. J., & Robinson, W. T. (1993). An empirical pooling approach for estimating marketing mix elasticities with PIMS data. *Marketing Science*, 12(1), 103–124.

- Resnick, M. D., Ireland, M., & Borowsky, I. (2004). Youth violence perpetration: What protects? What predicts? Findings from the National Longitudinal Study of Adolescent Health. *Journal of Adolescent Health, 35*(5), 424.e1–e10.
- Richards, M. H., Miller, B. V., O'Donnell, P. C., Wasserman, M. S., & Colder, C. (2004). Parental monitoring mediates the effects of age and sex on problem behaviors among African American urban young adolescents. *Journal of Youth and Adolescence, 33*(3), 221–233.
- Richters, J. E., & Martinez, P. (1993). The NIMH community violence project: I. Children as victims of and witnesses to violence. *Psychiatry, 56*(1), 7–21.
- Richters, J. E., & Saltzman, W. (1990). *Survey of exposure to community violence: Self-report version*. Rockville, MD: National Institute of Mental Health.
- Ronzio, C. R., Mitchell, S. J., & Wang, J. (2011). The structure of witnessed community violence amongst Urban African American mothers: Latent class analysis of a community sample. *Urban Studies Research, 2011*.
- Rutter, M. (2000). Resilience reconsidered: Conceptual considerations, empirical findings, and policy implications. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (2nd ed., pp. 651–682). New York, NY: Cambridge University Press.
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and psychopathology, 24*(2), 335–344.
- Salzinger, S., Feldman, R. S., Ng-Mak, D. S., Mojica, E., Stockhammer, T., & Rosario, M. (2002). Effects of partner violence and physical child abuse on child behavior: A study of abused and comparison children. *Journal of Family Violence, 17*(1), 23–52.
- Sameroff, A. E. (2009). *The transactional model of development: How children and contexts shape each other*. American Psychological Association.
- Sameroff, A. J., Bartko, W. T., Baldwin, A., Baldwin, C., & Seifer, R. (1998). Family and social influences on the development of child competence. In M. Lewis & C. Feiring (Eds.), *Families, risk, and competence* (pp. 161–185). Mahwah, NJ: Erlbaum.
- Sameroff, A. J., & Rosenblum, K. L. (2006). Psychosocial constraints on the development of resilience. *Annals of the New York Academy of Sciences, 1094*(1), 116–124.

- Sampson, R. J. (2001). How do communities undergird or undermine human development? Relevant contexts and social mechanisms. *Does it take a village? Community effects on children, adolescents, and families*, 3–30.
- Sampson, R. J., Morenoff, J. D., & Raudenbush, S. (2005). Social anatomy of racial and ethnic disparities in violence. *Journal Information*, 95(2), 224–232.
- Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277(5328), 918–924.
- Scales, P. C., & Leffert, N. (1999). *Developmental assets: A synthesis of the scientific research on adolescent development*. Minneapolis, MN: Search Institute.
- Schwartz, D., & Proctor, L. J. (2000). Community violence exposure and children's social adjustment in the school peer group: The mediating roles of emotion regulation and social cognition. *Journal of Consulting and Clinical Psychology*, 68(4), 670–683.
- Schwarz, Gideon E. (1978). Estimating the dimension of a model. *Annals of Statistics*, 6(2), 461–464.
- Schmiege, S. J., Meek, P., Bryan, A. D., & Petersen, H. (2012). Latent variable mixture modeling: a flexible statistical approach for identifying and classifying heterogeneity. *Nursing Research*, 61(3), 204–212.
- Sclove, S. L. (1987). Application of model-selection criteria to some problems in multivariate analysis. *Psychometrika*, 52(3), 333–343.
- Sheidow, A. J., Gorman-Smith, D., Tolan, P. H., & Henry, D. B. (2001). Family and community characteristics: Risk factors for violence exposure in inner-city youth. *Journal of Community Psychology*, 29(3), 345–360.
- Selner-O'Hagan, M. B., Kindlon, D. J., Buka, S. L., Raudenbush, S. W., & Earls, F. J. (1998). Assessing exposure to violence in urban youth. *Journal of Child Psychology and Psychiatry*, 39(2), 215–224.
- Silk, J. S., Shaw, D. S., Forbes, E. E., Lane, T. L., & Kovacs, M. (2006). Maternal depression and child internalizing: The moderating role of child emotion regulation. *Journal of Clinical Child and Adolescent Psychology*, 35(1), 116–126.
- Silk, J. S., Steinberg, L., & Morris, A. S. (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Child development*, 74(6), 1869–1880.

- Southam-Gerow, M. A., & Kendall, P. C. (2002). Emotion regulation and understanding: Implications for child psychopathology and therapy. *Clinical psychology review, 22*(2), 189–222.
- Sroufe, L. A., & Rutter, M. (1984). The domain of developmental psychopathology. *Child development, 17*–29.
- Stein, B. D., Jaycox, L. H., Kataoka, S., Rhodes, H. J., & Vestal, K. D. (2003). Prevalence of child and adolescent exposure to community violence. *Clinical child and family psychology review, 6*(4), 247–264.
- Sullivan, T. N., Kung, E. M., & Farrell, A. D. (2004). Relation between witnessing violence and drug use initiation among rural adolescents: Parental monitoring and family support as protective factors. *Journal of Clinical Child and Adolescent Psychology, 33*(3), 488–498.
- Ungar, M. (2011). The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *American Journal of Orthopsychiatry, 81*(1), 1–17.
- Valdez, C. R., Lambert, S. F., & Ialongo, N. S. (2011). Identifying patterns of early risk for mental health and academic problems in adolescence: a longitudinal study of urban youth. *Child Psychiatry & Human Development, 42*(5), 521–538.
- van der Kolk, B. A., Roth, S., Pelcovitz, D., Sunday, S., & Spinazzola, J. (2005). Disorders of extreme stress: The empirical foundation of a complex adaptation to trauma. *Journal of traumatic stress, 18*(5), 389–399.
- Van Lier, P. A., Muthén, B. O., van der Sar, R. M., & Crijnen, A. A. (2004). Preventing disruptive behavior in elementary schoolchildren: impact of a universal classroom-based intervention. *Journal of Consulting and Clinical Psychology, 72*(3), 467–478.
- Vermunt, J. K., & Magidson, J. (2002). Latent class cluster analysis. *Applied latent class analysis, 89*–106.
- Wallen, J., & Rubin, R. H. (1997). The role of the family in mediating the effects of community violence on children. *Aggression and Violent Behavior, 2*(1), 33–41.
- Werner, E. E. (1984.). Resilient children. *Young Children, 40*, 68–72.
- Wright, M. O. D., Masten, A. S., & Narayan, A. J. (2013). Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (2nd ed., pp. 15–37). New York, NY: Springer.

Zolkoski, S. M., & Bullock, L. M. (2012). Resilience in children and youth: A review. *Children and Youth Services Review, 34*(12), 2295–2303.

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