

# Community Violence, Protective Factors, and Adolescent Mental Health: A Profile Analysis

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This study examined interrelationships among community violence exposure, protective factors, and mental health in a sample of urban, predominantly African American adolescents ( $N = 504$ ). Latent Profile Analysis was conducted to identify profiles of adolescents based on a combination of community violence exposure, self-worth, parental monitoring, and parental involvement and to examine whether these profiles differentially predict adolescents' depressive symptoms and aggressive behavior. Three classes were identified—a vulnerable class, a moderate risk/medium protection class, and a moderate risk/high protection class. The classes differentially predicted depressive symptoms but not aggressive behavior for boys and girls. The class with the highest community violence exposure also had the lowest self-worth.

Community violence has been recognized as a major public health problem impacting the lives of youth (U.S. Surgeon General, 2001). African American adolescents and youth who reside in urban areas are disproportionately affected by community violence as victims and witnesses (Centers for Disease Control and Prevention, 2005; Crouch, Hanson, Saunders, Kilpatrick, & Resnick, 2000; Rennison, 1999). The most grave evidence of the toll that violence exposure is taking on

African American youth is that homicide continues to be the leading cause of death for youth ages 10 to 19 (Centers for Disease Control and Prevention, 2005). In addition to the risk of victimization, for many African American adolescents, as well as youth in urban areas, witnessing acts of violence is common. Some research indicates that between 50% and 96% of urban youth have witnessed community violence (Gorman-Smith, Henry, & Tolan, 2004). Among the urban youth in a study conducted by Miller, Wasserman, Neugebauer, Gorman-Smith, and Kamboukos (1999), 35% reported witnessing a stabbing, 33% had seen someone shot, and 23% had seen a dead body in their neighborhood.

Exposure to community violence as a victim or witness is associated with a number of emotional and behavioral problems including posttraumatic stress symptoms, internalizing symptoms, suicidal behavior, antisocial behavior, social withdrawal, substance use, and academic problems (e.g., Cooley-Quille, Boyd, Franz, & Walsh, 2001; Gorman-Smith & Tolan, 1998; Lambert, Copeland-Linder, & Ialongo, 2008; Litzman

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& Swisher, 2005). Despite the increased risk for these adverse outcomes, many youth are resilient in the face of community violence exposure (e.g., Gorman-Smith et al., 2004). However, compared to the growing body of research examining the effects of community risk on adolescent mental health, less is known about individual and family factors that protect youth who have been exposed to community violence. In particular, little is known about how community violence and individual and family protective factors interrelate. Guided by ecological theory (Bronfenbrenner, 1979) and a risk and resilience framework (e.g., Fergus & Zimmerman, 2005; Luthar, Cicchetti, & Becker, 2000; Masten, Best, & Garmezy, 1990; Rutter, 1987), this study utilizes a person-centered analytic approach to identify distinct profiles of community violence exposure, and individual and family protective factors to predict adolescent mental health.

### ECOLOGICAL THEORY AND RISK AND RESILIENCE APPROACH

Ecological theories (e.g., Bronfenbrenner, 1979) acknowledge that youth are shaped by multiple processes that occur at various levels, including the microlevel or immediate environment (e.g., family, schools, community) and the macrolevel (e.g., societal and cultural contexts). Ecological theory has guided much of the research on community violence exposure, because it provides a framework for understanding how community violence, an environmental stressor, can impact individual development and well-being.

A risk and resilience approach also has been applied to research on community violence to help explain variation in maladaptive as well as positive outcomes among youth (e.g., Gorman-Smith & Tolan, 2003). Resilience is defined as a process that involves positive adaptation despite exposure to adversity or significant stress (Luthar, 2000). In a risk and resilience framework, protective factors are resources that promote resilience by reducing risk or by buffering the impact of stress on well-being. Protective factors fall into three domains: (a) individual characteristics, (b) family characteristics, and (c) community characteristics (e.g., Garmezy, 1991).

The protective factors examined in the present research focus on the first two domains. Self-perceptions are individual characteristics of particular relevance to adolescents given the importance of healthy identity development during this stage. Although there is evidence supporting the protective role of positive self-perceptions in promoting resilience (e.g., Levy, 1997), very little is known about the interrelationships among self-worth and community violence exposure. In addition, effective parenting can be particularly

protective in high-risk environments and parental strategies that are higher in control may be adaptive for urban African American adolescents in high risk environments (Cauce, Stewart, Rodriguez, Cochran, & Ginzler, 2003; Gonzales, Cauce, Friedman, & Mason, 1996; Mason, Cauce, Gonzales, & Hiraga, 1996). More research is needed to examine how positive self-perceptions “work together” (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001) with family protective factors to impact mental health outcomes of youth exposed to community violence.

### THE MENTAL HEALTH CONSEQUENCES OF COMMUNITY VIOLENCE EXPOSURE

The deleterious effects of community violence have been well documented in studies showing its association with various mental health problems (e.g., Cooley-Quille et al., 2001; Gorman-Smith & Tolan, 1998; Lambert et al., 2008; Latzman & Swisher, 2005; Lynch, 2003; Lynch & Cicchetti, 1998). There is strong evidence that community violence is a predictor of aggressive behavior in youth (e.g., Gorman-Smith & Tolan, 1998; see Overstreet, 2000, for a review; Ozer, 2005). There are conflicting findings regarding the relationship between community violence and depressive symptomatology in the literature. Some cross-sectional and longitudinal studies reported positive associations between community violence exposure and depressive symptoms (e.g., Gorman-Smith & Tolan, 1998), whereas other studies did not find a relationship (Cooley-Quille et al., 2001; Fitzpatrick, 1993).

### INDIVIDUAL AND PARENTAL PROTECTIVE FACTORS

#### Self-Worth

Having a positive sense of self has been linked with resilience (e.g., Masten et al., 1990) and inversely related to youth engaging in risk behaviors including delinquency (Levy, 1997) and violent behavior (Paschall & Hubbard, 1998). High self-esteem and self-worth differentiated between youth who were resilient and those who were classified as “stress-affected” (Cowen et al., 1992; Cowen et al., 1997; Parker, Cowen, Work, & Wyman, 1990). Similarly, Dumont, and Provost (1999) classified adolescents into three groups (well adjusted, resilient, and vulnerable) based on depressive symptoms and frequency of stressors. Their results revealed that well-adjusted adolescents had higher self-esteem than adolescents in the two other groups, and resilient adolescents had higher self-esteem than vulnerable adolescents.

There is also some evidence that having a positive sense of self may moderate the impact of life stress on psychological functioning and risk behavior. Youngstrom, Weist, and Albus (2003) found that self-concept moderated the effects of stress on internalizing symptoms and the impact of cumulative risk (i.e., having a substance-abusing parent, grade repetition, receipt of public assistance, out-of-home placement) on externalizing behavior problems among urban adolescents. Similarly, having positive self-views may protect youth from the effects of chronic environmental stressors (Li, Nussbaum, & Richards, 2007). For example, Li et al. found that having high levels of self-confidence buffered the negative impact of living in an impoverished community. Although positive self-perceptions did not appear to insulate youth from the negative consequences of violence exposure in the previously mentioned studies (Li et al., 2007; Youngstrom et al., 2003), both studies were limited by cross-sectional designs. More research is needed to understand how community violence exposure and positive self-perceptions interrelate to predict later outcomes.

#### Parental Monitoring and Involvement

For youth who reside in high-risk contexts, the role of parental factors may be particularly salient. Specifically, parental monitoring and parental involvement may be protective for adolescents who are exposed to community violence. Youth who have parents who are involved and adequately monitor their actions may feel as if their parents are interested and concerned about them, and this may lead to increased self-worth and self-regulation, which are factors that may promote resilience. Empirical studies have been mixed concerning the protective role of parental monitoring and involvement in the context of community violence exposure. Pearce, Jones, Schwab-Stone, and Ruchkin (2003) found that parental involvement was associated with a decrease in conduct problems but did not buffer the impact of community violence on conduct problems among adolescents. Klierer et al. (2006) found that parental monitoring decreased the impact of community violence exposure on adolescent substance use in a sample of Central American adolescents. However, parental monitoring did not mitigate the effects of community violence exposure on depressive symptoms or aggressive behavior among a sample of African American and Latino boys (Gorman-Smith & Tolan, 1998). Other research suggests that parental monitoring is protective only for youth who are exposed to low levels of community violence (Ceballo, Ramirez, Hearn, & Maltese, 2003; Sullivan, Kung, & Farrell, 2004). For example, Ceballo et al. examined the role of parental monitoring in buffering the effects of victimization and witnessing

violence among youth. Results revealed that greater parental monitoring was significantly related to lower depression and hopelessness scores in the low-victimization group. However, among children with the most victimization, monitoring had no significant impact on psychological well-being. More research is needed on the role of parental monitoring and involvement in relation to community violence. In particular, comparing subgroups of youth with varying levels of community violence and parental protective factors may help clarify for whom high levels of parental monitoring and parental involvement are most protective.

#### GENDER DIFFERENCES IN COMMUNITY VIOLENCE EXPOSURE, PROTECTIVE FACTORS, AND YOUTH OUTCOMES

In general, males report more violence victimization as well as witnessing more violence than do females (e.g., Chen, 2009; Farrell & Bruce, 1997; Lambert, Ialongo, Boyd, & Cooley, 2005; Weist, Acosta, & Youngstrom, 2001). Some research indicates that the association between community violence exposure and mental health outcomes varies by gender (Chen, 2009; Farrell & Bruce, 1997). For example, Farrell and Bruce found that exposure to violence was related to subsequent changes in the frequency of aggressive behavior among girls but not boys in a sample of sixth graders. In addition, there may be gender differences in how community violence exposure and protective factors work together to impact mental health, but there is a paucity of research examining this issue.

#### PERSON-CENTERED APPROACH TO UNDERSTANDING RISK AND PROTECTIVE FACTORS

The bulk of the research conducted on community violence has taken a variable-centered approach (e.g., Cooley-Quille et al., 2001; Gorman-Smith et al., 2004; Gorman-Smith & Tolan, 1998; Pearce et al., 2003), which focuses on relationships among variables as opposed to similarities and differences among subgroups of individuals. Although variable-centered approaches may provide valuable information on the relative importance of each risk and protective factor in predicting a specific outcome, Masten (2001) asserted that “this approach can fail to capture striking patterns in the lives of real people, losing a sense of the whole and overlooking distinctive regularities across dimensions that can indicate who is at greatest risk or needs a particular intervention” (p. 229). Person-centered analyses may be more appropriate for understanding how risk

and protective factors co-occur and operate simultaneously, thus providing a more realistic analysis of how several risk and protective factors work together to impact mental health. According to Bowen, Lee, and Weller (2007) classifying youth into typologies of risk and protection can be important for guiding prevention and intervention programming. In particular, they contended that classifying youth according to typologies can facilitate decision making around who should be targeted for intervention. In addition, the typologies may help to determine which factors should be targeted in the context of limited resources, assist in establishing goals, and help decide which programs are most suitable for a particular group (Bowen et al., 2007).

Studies identifying typologies of youth based on both risk *and* protective factors among adolescents are particularly rare. Bowen et al. (2007) classified children (third through fifth graders) based on risk and protective factors. They identified five profiles (high protection, moderate protection, moderate protection/peer risk, little protection/family risk, no protection/school risk) that were differentially associated with children's well-being, social behavior, and academic performance. Solberg, Carlstrom, Howard, and Jones (2007) conducted one of the few person-centered studies involving classifying youth into several academic risk categories based on exposure to violence and several protective factors. Using cluster analysis youth were classified into not at risk, moderately resilient, resilient, disengaged, vulnerable, and most vulnerable subgroups. Group membership was associated with academic stress, health status, end-of-semester grades, and retention in school. Although both the Bowen et al. and Solberg et al. studies contributed to the extant research in this area, they were limited by their cross-sectional designs. In addition, Bowen et al. defined risk and protection using opposing poles of the same measures, a practice that is at odds with researchers who argue that protective factors are distinct from risk factors and should not be viewed as simply the absence of risk factors (e.g., Rutter, 1987).

### THE PRESENT STUDY

Guided by ecological theory and a risk and resilience framework, the present study examined interrelationships among community violence exposure, protective factors, and mental health outcomes among urban adolescents. Specifically, the objectives of the present study were (a) to identify distinct profiles of adolescents based on a combination of community violence exposure, and individual (i.e., self-worth) and family (i.e., parental monitoring and involvement) protective factors, and (b) to examine whether these profiles of risk

and protection differentially predict adolescents' depressive symptoms and aggressive behavior. In addition, gender differences in the relationship between the profiles and outcomes were explored.

Latent Profile Analysis (LPA), a variant of Latent Class Analysis, was conducted to identify the profile structure of the participants. Specifically, this analytic strategy was used to identify distinct combinations of risk and protective factors experienced by the adolescents in the sample, as a means of understanding what combinations of risk and protective factors were associated with mental health adjustment. Because of the lack of prior studies examining interrelationships among community violence exposure, self-worth, and parental protective factors, we made no a priori hypotheses regarding the number of groups that would emerge. However, we expected that subgroups of youth who experienced less community violence exposure and higher levels of protective factors in the sixth grade would be less aggressive and report fewer symptoms of depression in the seventh grade than youth who experienced more community violence and had lower levels of protective factors. We also expected that the individual and family protective factors would be likely to cluster together such that youth high on parental protective factors also would be high on self-worth.

## METHOD

### Participants and Procedures

Participants were 504 sixth graders originally assessed in first grade as part of a longitudinal study examining the impact of two school-based, preventive intervention trials designed to reduce aggressive and disruptive behavior. Three first-grade classrooms in nine elementary schools were randomly assigned to one of two interventions (i.e., parent discipline focused intervention or a classroom behavior management intervention) or a control condition. The interventions were conducted during the first grade. Participants were followed through high school (Ialongo et al., 1999). The Johns Hopkins University Committee on Human Research approved the study procedures.

Of the 678 children who participated in the intervention trial, 504 had written parental consent; had assented to participate; and had complete sixth-grade self-report data on community violence exposure, self-worth, and parental monitoring as well as parent reports of their involvement in the youths' learning. In addition to the sixth-grade data just noted, self-report data on depressive symptoms and teacher report of aggressive behavior obtained from these youths' seventh-grade assessment were also included in the present study.

The youth in this sample ranged in age from 10.59 to 12.60 ( $M=11.23$ ) at the sixth-grade assessment, and 54% of the sample was male. The sample was approximately 88% African American and 12% White, and 66% were of low socioeconomic status as indicated by receipt of free or reduced-price lunches. Chi-square tests showed that the 174 youth who did not provide complete information on all of the sixth-grade measures included in this study did not differ from the youth included in this study in terms of race, gender, intervention status, first-grade depressive symptoms, first-grade aggression, or socioeconomic status. Youth and teachers completed face-to-face interviews during the sixth-grade assessment, and parents completed a telephone interview (see Ialongo et al., 1999, for a detailed description of the methods).

## Measures

**Community violence exposure.** Community violence exposure was assessed using items from the Children's Report of Exposure to Violence (Cooley, Turner, & Beidel, 1995), which measures the frequency of exposure to community violence through witnessing, victimization, media, and hearing about violent events. The two subscales used in the present study assessed whether the adolescent had (a) witnessed violence or (b) been a victim of violence in the past year. The events assessed in the present study include being beaten up, robbed or mugged, or stabbed or shot; witnessing someone else experience one of these events; or witnessing a murder in the community. Two dichotomous variables were created to indicate whether the youth had been a victim of violence or had witnessed violence in the past year. We chose to dichotomize the violence exposure measures because of highly skewed distributions for victimization and witnessing violence.

**Self-worth.** Self-worth was measured using the Harter Self-Perception Scale (Harter, 1985). This measure assesses the degree to which adolescents are happy with themselves. Higher scores indicate higher self-perception (five items,  $\alpha = .68$ ).

**Parental monitoring.** The Structured Interview of Parent Management Skills and Practices–Youth Version (Patterson, Reid, & Dishion, 1992) was used to assess parental monitoring. Youth were asked to respond to a series of questions regarding their parents' awareness of their daily activities (e.g., "How often do you check in with your parents or sitter after school?"). Items were reverse coded such that higher scores indicate more parental monitoring (seven items,  $\alpha = .62$ ).

**Parental involvement.** Parental involvement in child's learning was used in the present analyses as a proxy for overall parental involvement. Parents were asked to respond to a series of questions regarding their involvement in their child's academics (e.g., "How often do you go over your child's homework?"; five items,  $\alpha = .50$ ).

**Depressed mood.** Depressive symptoms were assessed using the depressed mood subscale (21 items) of the Baltimore How I Feel (Ialongo, Kellam, & Poduska, 1999). Youth reported the frequency of depressive symptoms over the past 2 weeks on a 4-point scale from 1 (*never*) to 4 (*most times*), which was recoded such that items are scored 0 to 3 and a score of 0 indicates no symptoms. Items for this measure were generated from the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) or drawn from existing child-report measures including the Children's Depression Inventory (Kovacs, 1983), the Depression Self-Rating Scale (Asarnow & Carlson, 1985), and the Hopelessness Scale for Children (Kazdin, Rodgers, & Colbus, 1986). Depressed mood scores were created by summing across the 21 items ( $\alpha = .83$ ). In middle school, the Baltimore How I Feel Depression subscale was significantly associated with a diagnosis of major depressive disorder on the Diagnostic Interview Schedule for Children–IV (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000).

**Aggressive behavior.** Aggressive behavior was measured using the Aggressive/Disruptive subscale of the Teacher Observation of Classroom Adaptation–Revised (Werthamer-Larsson, Kellam, & Wheeler, 1991), a measure of each child's adequacy of performance on the core tasks in the classroom as defined by the teacher. Teachers reported on youths' aggressive behavior using a 6-point scale. A summary aggression score was created by taking the mean of the five-item Aggressive/Disruptive subscale. Coefficient alpha for the Aggressive/Disruptive Behavior subscale was .88 in seventh grade. In terms of predictive validity, in Grades 1 to 5 the Aggressive/Disruptive Behavior subscale significantly predicted adjudication for a violent crime in adolescence and a diagnosis of Antisocial Personality Disorder at age 19 to 20 (Petras, Chilcoat, Leaf, Ialongo, & Kellam, 2004; Schaeffer, Petras, Ialongo, Poduska, & Kellam, 2003).

## Analytic Strategy

LPA is a statistical technique that derives information about categorical latent variables based on the observed values of continuous manifest variables or indicators

(McCutcheon, 1987). A variant of Latent Class Analysis, LPA uses continuous rather than categorical indicators. Because LPA assumes that the indicator variables are explained by unobserved constructs, the technique fits latent profile models to the measured data. An advantage of LPA over other analytic strategies is that it allows for the aggregation of data across domains to generate classes of persons and link their class membership to outcomes.

*Mplus* statistical package (L. K. Muthén & Muthén, 1998–2007) was used for the LPA to determine the number of profiles (i.e., classes) needed to best describe the association among the observed variables in the data. The first set of analyses determined the best and most parsimonious class solution (i.e., number of profiles) based on community violence exposure and protective factors assessed in the sixth grade. In the second set of analyses, the likelihood of experiencing depressive symptoms or exhibiting aggressive behavior in seventh grade was modeled as a function of profile membership.

An advantage of LPA is that classes are identified through statistical model testing, rather than determined a priori. To determine the best-fitting model, models with increasing numbers of classes were compared. In LPA, different numbers of classes are not nested; therefore, to determine the most parsimonious and best-fitting model, several test statistics for nonnested models were used (Nylund, Asparouhov, & Muthén, 2006). The Bayesian Information Criterion (BIC; Schwartz, 1978) and the sample-size adjusted BIC (SSABIC; Sclove, 1987) were used to guide selection of the optimal number of classes. Lower values on the BIC and SSABIC represent better fitting models. In addition, the Lo-Mendell-Rubin likelihood ratio test (Lo, Mendell, & Rubin, 2001) and an adjusted version were used to compare models with *k* and *k*-1 classes. A significant *p* value indicates that the estimated model is preferable to a model with one fewer class. Finally, although entropy is not a measure used for the selection of the number of classes, it provides a summary of the overall classification quality. Entropy values range from 0 to 1, with values closer to 1 indicating better classifications of individuals to specific classes. Final model selection was based on these criteria as well as consideration of whether additional trajectories were substantively meaningful (B. Muthén, 2003).

RESULTS

Descriptive Statistics

Means and standard deviations for study variables are presented in Table 1. Thirty-six percent of the sample reported witnessing community violence in the past

TABLE 1  
Descriptive Statistics for Variables in Sixth-Grade Profile and Seventh-Grade Outcome Variables

|  | <i>M</i> | ( <i>SD</i> ) | <i>Range</i> |
|--|----------|---------------|--------------|
| Profile Variables                      |          |               |              |
| Community Violence Victimization (6th) | .06      | (0.23)        | 0–1          |
| Community Violence Witnessing (6th)    | .36      | (0.48)        | 0–1          |
| Self-worth (6th)                       | 3.64     | (0.58)        | 1–5          |
| Parental Monitoring (6th)              | 3.54     | (0.64)        | 1–5          |
| Parental Involvement (6th)             | 2.44     | (0.61)        | 1–5          |
| Outcome Variables                      |          |               |              |
| Depressed Mood (7th)                   | .64      | (0.45)        | 0–3          |
| Aggression (7th)                       | 1.70     | (0.65)        | 1–6          |

year, and 6% reported being victimized by violence in the past year. Correlations among study variables are presented in Table 2. Community violence victimization was negatively correlated with self-worth ( $r = -.09, p < .05$ ) and positively correlated with parental reports of involvement in child’s learning ( $r = .11, p < .01$ ). Witnessing community violence was negatively associated with self-worth ( $r = -.09, p < .05$ ) and positively correlated with aggressive behavior ( $r = .12, p < .01$ ). Parental monitoring was positively correlated with self-worth ( $r = .13, p < .01$ ). Chi-square tests revealed that boys reported witnessing more community violence than girls,  $\chi^2 = 6.75, p < .05$ , and reported more victimization,  $\chi^2 = 9.67, p < .01$ , than girls. There were no gender differences in self-worth, parental monitoring, or parental involvement in child’s learning.

LPA

**Model selection.** LPA was conducted to determine the number of classes best represented by the data. Community violence exposure (both victimization and witnessing) as well as the three protective factors

TABLE 2  
Correlations Among Study Variables

| <i>Variable</i>                           | 1     | 2     | 3      | 4      | 5   | 6   | 7 |
|---|-------|-------|--------|--------|-----|-----|---|
| 1. Community Violence Victimization (6th) | —     |       |        |        |     |     |   |
| 2. Community Violence Witnessing (6th)    | .82** | —     |        |        |     |     |   |
| 3. Self-Worth (6th)                       | -.09* | -.09* | —      |        |     |     |   |
| 4. Parental Monitoring (6th)              | -.05  | .08   | .13**  | —      |     |     |   |
| 5. Parental Involvement (6th)             | .11** | .02   | .06    | -.07   | —   |     |   |
| 6. Depressed Mood (7th)                   | .01   | .07   | -.26** | -.17** | .02 | —   |   |
| 7. Aggression (7th)                       | .03   | .12** | -.05   | -.04   | .04 | .01 | — |

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

(self-worth, parental monitoring, and parental involvement in academics) were included in the LPA. Table 3 summarizes the fit indices for one-, two-, three-, and four-class models. The three-class solution emerged as the best fit for the data based on the BIC and Adjusted BIC, and the Vuong-Lo-Mendall-Rubin and Lo-Mendall-Rubin  $p$  values. The BIC and Adjusted BIC for the three-class solution was lower than the BIC and Adjusted BIC for the one- and two-class solutions, and the entropy for the three-class model improved over the two-class solution. Although the BIC and Adjusted BIC continued to decrease in the four-class solution, the Vuong-Lo-Mendall-Rubin and Lo-Mendall-Rubin  $p$  values were greater than .05, suggesting that the three-class solution was a better fit.

**Characteristics of the classes.** The characteristics of the three classes are displayed in Table 4. Class 1 is the smallest group (5% of the sample) and can be classified as the most *vulnerable group*. Sixty-five percent of the youth in Class 1 have witnessed community violence, and 15% have been a victim of violence. In addition, this group has the lowest levels of self-worth ( $M = 1.898$ ) and parental involvement in their education ( $M = 2.325$ ). Class 2 consists of 18% of the sample. Class 2 can be described as *moderate risk and medium protection*. The youth in Class 2 have higher levels of self-worth ( $M = 2.981$ ) and parental involvement in education ( $M = 2.423$ ), but lower levels of parental monitoring ( $M = 3.241$ ) than those in the most vulnerable class (Class 1). Class 3 is the largest class (77% of the sample) and can be described as exhibiting *moderate levels of risk and comparatively high levels of protection*. In this class, 34% of the youth reported witnessing violence, and 5% reporting that they have been a victim of violence. This group has the highest levels of all protective factors (self-worth  $M = 3.903$ ; parental monitoring  $M = 3.605$ ; parental involvement  $M = 2.448$ ). Class membership did not vary according to gender, intervention status, or receipt of free or reduced-price lunch. The proportion of boys and girls in each class was approximately equal

TABLE 3  
Model Fit Comparison Classes 1 to 4

|         | BIC      | SSABIC   | Entropy | VLMR $p$ | LMR $p$ |
|---------|----------|----------|---------|----------|---------|
| Class 1 | 3728.452 | 3700.059 |         |          |         |
| Class 2 | 3479.637 | 3435.200 | .947    | .0024    | .0029   |
| Class 3 | 3360.409 | 3296.927 | .962    | .0239    | .0261   |
| Class 4 | 3262.084 | 3179.558 | .968    | .0822    | .0880   |

Note. BIC = Bayesian Information Criterion; SAABIC = sample-size adjusted BIC; VLMR = Vuong-Lo-Mendall-Rubin; LMR = Lo-Mendall-Rubin.

TABLE 4  
Characteristics of Classes

| <i>Sixth-Grade Risk and Protective Factors</i> | <i>Vulnerable (5%)</i> | <i>Moderate Risk/Medium Protection (18%)</i> | <i>Moderate Risk/High Protection (77%)</i> |
|--|------------------------|--|--|
| Risk Factors                                   |                        |  |  |
| % Witnessed Violence                           | 65%                    | 37%  | 34%  |
| % Victimization                                | 15%                    | 7%   | 5%   |
| Protective Factors                             |                        |  |  |
| Self-Worth                                     | 1.898                  | 2.981  | 3.903                                      |
| Parental Monitoring                            | 3.521                  | 3.241  | 3.605                                      |
| Parental Involvement                           | 2.325                  | 2.423  | 2.448                                      |

with both moderate risk classes being 54% female and the vulnerable class being 50% female.

#### Class Membership in Grade 6 and Mental Health Adjustment in Grade 7

To determine whether the classes were differentially associated with depressive symptoms and aggressive behavior in Grade 7, the equality of means for each outcome was compared across latent classes. For example, to examine whether the mean level of depressive symptoms in the vulnerable class was higher than the mean level of depressive symptoms in the moderate risk/medium protection class, the mean depressive symptoms for those two groups were compared. A significant chi-square indicates that the means are significantly different. Seventh-grade depressive symptoms and aggressive behavior were examined in separate models with lunch status and initial (sixth-grade) levels of mental health outcomes controlled for in each model. Grade 7 mean depressive symptoms and aggressive behavior for each class are displayed in Table 5.

TABLE 5  
Means for Mental Health Outcome Variables for Each Class

| <i>Seventh-Grade Mental Health Outcomes</i> | <i>Vulnerable (5%)</i> | <i>Moderate Risk/Medium Protection (18%)</i> | <i>Moderate Risk/High Protection (77%)</i> |
|---|------------------------|--|--|
| Depressed Mood <sup>a</sup>                 | .908                   | .819   | .585                                       |
| Aggression <sup>b</sup>                     | 1.919                  | 1.656  | 1.684                                      |

<sup>a</sup>The moderate risk/high protection class reported significantly fewer depressive symptoms than the vulnerable class and significantly fewer depressive symptoms than the moderate risk/medium protection class. There was no difference in depressive symptoms between the vulnerable class and the moderate risk/medium protection class.

<sup>b</sup>There was no difference in aggressive behavior for the vulnerable class and the moderate risk/medium protection class. The vulnerable class and the moderate risk/high protection class were not significantly different. There was no significant difference in aggression between the two moderate risk classes.

Adolescents in the moderate risk/high protection class reported significantly fewer depressive symptoms than adolescents in the vulnerable class,  $\chi^2_{\text{diff}}(1) = 10.33, p < .01$ , and significantly fewer depressive symptoms than adolescents in the moderate risk/medium protection class,  $\chi^2_{\text{diff}}(1) = 15.33, p < .01$ . There was no difference in depressive symptoms between adolescents in the vulnerable class and adolescents in the moderate risk/medium protection class,  $\chi^2_{\text{diff}}(1) = .62, ns$ . There was no difference in aggressive behavior for adolescents in the vulnerable class and the moderate risk/medium protection class,  $\chi^2_{\text{diff}}(1) = 2.40, ns$ . Reports of aggressive behavior for adolescents in the vulnerable class and the moderate risk/high protection class were not significantly different,  $\chi^2_{\text{diff}}(1) = 2.17, ns$ . In addition, teacher reports of aggressive behavior did not differ for the two moderate risk classes,  $\chi^2_{\text{diff}}(1) = .14, ns$ .

To further explore whether different predictive relationships would emerge for boys and girls, the models examining the relationship between class membership and depressive symptoms and aggression were analyzed separately for boys and girls. For both genders, class membership did not differentially predict aggressive behavior. Girls in the vulnerable class were more likely to be depressed than girls in the moderate risk/high protection class,  $\chi^2_{\text{diff}}(1) = 2.17, p < .01$ , and girls in the moderate risk/medium protection class were more likely to be depressed than girls in the moderate risk/high protection class,  $\chi^2_{\text{diff}}(1) = 11.86, p < .05$ . For boys, the mean depressed mood score for the vulnerable class was lower than the mean depressed mood score for the moderate risk/medium protection class; however, this difference was not statistically significant. There was no difference in depressive symptoms for youth in the vulnerable class and the moderate risk/high protection class,  $\chi^2_{\text{diff}}(1) = 1.81, ns$ . However, boys in the moderate risk/medium protection class were more likely to be depressed than boys in the moderate risk/high protection class,  $\chi^2_{\text{diff}}(1) = 12.31, p < .01$ .

## DISCUSSION

This study was designed to identify distinct profiles of adolescents based on a combination of community violence exposure, and individual and family protective factors and to examine whether these profiles of risk and protection differentially predict adolescents' depressive symptoms and aggressive behavior. Three classes were identified—a vulnerable class, a moderate risk/medium protection class, and a moderate risk/high protection class. The vulnerable class comprised the smallest percentage of the sample (5%). The majority of the sample (77%) made up the moderate risk/high protection class. The vulnerable class had the highest levels of community

violence exposure and the lowest levels of self-worth, and their level of parental involvement was slightly lower than youth in either of the two moderate risk groups.

We expected that subgroups of youth who experienced less community violence exposure and higher levels of protective factors in the sixth grade would be less aggressive and depressed in the seventh grade than youth who experienced more community violence and had lower levels of protective factors. We also expected that the individual and family protective factors would be likely to cluster together such that youth who are high on parental protective factors also would be high on self-worth. Consistent with these expectations, girls in the moderate risk/high protection class reported significantly fewer depressive symptoms than girls in the vulnerable class and the moderate risk/medium protection class. However, boys in the moderate risk/high protection class did not report fewer depressive symptoms than boys in the vulnerable class, whereas boys in the moderate risk/high protection class reported fewer symptoms of depression than boys in the moderate risk/medium protection class. However, for boys and girls, there were no differences in aggressive behavior 1 year later across classes.

Overall, youth who had the highest community violence exposure also had the lowest self-worth. Although several studies have documented the link between exposure to violence in the home and decreased self-worth, few studies have examined community violence exposure and self-evaluations. More research is needed on mechanisms linking community violence exposure and self-perceptions. For example, it is not clear whether witnessing violence in the community leads to a sense of helplessness and hopelessness that in turn affects youth's sense of confidence or self-efficacy. In addition, it is unknown whether victimization and witnessing contribute equally to lower self-worth.

The youth in the moderate risk/medium protection and the moderate risk/high protection classes reported similar rates of community violence exposure (37% witnessing and 7% victimization vs. 34% witnessing and 5% victimization). Self-worth was higher among youth in the high protection group. Positive self-perceptions may protect these youth against internalizing the violence around them. Positive self-perceptions may be linked to other internal resources that are protective such as sense of purpose. DuRant, Cadenhead, Pendergrast, Slavens, and Linder, (1994) found that urban adolescents who had a sense of purpose for their lives were less affected by violence exposure than their peers who did not have a sense of purpose. In addition, positive self-regard has been linked to adaptive coping (e.g., Phinney & Chavira, 1995). Although qualitative research may be needed to determine how positive



self-regard influences coping with community violence, it is reasonable to conjecture that adaptive coping behaviors may decrease feelings of hopelessness and subsequent depression following exposure to violence.

Contrary to our hypothesis, the three risk/protection groups did not differentially predict aggressive behavior 1 year later. The fact that youth in the vulnerable group did not have significantly higher levels of aggressive behavior contradicts many other studies that link violence exposure to aggression (e.g., Gorman-Smith & Tolan, 1998; see Overstreet, 2000, for review). However, it corroborates findings reported by Cooley-Quille et al. (2001), who did not find a relationship between community violence exposure and externalizing symptoms in their study of high school students. These authors suggested that the lack of association between community violence exposure and aggression was adaptive and an indication that the youth were responding to violence exposure without aggression. In the present study, the youth in all three groups reported similar levels of parental monitoring. One possible explanation for the lack of association between the profile groups and aggression is that parents of youth in all three groups may have been effective in monitoring their adolescents' behaviors, which protected them from engaging in aggressive acts as a response to violence exposure. It is also possible that the lack of association between group membership and aggressive behavior is due to the fact that the measure of aggression used in the present study was a teacher report measure. Although this measure may have adequately captured aggression in the classroom setting, teachers may not be aware of aggressive acts that take place outside of school, particularly in the neighborhood.

We were surprised to find that there was no difference in depression for boys in the vulnerable group and boys in either of the moderate risk groups. Perhaps boys in the vulnerable class have become desensitized to violence such that exposure did not result in depressive symptomatology. This finding may have emerged for boys and not for girls because boys may be more prone to desensitization than girls due to boys' overall higher levels of community violence exposure. It also is possible that boys in this group were responding to violence exposure and limited protective factors in ways not examined in this study such as substance use.

### Strengths and Limitations

This research contributes to the growing literature employing person-centered methods to understand how both risk and protective factors work simultaneously to impact later outcomes among a sample of urban adolescents. To our knowledge, there are no other studies that distinguish youth based on a combination of

community violence exposure, self-worth, and family protective factors and examine how these factors interrelate to predict later mental health outcomes. A variable-centered approach would not have identified these profile groups. In addition, using a variable-centered approach to identify patterns of community violence risk and protection would have required the creation of a series of interaction terms, an approach that is fraught by difficulties in interpretation. A person-centered approach is a more efficient way to identify groups of youth based on a combination of factors. Moreover, distinguishing between youth who are at varying levels of risk and protection 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, Muthén, van der Sar, & Crijnen, 2004).

The study should be evaluated in the context of some limitations. The measure of community violence exposure used in this study was relatively brief. A more comprehensive assessment of community violence exposure might have revealed different results. The measure of parental involvement may have been limited by the low internal consistency. In addition, it might have been more informative to have a measure of parent monitoring that focused specifically on parenting in dangerous contexts. This type of specific information is needed for intervention. Although the community sample is a strength of this research, we acknowledge that results only generalize to other community samples of similar backgrounds.

### Implications for Research, Policy, and Practice

Understanding patterns of risk and protection can inform prevention and intervention programs for youth who have been exposed to community violence. For example, efforts to increase adolescents' self-worth may be paramount aspects of prevention and intervention programs for adolescents who are exposed to community violence. Future studies should include qualitative assessments that capture the mechanisms through which community violence impacts self-worth for youth who reside in dangerous contexts. For example, how does violence in the community impact the identity, sense of purpose, and the future outlook of youth, and how do these factors, in turn, influence the self-worth of youth who reside in dangerous environments? In addition, more research is needed on ways that parents and interventionists can prevent youth from internalizing the violence around them, enhance their self-worth, and facilitate adaptive coping, particularly among youths who are exposed to violence.

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