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Exposure to Violence and Socioemotional Adjustment in Low-Income Youth: An Examination of Protective Factors

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Abstract

Using a sample of 391 low-income youth ages 13 to 17, this study investigated the potential moderating effects of school climate, participation in extracurricular activities, and positive parent-child relations on associations between exposure to violence (i.e., witnessing violence and violent victimization) and adolescent socioemotional adjustment (i.e., internalizing and externalizing problems). Exposure to violence was related to both internalizing and externalizing problems. High levels of participation in extracurricular activities and positive parent-child relations appeared to function as protective factors, weakening the positive association between exposure to violence and externalizing problems. Contrary to prediction, school climate did not moderate associations between exposure to violence and socioemotional adjustment. Further, none of the hypothesized protective factors moderated the association between exposure to violence and internalizing problems.

Keywords

community violence; socioemotional adjustment; low-income adolescents

Youth in the United States experience violence as witnesses and victims at alarmingly high rates. National statistics show that adolescents and young adults ages 12-24 are more likely than individuals in any other age group to be the targets of violent crime, including physical assault, sexual assault, and robbery (U.S. Department of Justice, 2010). Moreover, substantial numbers of adolescents have witnessed serious acts of violence (Stein, Jaycox, Kataoka, Rhodes, & Vestal, 2003). Low-income, ethnic minority adolescents face an elevated risk of experiencing community violence both as witnesses and as victims (Voisin, 2007). These traumatic experiences have been connected to both short- and long-term psychological and behavioral consequences, including depression, posttraumatic stress disorder, and delinquency (Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009; Overstreet & Mazza, 2003). Although numerous studies have documented associations between exposure to violence and socioemotional adjustment problems in youth, less attention has been paid to familial and extrafamilial resources that may mitigate the

psychological and behavioral consequences of exposure to violence. The current study was designed to redress this gap in the literature.

In this study, we investigated whether adolescents' experiences in three important developmental contexts—the school, extracurricular activities, and the family—mitigate the harmful effects of exposure to community violence for low-income youth living in high-poverty neighborhoods. We hypothesized that 1) positive perceptions of the school climate, 2) frequent participation in extracurricular activities, and 3) positive parent-child relationships would attenuate links between violence exposure and adolescents' internalizing and externalizing behaviors. Our examination of protective effects from multiple realms of influence is informed by Foster and Brooks-Gunn's (2009) model of children's exposure to violence, which emphasizes that coping resources for children emanate from a variety of developmental contexts.

Risk and Resilience

The fact that most studies documenting the relation between exposure to violence and psychological/behavioral outcomes have reported small to medium effect sizes points to the need to examine factors that account for individual differences in the strength of these associations (Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009; Wilson & Rosenthal, 2003). The present study examines school climate, participation in extracurricular activities, and positive parent-child relations as protective factors that might mitigate risks associated with community violence exposure. Prior research has shown that some of these hypothesized protective factors buffer youth from the negative consequences of other risk factors; however there is little evidence concerning whether these factors mitigate the consequences of exposure to community violence. Illuminating factors that moderate links between exposure to violence and adolescents' socioemotional adjustment will help to identify individuals most at risk for psychosocial problems and inform interventions designed to improve outcomes for youth developing in high-violence contexts.

The idea that familial and extrafamilial resources play a protective role is grounded in the risk and resilience framework proffered by Luthar and colleagues (Luthar, Cichetti, & Becker, 2000). According to Luthar et al. (2000), factors that promote developmental competency in general may operate as protective factors in contexts where children are experiencing threats to healthy development. Thus, participation in extracurricular activities, positive school characteristics, and high quality parent-child relationships, which are known to promote adaptive outcomes in youth, may be protective in contexts where youth are experiencing risks associated with exposure to community violence.

Luthar and colleagues describe a number of statistical interaction patterns that may be indicative of protective effects. In this study, we expected that the hypothesized moderation effects would be consistent with the *protective-stabilizing* interaction pattern. Protective-stabilizing moderators are those that "confer stability in competence despite increasing risk" (p. 547). Accordingly, we hypothesized that the associations between violence exposure and internalizing/externalizing problems would be weakest for youth who report relatively high levels of the hypothesized protective factors. For example, we expected that youth who

report relatively high levels of activity participation would maintain developmental competence (i.e., relatively low levels of internalizing and externalizing problems) even in the face of high levels of exposure to violence.

Hypothesized Moderators of Exposure to Violence

School Climate

Adolescents spend substantial amounts of time in school. Moreover, research shows that youth's perceptions of the school climate are related to socioemotional adjustment (Brand, Felner, Shim, Seitsinger, & Dumas, 2003; Loukas, Suzuki, & Horton, 2006). For example, Way, Reddy, and Rhodes (2007) found evidence that perceptions of the school climate predict self-esteem, depressive symptoms, and problem behaviors across time. Adolescents' school climate perceptions have also been linked to both teacher- and youth-reported academic behaviors (Benner, Graham, & Mistry, 2008).

In addition to exerting a main effect on healthy psychological and behavioral functioning, research shows that positive experiences within the school context may protect youth from the harmful effects of violence exposure. For example, Ozer and Weinstein (2004) found that perceptions of safety at school and support from teachers moderated relations between exposure to community violence and adaptive school behaviors. Brookmeyer and colleagues found that perceived school safety, in combination with strong connectedness to parents, appeared to attenuate the relation between exposure to violence and violent behaviors in youth (Brookmeyer, Fanti, & Henrich, 2006). In the present study, we examined youth perceptions of the general school climate as a protective factor that we hypothesized would weaken associations of community violence exposure with internalizing and externalizing problem behaviors. Positive school factors that enhance positive perceptions of school climate may act independently or synergistically to protect adolescents exposed to violence from adjustment problems by providing a safe haven as well as avenues for communication and help.

Extracurricular Activities

Across the developmental period of adolescence, many youth spend increasing amounts of time participating in structured extracurricular activities (Shanahan & Flaherty, 2001). To date, no studies have examined whether participation in structured activities outside of school (e.g., participation in adult-organized sports, clubs, or youth groups) protects adolescents' socioemotional adjustment from the harm associated with exposure to violence. However, some studies offer evidence that structured activities may help to reduce levels of violence exposure among youth who are at risk for such exposure. For example, one study found that children who participated in structured activities experienced lower levels of exposure to violence than those who did not, and that exposure to violence partially mediated associations between amount of time spent in risky contexts and psychological outcomes (Hammack, Richards, Luo, Edlynn, & Roy, 2004).

Several studies have also linked involvement in extracurricular activities to positive educational, psychological, and behavioral outcomes (Feldman & Matjasko, 2005). There are a number of processes that may account for these associations. For example, engagement

in extracurricular activities may promote interpersonal competence and raise educational expectations (Mahoney, Cairns, & Farmer, 2003). Adolescents who participate in extracurricular activities may also develop a sense of initiative, associate with a greater number of academically oriented peers, and build valuable social and cultural capital (Feldman & Matjasko, 2005; Jarrett, Sullivan, & Watkins, 2005; Larson, 2000; Roscigno & Ainsworth-Darnell, 1999). Extracurricular activities can also be viewed as protective contexts that provide adolescents with opportunities to develop social bonds that reduce the likelihood of delinquency (Hammack et al., 2004; Wong, 2005).

Studies also suggest that community involvement may help adolescents process and cope with violence. Using a sample of African American adolescents, Yakin and McMahon (2003) found that community support (i.e., church attendance, participation in community-related activities, and felt support from the community) was positively associated with adaptive appraisals of community violence (i.e., less concern about violence, a greater sense of control over violence, and feeling that violence was more predictable). Youth who had more adaptive appraisals of violence were less likely to report anxiety and depression than youth who did not. Further, extracurricular activities may give youth the opportunity to build supportive, mentoring relationships with coaches, instructors, or other activity leaders. Mahoney, Schweder, and Stattin (2002) found that support from activity leaders acted as a moderator of depressed mood for adolescents who had detached relationships with their parents. Adolescents exposed to violence may especially benefit from being able to share their experiences with caring adults.

Parent-Adolescent Relations

Although adolescence is marked by increases in autonomy and time spent away from family, relationships with caregivers remain an important developmental influence throughout this period (Steinberg & Morris, 2001). A large body of research suggests that high quality parent-adolescent relationships help protect youth against socioemotional adjustment difficulties, including delinquency, substance abuse, and depression (Aseltine, Gore, & Colten, 1998; Conger, Ge, Elder, & Lorenz, 1994; Steinberg, 2001). This link has been substantiated by both cross-sectional and longitudinal studies that focus on various aspects of the parent-adolescent relationship, including warmth, support, closeness, conflict, and communication (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000).

High quality parent-adolescent relationships appear to be protective for adolescents who experience cumulative risks or who live in dangerous, high poverty neighborhoods (Dearing, 2004; Loukas & Prelow, 2004). Several investigations have focused specifically on parent-adolescent relationship quality as a potential moderator of the link between exposure to violence and various adolescent outcomes. These studies have found that high quality family functioning tends to weaken relations between exposure to violence and adolescent outcomes (Proctor, 2006). High quality parent-adolescent relationships may contribute positively to experiences of support from parents and to adaptive appraisals of violence, two factors that may promote adaptive coping strategies in the face of community violence (Kliewer, Sandler, Wolchik, Nestmann, & Hurrelmann, 1994).

In the current study, parent-adolescent relations were hypothesized to operate as a *protective-stabilizing* moderator of the relation of violence exposure to youths' internalizing and externalizing behaviors. We hypothesized that high quality parent-adolescent relations are associated with positive outcomes for youth, and that adolescents who report positive parent-adolescent relations would show fewer internalizing/externalizing problems in response to violence exposure than those who report lower quality relations with their parent.

Overview of Present Study

Based on the existing literature, exposure to violence was expected to be directly related to higher levels of internalizing and externalizing problems in youth. The primary goal of the study was to test the hypothesis that experiences within three contexts—the school, extracurricular activities, and the family—operate as *protective-stabilizing* factors in the lives of youth exposed to violence. Experiences within these three spheres of influence were chosen because of their particular significance in the lives of adolescents (Steinberg & Morris, 2001). We expected that positive perceptions of the school climate, frequent participation in extracurricular activities, and positive parent-child relationships would attenuate positive associations of exposure to violence with internalizing and externalizing problems. The current study makes a unique contribution to the literature by focusing on multiple moderators and by including extrafamilial factors that might act as buffers in the association between exposure to violence and socioemotional adjustment problems. Past research on moderators of exposure to violence has focused heavily on family-level protective factors and has rarely considered extrafamilial sources of resilience in the lives of adolescents. The current study also includes multiple informants of adolescents' problem behaviors, an improvement over past studies that have solely relied on adolescents' self-reports, thereby potentially inflating estimated relations between exposure to violence and adjustment. Moreover, we control for prior levels of adolescent adjustment in our models, a research design that helps to isolate the effects of the focal study constructs on the dependent variables. We tested these hypotheses in a sample of urban, low-income youth, ages 13-17. This particular sample was selected because adolescents developing within urban, low-income contexts are considerably more likely to be exposed to violence than youth from middle- and upper-income backgrounds (Voisin, 2007). Consequently, generating knowledge about psychological processes linked to violence is critical for understanding development in urban, low-income youth.

Methods

Data Source

This study uses data collected as a part of an evaluation of the New Hope Project, an experimental anti-poverty program conducted in Milwaukee, WI, during the mid- to late 1990s. Adult residents of two zip code-defined areas were eligible to participate in the program if their annual household income was at or below 150% of the federally-defined poverty level and if they were willing and able to work at least 30 hours per week. A total of 1,357 participants were recruited to the project and randomly assigned to control (N = 679) and experimental conditions (N = 678) (Poglinco, Brash, & Granger, 1998). Adults in the

experimental condition of New Hope received access to earnings supplements, child care subsidies, and health insurance subsidies. For a detailed description of the New Hope Program and its evaluation see Huston et al., 2005.

The families examined in the current study came from the Child and Family Study (CFS), a smaller subsample of 745 individuals who had at least one child between the ages of 1 and 10 at random assignment (program group n = 366; control group n = 379). Up to two children meeting the age criteria were selected to participate in the study. Opposite-sex siblings were selected in families with more than two children. Data for CFS were collected two (Time 0), five (Time 1), and eight (Time 2) years after the program began. Of the 745 families in CFS, 78% participated at Time 0, 73% participated at Time 1, and 82% participated at Time 2 (Epps, 2006).The focal constructs for this work were measured at Time 2. Because our goal was to investigate processes among adolescents, only youth between the ages of 13 and 17 at Time 2 were included in the study sample. Data from 391 adolescents (192 girls, 198 boys, 1 gender missing; 59% African American, 27% Latino, 11% European American, and 3% American Indian) who were living with 333 primary caregivers were included in the analyses presented here. The mean adolescent age at Time 2 was 14.92 years (*SD* = 14 months). Sample members' mean annual household income was $21,087 (*SD* = $11,219) at the time of random assignment. Youth who were included in the sample for the present study did not significantly differ from those who were excluded due to age with respect to annual household income at the time of random assignment, primary caregiver education level, and New Hope control vs. experimental group status.

Parents and children were interviewed individually at home by trained interviewers for each wave of the study. Other information came from records of public assistance or employment and enrollment forms respondents completed when they applied for the program. Teachers were also mailed surveys that they completed and returned.

Measures

Measures of exposure to violence, internalizing and externalizing problems, and the moderator variables were collected at Time 2, whereas measures of control variables were obtained at Time 1.

Independent Variable

Exposure to violence—At Time 2, adolescents responded to five items from the National Longitudinal Study of Adolescent Health (Add Health; Udry, 2003) that assessed exposure to violence. Adolescents indicated on a 3-point scale (0 = *never*, 1 = *once*, 2 = *more than once*) how often they had experienced different forms of violence during the past 12 months. The sum of the five items was used as the final score. Nineteen percent of respondents reported seeing someone shoot or stab another person, 16.4% reported being jumped, 12.7% reported having a knife or gun pulled on them, 4.0% reported being cut or stabbed, and 0.6% reported being shot. About 35% of youth reported being exposed to one or more forms of violence.

Dependent Variables

Internalizing Problems—Internalizing problems were measured using a latent construct indicated by three observed variables: parents' reports of youth's internalizing problems, self-reported anxiety, and self-reported loneliness. Factor loadings for internalizing problems are shown in Tables 3 through 5.

Parent reports of youths' internalizing problems: Internalizing problems were measured using the Problem Behaviors Scale from the Social Skills Rating System (Gresham & Elliott, 1990). Parents responded to a series of statements on a 5-point response scale (0 = *never*; 5 = *all of the time*) regarding how often the target child "has low self-esteem," "appears lonely," "shows anxiety in groups," "is easily embarrassed," "likes to be alone," and "acts sad or depressed." The mean of the five items was used as the final score (α=.65).

Anxiety: Adolescents responded to 8 items from the worry/oversensitivity and social concerns/concentration subscales of the Manifest Anxiety Scale (Reynolds & Richmond, 1985). Responses were coded on a 5-point response scale (1 = *never true*; 5 = *always true*) and the mean for all 8 responses was used as the final score (α=.81).

Loneliness: A modified version of the Loneliness and Social Dissatisfaction Scale (Asher & Wheeler, 1985) was used to assess loneliness. Adolescents responded to 16 questions about friendships and feeling alone on a 5-point response scale (1 = *always true*; 5 = *not at all true*; α=.87).

Externalizing Problems—Three indicators were used to comprise the latent construct externalizing problems, including parents' reports of youth's externalizing problems, teachers' reports of youth's externalizing problems, and self-reported delinquent behaviors. Factor loadings for externalizing problems are shown in Tables 3 through 5.

Parent and teacher reports of youths' externalizing problems: Adolescents' externalizing problems were measured using six items from the Problem Behaviors Scale of the Social Skills Rating System (Gresham & Elliott, 1990). Parents and teachers indicated on a 5-point scale, ranging from "*never*" to "*all the time*," how often the focal adolescent "fights with others," "threatens or bullies others," "argues with others," "talks back to adults when corrected," "gets angry easily," and "has temper tantrums." Parent and teacher subscales had adequate reliability (α=.83 and .93, respectively).

Delinquency: At Time 2, youth were asked 9 questions about their delinquent behaviors using a measure adapted from LeBlanc and Tremblay (1988). Youth rated on a 4-point scale (0 = *never*; 3 = *5 or more times*) how often they had engaged in various delinquent behaviors over the past 12 months, including fighting, stealing, vandalism, and drug use. The mean of the items was used as the score for delinquency (α=.81).

Moderators

Participation in Extracurricular Activities—Youth responded to 8 items about the frequency with which they had participated in various structured activities during the

previous school year (1=*never*; 5=*about every day*). Some items were adapted from the Self-Sufficiency Project (Morris & Michalopoulos, 2000) and others were developed specifically for the CFS. The activities measured included taking lessons (dance, music, or arts and crafts) and participating in sports, clubs or youth groups, before- or after-school programs, leadership activities (e.g., student council), and musical activities (e.g., band). The mean of the 8 items was used as the score. In total, 28.5% of adolescents reported that they participated in extracurricular activities "about every month" or "every week". Cronbach's alpha for this measure was .63. The relatively low internal consistency for this measure was expected, given that frequency of participation in one type of activity would not necessarily be correlated with frequency of participation in other activities (e.g., a student who takes lessons would not necessarily be expected to also participate in leadership activities). Conceptually, this measure is appropriate for testing the hypotheses of the present study because higher scores correspond with more frequent participation in extracurricular activities.

School Climate—Youth responded to five items about school climate from the Add Health Study (Udry, 2003) (e.g., "You feel close to others at your school" and "You feel safe in your school"; 1=*not true at all*, 5=*always true for you*).). Higher scores represented more positive perceptions of the school climate (α=.79).

Parent-Adolescent Relations—Youth indicated how true 12 statements about their primary caregiver and their relationship with their primary caregiver were on a five-point response scale (e.g., "You often have good times at home with (her/him)"; 1 = *not at all true*, 5 = "*very true*"; McLoyd, Jayaratne, Ceballo, & Borquez, 1994). The average of the 12 items was used as the score for this variable, with higher scores indicating more positive parent-adolescent relations (α=.87).

Data Analysis

Structural equation modeling in Mplus version 5.2 was used to test the hypothesized models. (Muthén & Muthén, 1998-2007). Mplus handles missing data using full information maximum likelihood estimation (FIML), which yields parameter estimates that tend to be less biased than those generated by ad hoc missing data techniques (e.g., listwise deletion; Schafer & Graham, 2002). Unlike imputation methods for handling missing data, which assign values for each missing data point, FIML uses an iterative procedure to generate the parameters of the population most likely to have produced the available sample data. Because in some cases two children per family participated in the study, the Mplus CLUSTER command was used to correct for nonindependence of observations.

The interaction effects models tested are depicted in Figure 1. Separate models were run for each of the hypothesized moderators. All models included both internalizing and externalizing problems simultaneously as outcomes. Correlated error terms that improved model fit and were deemed to be theoretically reasonable were included in each model (see Figure 1). Support for hypotheses was evaluated based on the size and significance of coefficients representing links between the independent variables and the two dependent variables. Acceptable overall model fit was indicated by nonsignificant chi-square values,

RMSEA values of less than or equal to .08, and SRMR values of less than .10 (Vandenberg & Lance, 2000).

Interactions were tested and probed in the manner recommended by Aiken and colleagues (Aiken & West, 1991; Cohen, Cohen, Aiken, & West, 2002). Variables included in interaction terms were centered. Tests of simple slopes for significant interactions were conducted using an internet-based interactive calculation tool designed for this purpose by Preacher, Curran, and Bauer (2006). Specifically, simple slopes for the relations between exposure to violence and the dependent variable in question were calculated and plotted for high (1 *SD* above the mean), average, and low (1 *SD* below the mean) levels of the moderator variable.

Control Variables

Child age in years, gender (0=*female*, 1=*male*), and race/ethnicity were included in each of the models as control variables. Socioeconomic status (SES) was also controlled; household income and education were standardized and summed to create a composite variable representing SES. Assignment to New Hope condition (1=*experimental group*, 0=*control group*) was also controlled in order to adjust for possible differences between these groups. Time 1 parent and teacher reports of socioemotional adjustment were averaged and included in all models as covariates; by doing so, we were able to assess the influence of the focal study constructs on internalizing/externalizing problems above and beyond the influence of prior adjustment. Although not depicted in Figure 1, direct paths from each predictor and control variable to the outcome variables were estimated.

Results

Preliminary Analyses

Descriptive statistics and bivariate correlations between study variables are shown in Tables 1 and 2.

Structural Equation Modeling

Internalizing Problems

Main effects: Exposure to violence was positively related to internalizing problems in the model for extracurricular activities ($\beta = .28$, $p < .01$) and in the model for parent-adolescent relationship quality ($\beta = .26$, $p < .01$), but was not significantly related to internalizing problems in the model for school climate ($\beta = .19$, ns). School climate and participation in activities were negatively related to internalizing problems ($\beta = -.43$, $p < .01$; $\beta = -.21$, $p < .01$, respectively). Positive parent-child relations were not significantly related to internalizing problems ($\beta = -.04$, ns).

Two- way interactions: As described above, two-way interaction terms were created to determine whether the potential moderators modified relations between exposure to violence and socioemotional adjustment. Contrary to our hypotheses, none of the interaction terms significantly predicted internalizing problems (see Tables 3 - 5).

Externalizing Problems

Main effects: In all models, exposure to violence was positively related to externalizing problems. In the model for extracurricular activities $\beta = .60$, for parent-adolescent relations $\beta = .62$, and in the model for perceptions of the school climate $\beta = .55$, all ps < .01. School climate, participation in activities, and positive parent-adolescent relations were all negatively related to externalizing problems (βs = −.23, −.15, and −.16, respectively, all ps < .05).

Two-way interactions: Participation in extracurricular activities moderated the relation between exposure to violence and externalizing problems, $\beta = -.15$, $p < .05$ (see Table 3). The simple slope of the relation between violence exposure and externalizing problems for youth 1 *SD* below the mean of participation in activities was .26, $t(379) = 8.83$, $p < .01$, and the simple slope for youth 1 *SD* above the mean of participation in activities was .16, $t(379) = 4.89$, $p < .01$ (Figure 2). Although both simple slopes were significantly different from zero, the relation between exposure to violence and externalizing problems was weakest for those with high levels of participation in activities, indicating that participation in activities acted as a *protective-stabilizing* moderator.

Positive parent-child relations also moderated the association between exposure to community violence and externalizing problems, $\beta = -.19$, $p < .05$. The simple slope for youth 1 *SD* below the mean of positive parent-child relations was 0.28, $t(379) = 8.75$, $p < .01$ and the simple slope for youth 1 *SD* above the mean of positive parent-child relations was .15, $t(379) = 4.16$, $p < .01$ (Figure 3). As was the case with participation in extracurricular activities, the relation between exposure to community violence and externalizing problems was significant at both levels of positive parent child relations; however, the association between these two variables was weakest among youth with high levels of positive parent-child relations. Thus, positive parent-child relations appears to be operating as a *protective-stabilizing* moderator. School climate did not moderate the association between exposure to violence and externalizing problems.

Discussion

For many families living in impoverished, dangerous neighborhoods, the threat and reality of community violence is a chronic stressor that looms over daily living, influencing parenting practices and denying children the opportunity to feel safe in their communities (Horowitz, McKay, & Marshall, 2005; Voisin, 2007). In many cases, the effects of community violence are compounded by the wide range of other harmful family and environmental stressors associated with living in poverty (Evans, 2004). Evans (2004) makes a compelling argument that poverty is associated with a unique confluence of risks for children, and that researchers should direct their attention toward the physical environments in which children are developing, as opposed to only family processes, to help explain poverty's harmful impact on child outcomes. Indeed, neighborhood poverty has a distinct negative association with socioemotional adjustment problems, over and above family-level poverty, and community violence may be one mechanism that explains this link (Leventhal & Brooks-Gunn, 2003). Taken together, both the chronicity of community

violence and risks associated with neighborhood poverty highlight the need for understanding and finding ways to mitigate the negative impacts of community violence on children and adolescents. The current study sought to identify protective factors both within and outside the family that help to buffer adolescents from some of the costs of community violence.

Participation in activities and positive parent-child relations seemed to act as buffers to a limited extent. Although high levels of participation in activities and positive parent-child relations weakened the relation between exposure to violence and externalizing problems, significant associations still remained. In other words participation in activities or parent-child relations did not completely ameliorate the association between exposure to violence and externalizing problems. This finding suggests that exposure to violence may have a serious, negative influence on youth behavior problems in ways that are not easily overcome by generally positive factors that have been found to reduce adjustment problems to insignificant levels in the context of other stressors (Li, Nussbaum, & Richards, 2007).

The findings regarding extracurricular activities, in particular further suggest that intervention programs that center on involving adolescents in structured activities outside of school could serve the dual purpose of promoting positive adjustment among low-income youth and reducing the likelihood of socioemotional adjustment problems among youth exposed to violence. Given that involvement in extracurricular activities has been shown to predict resilience among economically disadvantaged youth (Tiet, Huizinga, & Byrnes, 2010) and that school-based intervention programs that encourage participation in extracurricular activities have shown promise in reducing problem behavior among adolescents (Eischens, Komro, Perry, Bosma, & Farbakhsh, 2004; Metsäpelto, Pulkkinen, & Tolvanen, 2010), programs that that provide access to structured activities are especially important.

Although school climate was negatively related to internalizing and externalizing problems, school climate did not moderate associations between exposure to violence and internalizing and externalizing problems. This finding suggests that positive perceptions of school climate generally confer protection against socioemotional adjustment problems, but do not modify relations between exposure to violence and socioemotional adjustment problems.

None of the moderators examined showed significant interactions with exposure to violence predicting internalizing problems. Li et al. (2007) also found fewer moderating effects in relation to internalizing problems compared to externalizing problems for African American youth exposed to a variety of risks. To explain this finding, the authors pointed to other studies suggesting that internalizing problems may be more difficult to overcome. For example, a natural experiment found that when families were able to escape poverty, externalizing problems in adolescents lessened but internalizing problems did not (Costello, Compton, Keeler, & Angold, 2003). An accumulation of protective factors as well as professional psychological intervention may be necessary to protect children from internalizing problems resulting from exposure to community violence.

Internalizing problems may be more difficult to overcome than externalizing problems partly because they tend to be less evident than externalizing problems, and therefore are less likely to come to the attention of or be targeted by parents or other adults. Therefore, even when adolescents are actively involved in extracurricular activities or have positive relationships with their parents, these experiences and relationships may not act as buffers against internalizing problems. Moreover, research suggests that parents are not always aware of the extent of their children's violence exposure (Ceballo, Dahl, Aretakis, & Ramirez, 2001). Positive parent-child relationships are probably most likely to mitigate the effects of community violence in situations where parents are aware of their children's exposure and are able to increase communication and support.

Our failure to find moderating effects on internalizing behavior may also be related to the psychological processes that underlie increases in internalizing behavior in response to exposure to violence. Recent research suggests that threat appraisal mediates the relation between exposure to community violence and adolescents' internalizing problems. In contrast, threat appraisal was not related to externalizing behavior problems and did not mediate the association between exposure to violence and externalizing (Kliewer & Sullivan, 2008). Thus, addressing internalizing problems that result from exposure to violence may require modifying cognitive processes (i.e., threat appraisals), and the moderators examined in the current study may not act to interrupt negative cognitive appraisals of threats that result from violence exposure.

Limitations

The New Hope Study was not specifically designed to examine exposure to violence; therefore, there are limitations with the study's measurement of this key variable. The measure of exposure to violence used in the current study assessed only five forms of violence exposure, and details about the contexts in which youth were exposed were not measured. Recent research suggests that violence experienced in different contexts is differentially related to adolescents' socioemotional adjustment (Mrug & Windle, 2010). Another limitation stemming from the study's design is that exposure to violence and some of the indicators of socioemotional adjustment were only assessed at Time 2. The absence of a Time 1 exposure to violence measure precluded a longitudinal examination of the link between exposure to violence and adolescent socioemotional adjustment. Because socioemotional adjustment was not assessed in the same manner at Time 1 and Time 2, we cannot rule out the possibility that preexisting socioemotional adjustment problems underlie the relation between exposure to violence and later socioemotional adjustment. Relevant research points to a bidirectional relationship between exposure to violence and behavior problems (O'Donnell et al., 2002; Stein et al., 2003). Although we were able to control for prior levels of internalizing and externalizing, it remains possible that adolescents with existing behavior problems may select into settings that put them at greater risk for violence exposure or may somehow be involved in the violence they end up witnessing or being exposed to. The fact that only self-reported exposure to violence was assessed can be viewed as another limitation. However, the use of computer-assisted self-interviewing likely minimized underreporting. In addition, past research has shown that child reports of exposure to violence are correlated with objective crime reports and moderately correlated

with parent reports (Guerra et al., 2003). Ideally the current study would have included multiple measures and informants for all key variables. Despite these limitations, the present study has several strengths, including a large sample size and multiple informants. This study moves beyond examining family-level variables as protective factors by also focusing on potential extrafamilial moderators that have not been considered in this area of research.

Future Directions

Future studies should continue to examine a wide range of extrafamilial moderators that show potential to act in a *protective-stabilizing* manner for children exposed to violence. Greater attention should be paid to finding ways to mitigate the effects of exposure to violence on internalizing problems. For protective factors that have already been identified and for those that will be identified in the future, the next step will be to begin to understand the processes that underlie protection. Rutter (2000) explains that protective factors can mitigate the effects of risks by reducing the impact of stress or adversity, providing neutralizing or compensatory experiences, or by fostering more adaptive cognitive processing of experiences. Understanding the mechanisms through which protective factors operate is an important direction for future research. Examining how hypothesized protective factors interact synergistically either through higher order interactions or through profile analysis is another promising area for future research. Finally, future research should explore whether protective factors vary by gender. Although studies have shown that boys are more likely to be exposed to violence than girls (Li, Nussbaum, & Richards, 2007; O'Donnell et al., 2002; Stein et al., 2003), other gender differences related to exposure to violence have not been well researched.

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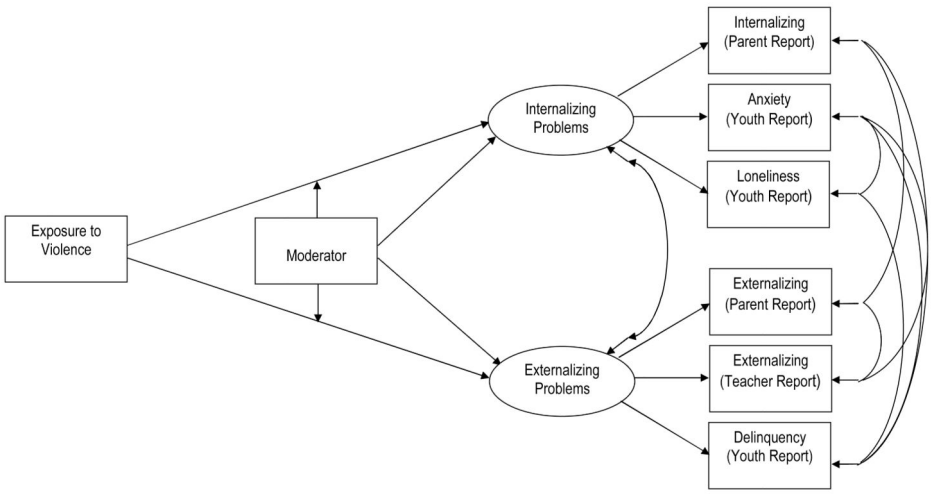

Figure 1.

Hypothesized model with potential moderators of the relation between exposure to violence and socioemotional adjustment.

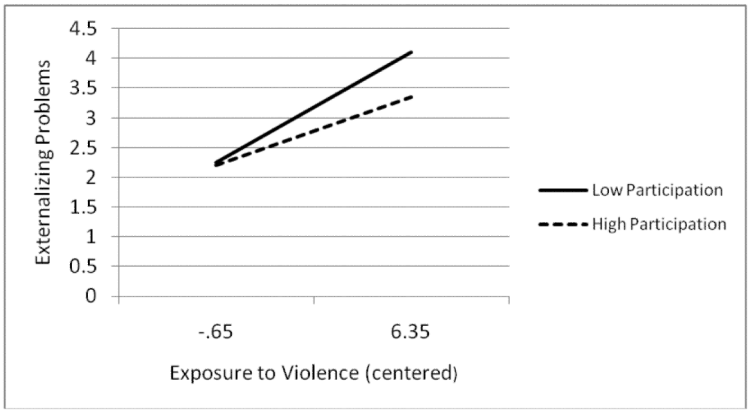

Figure 2.
Exposure to violence x extracurricular activities predicting externalizing problems.

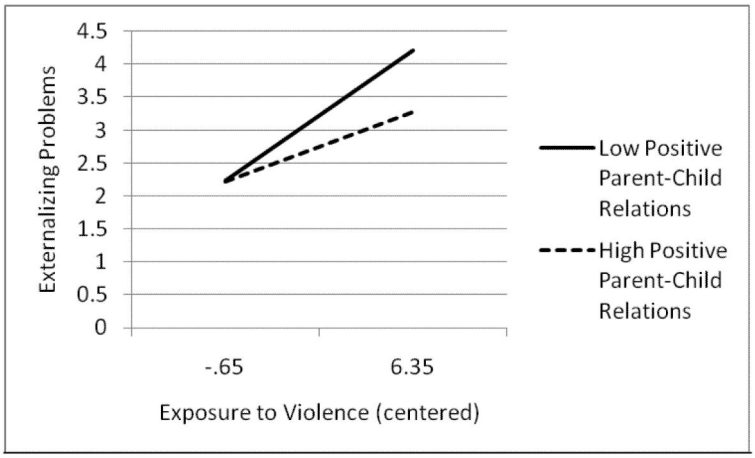

Figure 3.
Exposure to violence x positive parent-child relations predicting externalizing problems.

Table 1

Descriptive Statistics for Study Variables

	M	*SD*	95% Confidence Interval for Mean	
			Lower	Upper
1. Child age	14.92	1.14	14.80	15.03
2. SES	.00	1.51	−.15	.15
3. Internalizing (T1)	2.34	.54	2.28	2.41
4. Externalizing (T1)	2.26	.68	2.19	2.34
5. Exposure to violence	.65	1.17	.51	.78
6. Internalizing (T2, parent report)	2.36	.66	2.29	2.43
7. Anxiety (T2, youth report)	2.55	.73	2.47	2.63
8. Loneliness (T2, youth report)	1.78	.59	1.71	1.85
9. Externalizing (T2, parent report)	2.38	.74	2.30	2.46
10. Externalizing (T2, teacher report)	1.96	.85	1.84	2.07
11. Delinquency (T2, youth report)	.27	.39	.23	.31
12. Extracurricular activities	2.39	.79	2.30	2.48
13. Parent-child relations	4.47	.56	4.40	4.53
14. School climate	3.67	.88	3.58	3.77

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Table 2

Intercorrelations among Study Variables with 95% Confidence Intervals

Study Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Gender	-																		
2.Child age	−.03 [−13, .07]	-																	
3. African American	.08 [−02, .18]	.02 [−08, .12]	-																
4.Latino	−12** [−22, −.02]	.05 [−05, .15]	−.73** [−.77, −.68]	-															
5.Native American	−.05 [−15, .06]	−.04 [−14, .07]	−.21** [−.30, −.11]	−.11* [−21, −.01]	-														
6. SES	−.04 [−14, .06]	−.05 [−15, .05]	.10 [−01, .20]	−.08 [−18, .02]	−.16** [−.25, −.05]	-													
7. Experimental group	.08 [−02, .18]	.09 [−.01, .19]	.07 [−03, .17]	−.05 [−15, .05]	.05 [−05, .15]	.12* [01, .21]	-												
8. Internalizing (T1)	.07 [−05, .18]	.07 [−.04, .18]	.00 [−.11, .11]	−.02 [−13, .10]	−.10 [−21, .01]	−.10 [−21, .01]	−.07 [−18, .05]	-											
9. Externalizing (T1)	.19** [.08, .30]	−.02 [−13, .10]	.08 [−03, .19]	−.18** [−.29, −.07]	−.03 [−.14, .09]	−.13* [−.24, −.02]	−.01 [−13, .10]	.36** [26, .45]	-										
10. Exposure to violence	.15** [.04, .26]	.05 [−07, .16]	.11 [−01, .22]	−.07 [−19, .05]	.03 [−09, .15]	−.01 [−12, .11]	−.01 [−12, .11]	.17** [.05, .29]	.18** [.06, .30]	-									
11. Internalizing (T2, P)	−.02 [−12, .09]	.01 [−10, .12]	−.11 [−.22, .00]	.11 [−.00, .22]	.00 [−.11, .11]	−.09 [−.20, .02]	−.14** [−.24, −.04]	.40** [29, .49]	.18** [.06, .29]	.16** [.05, .27]	-								
12. Anxiety (T2, Y)	−.20** [−31, −.09]	−.03 [−.14, .08]	−.01 [−12, .11]	.04 [−08, .15]	−.03 [−.14, .09]	−.04 [−16, .07]	−.10 [−20, .01]	.15* [.03, .26]	−.11 [− 23, .01]	.13* [.02, .24]	.27** [.17, .37]	-							
13. Loneliness (T2, Y)	−.05 [−.16, .06]	−.01 [−12, .10]	.01 [−11, 12]	−.06 [−17, .06]	−.03 [−15, .08]	−.08 [−.19, .04]	−.16** [−.26, −.05]	.13* [01, .25]	.03 [−09, .16]	.11 [−01, .22]	.28** [.18, .38]	.53** [.44, .60]	-						
14. Externalizing (T2, P)	.05 [−.06, .16]	.09 [−.02, .20]	−.03 [−.14, .08]	−.08 [−19, .03]	.07 [−05, .18]	−.05 [−.16, .06]	−.04 [−15, .06]	.25** [14, .36]	.56** [47, .64]	.23** [12, .34]	.39** [29, .47]	.08 [−03, .19]	.11 [−01, .21]	-					
15. Externalizing (T2, T)	.08 [−06, .21]	−.13 [−.25, .00]	.02 [−12, .15]	−.07 [−.20, .07]	.01 [−12, .15]	.02 [−11, 15]	−.03 [−16, .10]	.13 [−01, .27]	.49** [.37, .59]	.14* [.00, .27]	.18** [.05, .30]	−.03 [−16, .10]	.17* [.04, .30]	.35** [23, .46]	-				
16. Delinquency (T2, Y)	.07 [−.04, .18]	.07 [−05, .17]	−.01 [−12, .11]	−.08 [−.19, .04]	.17** [.06, .28]	−.05 [−16, .07]	.02 [−09, .13]	.16** [.04, .28]	.30** [.19, .41]	.58** [.50, .65]	.08 [−03, .19]	.12* [01, .23]	.11* [.00, .22]	.28** [17, .38]	.31** [18, .42]	-			
17. Extracurricular activities	.07 [−05, .18]	−.10 [−21, .02]	.24** [.12, .35]	−.13* [−.25, −.01]	−.09 [−21, .03]	.07 [−05, .18]	.05 [−07, .16]	−.09 [−.22, .03]	−.01 [−.14, .11]	.02 [−.10, .14]	−.17** [−.28, −.05]	−.19** [−.30, −.08]	−.17** [−.28, −.05]	−.13* [−.24, −.01]	−.02 [−.15, .12]	−.11 [−.22, .01]	-		
18. Parent-child relations	.04 [−07, .16]	−.04 [−15, .08]	−.02 [−.14, .09]	−.01 [−12, .11]	.01 [−11, 12]	.07 [−05, .18]	−.05 [−17, .06]	−.09 [−.20, .02]	− .00 [−12, .11]	−.05 [−17, .08]	−.03 [−15, .09]	−.09 [−21, .04]	−.01 [−13, .12]	.01 [−11, 13]	.07 [−07, .21]	−.21** [−.32, −.09]	.10 [−.02, .23]	-	
19. School climate	−.01 [−12, .10]	−.16* [−27, −.05]	−.03 [−15, .08]	.09 [−.02, .20]	−.05 [−17, .06]	−.02 [−13, .10]	.04 [−07, .15]	−.02 [−.14, .10]	−.21* [−.33, −.09]	−.16** [−27, −.05]	−.16** [−.26, −.05]	−.27** [−37, −.16]	−.35** [− 44, −.25]	−.26** [−36, −.15]	−.27** [−39, −.14]	−.25** [−35, −.14]	.14* [02, .25]	−.02 [−.14, .11]	-

Note. Y denotes youth report, P denotes parent report, and T denotes teacher report. Correlations between indicators for each latent construct are in bold.

* p < .05

** $p < .01$

Table 3

Structural Equation Models Examining Main and Interactive Effects of Participation in Extracurricular Activities

	Main effects model				Interactive effects model			
	Internalizing		Externalizing		Internalizing		Externalizing	
	β (S.E.)	95% CI	β (S.E.)	95% CI	β (S.E.)	95% CI	β (S.E.)	95% CI
Predictor variables								
Gender	−.11 (.08)	[−.28, .05]	−.09 (.06)	[−.20, .02]	−.12 (.09)	[−.29, .05]	−.10 (.06)	[−.21, .01]
Age	−.08 (.07)	[−.21, .06]	.05 (.06)	[−.06, .17]	−.08 (.07)	[−.21, .06]	.04 (.06)	[−.07, .15]
African American	−.00 (.11)	[−.22, .22]	−.17 (.09)	[−.35, .00]	.00 (.11)	[−.22, .22]	−.18 (.09)*	0] .0 −. 6, .3 −.
Latino	.12 (.12)	[−.12, .36]	−.15 (.10)	[−.35, .05]	.13 (.13)	[−.12, .37]	−.15 (.10)	[−.34, .05]
Native American	.02 (.10)	[−.17, .22]	.11 (.11)	[−.10, .31]	.02 (.10)	[−.17, .21]	.10 (.11)	[−.11, .30]
SES	−.06 (.09)	[−.23, .10]	.04 (.06)	[−.08, .16]	−.06 (.09)	[−.23, .11]	.05 (.06)	[−.07, .16]
Experimental group	−.14 (.08)	[−.29, .01]	.02 (.06)	[−.09, .14]	−.14 (.08)	[−.29, .01]	.04 (.06)	[.49, .89]
Internalizing (T1)	.43 (.08)**	[.27, .58]	--	--	.43 (.08)**	[.27, .58]	--	--
Externalizing (T1)	--	--	.69 (.09)**	[.50, .87]	--	--	.69 (.10)**	[.49, .89]
Exposure to violence	.28 (.09)**	[.11, .45]	.60 (.10)**	[.40, .80]	.28 (.09)**	[.10, .44]	.62 (.06)**	[.43, .81]
Extracurricular activities	−.21 (.09)*	[−.38, −.04]	−.15 (.06)*	[−.28, −.03]	−.21 (.09)*	[−.38, −.04]	−.15 (.06)*	[−.27, −.03]
Two-way interaction	--	--	--	--	−.02 (.06)	[−.13, .10]	−.15 (.08)*	[−.30, −.01]
Factor loadings								
Internalizing	.71 (.09)**	[.53, .88]	--	--	.70 (.09)**	[.53, .87]	--	--
Anxiety	.42 (.08)**	[.26, .57]	--	--	.42 (.08)**	[.27, .58]	--	--
Loneliness	.40 (.07)**	[.25, .54]	--	--	.40 (.07)**	[.25, .54]	--	--
Externalizing (parent report)	--	--	.56 (.06)**	[.44, .68]	--	--	.54 (.07)**	[.40, .68]
Externalizing (parent report)	--	--	.41 (.09)**	[.24, .58]	--	--	.41 (.09)**	[.25, .58]
Delinquency	--	--	.59 (.06)**	[.48, .71]	--	--	.61 (.06)**	[.49, .73]

Model summary				
Fit Indices	χ^2	df	RMSEA	SRMR
Main effects model	165.75**	53	.07	.05
Interactive effects model	159.53**	51	.07	.05

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Note. Standardized parameter estimates are shown. Parameter estimate standard errors are shown in parentheses.

* $p < .05$

** $p < .01$

Table 4

Structural Equation Models Examining Main and Interactive Effects of Positive Parent-Child Relations

	Main effects model				Interactive effects model			
	Internalizing		Externalizing		Internalizing		Externalizing	
	β(S.E.)	95% CI	β(S.E.)	95% CI	β(S.E.)	95% CI	β(S.E.)	95% CI
Predictor variables								
Gender	−.10 (.08)	[−.27, .06]	−.09 (.06)	[−.20, .03]	−.11 (.08)	[−.27, .06]	−.09 (.06)	[−.19, .02]
Age	−.05 (.07)	[−.18, .08]	.07 (.06)	[−.04, .18]	−.05 (.07)	[−.18, .08]	.08 (.05)	[−.03, .18]
African American	−.06 (.11)	[.28, .17]	−.22 (.09)*	[−.39, −.05]	−.05 (.12)	[−.28, .18]	−.24 (.09)*	[−.41, −.06]
Latino	.12 (.13)	[−.13, .36]	−.16 (.10)	[−.35, .04]	.12 (.13)	[−.12, .37]	−.17 (.10)	[−.36, .03]
Native American	.03 (.10)	[−.16, .23]	.12 (.11)	[−.09, .33]	.03 (.10)	[−.16, .22]	.12 (.11)	[−.09, .33]
SES	−.07 (.08)	[−.23, .10]	.04 (.06)	[−.08, .16]	−.07 (.08)	[−.23, .10]	.03 (.06)	[−.09, .14]
Experimental group	−.14 (.08)	[−.28, .01]	.02 (.06)	[−.10, .13]	−.14 (.08)	[−.28, .01]	.04 (.06)	[−.07, .15]
Internalizing (T1)	.43 (.08)**	[.28, .58]	--	--	.43 (.08)**	[.27, .60]	--	--
Externalizing (T1)	--	--	.66 (.11)**	[.45, .87]	--	--	.59 (.13)**	[.32, .86]
Exposure to violence	.26 (.09)**	[.09, .42]	.62 (.10)**	[.44, .81]	.25 (.09)**	[.08, .42]	.67 (.09)**	[.50, .84]
Pos. parent-child relations	−.04 (.06)	[−.16, .08]	−.16 (.07)*	[−.30, −.02]	−.04 (.07)	[−.17, .09]	−.13 (.06)*	[−.26, −.01]
Two-way interaction	--	--	--	--	−.01 (.08)	[−16,14]	−.19 (.08)*	[−.35, −.03]
Factor loadings								
Internalizing	.74 (.09)**	[.56, .92]	--	--	.74(09)**	[.55, .92]	--	--
Anxiety	.39 (.08)**	[.23, .55]	--	--	.39 (.08)**	[.23, .56]	--	--
Loneliness	.38 (.07)**	[.23, .52]	--	--	.38 (.07)**	[.24, .53]	--	--
Externalizing (parent report)	--	--	.54 (.06)**	[.42, .66]	--	--	.50 (.07)**	[.37, .64]
Externalizing (parent report)	--	--	.39 (.09)**	[.22, .55]	--	--	.37 (.08)**	[.22, .53]
Delinquency	--	--	.62 (.06)**	[.50, .74]	--	--	.66 (.07)**	[.52. .80]

Model summary				
Fit Indices	χ^2	df	RMSEA	SRMR
Main effects model	178.31**	53	.08	.05

	Main effects model				Interactive effects model			
	Internalizing		Externalizing		Internalizing		Externalizing	
	β (S.E.)	95% CI	β (S.E.)	95% CI	β (S.E.)	95% CI	β (S.E.)	95% CI
Interactive effects model	172.25**	51	.08	.05				

Note. Standardized parameter estimates are shown. Parameter estimate standard errors are listed in parentheses.

* $p < .05$

** $p < .01$

Table 5

Structural Equation Models Examining Main and Interactive Effects of School Climate

	Main effects model				Interactive effects model			
	Internalizing		Externalizing		Internalizing		Externalizing	
	β (S.E.)	95% CI	β (S.E.)	95% CI	β (S.E.)	95% CI	β (S.E.)	95% CI
Predictor variables								
Gender	−.18 (.08)*	[−.34, −.02]	−.11 (.06)	[−.22, .01]	−.18 (.08)*	[−.34, −.03]	−.11 (.06)	[−.22, .01]
Age	−.14 (.07)*	[−.26, −.01	.03 (.06)	[−.08, .13]	−.14 (.07)*	[−.27, −.01]	.03 (.06)	[−.08, .13]
African American	−.05 (.13)	[−.30, .20]	−.21 (.09)*	[−.37, −.04]	−.06 (.13)	[−31, .19]	−.21 (.09)	[−.38, −.04]
Latino	.10 (.14)	[−.18, .38]	−.15 (.10)	[−.35, .04]	.10 (.14)	[−19, .38]	−.15 (.10)	[−.35, .04]
Native American	−.03 (.11)	[−.24, .19]	.09 (.10)	[−.11, .29]	− .04 (.11)	[−.25, .18]	.09 (.10)	[−.11, .29]
SES	−.10 (.08)	[−.26, .06]	.02 (.06)	[−.09, .14]	−.10 (.08)	[−.26, .05]	.02 (.06)	[−.09, .14]
Experimental group	−.14 (.07)	[−.29, .00]	.03 (.06)	[−.08, .15]	−.15 (.07)*	[−.30, −.01]	.03 (.06)	[−.09, .15]
Internalizing (T1)	.43 (.10)**	[.24, .62]	--	--	.42 (.10)**	[.23, .62]	--	--
Externalizing (T1)	--	--	.66 (.09)**	[.48, .84]	--	--	.66 (.09)**	[.48, .84]
Exposure to violence	.19 (.10)	[−.00, .39]	.55 (.11)**	[.34, .76]	.22 (.12)	[−.01, .44]	.56 (.11)**	[.35, .76]
School climate	−.43 (.11)**	[−.64, −.22]	−.23 (.07)**	[−36, −.11]	−.45 (.11)**	[−.66, −.23]	−.24 (.06)**	[−36, −.11]
Two-way interaction	--	--	--	--	.07 (.09)	[−.10, .24]	.01 (.09)	[−.17, .19]
Factor loadings								
Internalizing	.58 (.08)**	[.41, .74]	--	--	.57 (.09)**	[.40, .74]	--	--
Anxiety	.51 (.08)**	[.35, .67]	--	--	.51 (.08)**	[.35, .67]	--	--
Loneliness	.52 (.09)**	[.33,.69]	--	--	.53 (.10)**	[.33, .72]	--	--
Externalizing (parent report)	--	--	.56 (.06)**	[.44, .68]	--	--	.56 (.06)**	[.43, .68]
Externalizing (parent report)	--	--	.42 (.09)**	[.25, .60]	--	--	.42 (.09)**	[.25, .60]
Delinquency	--	--	.58 (.06)**	[.46, .69]	--	--	.58 (.06)**	[.46, .70]

Model summary				
Fit Indices	χ^2	df	RMSEA	SRMR
Main effects model	189.56**	53	.08	.05

	Main effects model				Interactive effects model			
	Internalizing		Externalizing		Internalizing		Externalizing	
	β (S.E.)	95% CI	β (S.E.)	95% CI	β (S.E.)	95% CI	β (S.E.)	95% CI
Interactive effects model	192.01**	51	.08	.05				

Note. Standardized parameter estimates are shown. Parameter estimate standard errors are listed in parentheses.

* $p < .05$

** $p < .01$