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ORIGINAL PAPER

Exposure to Violence, Coping, and Academic Achievement in Latinx Adolescents

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Abstract
The Latinx population is currently the largest ethnic minority group in the USA. Moreover, studies demonstrate that Latinx youth are at a higher risk for exposure to community violence and for negative school outcomes compared to their non-Latinx white peers. Though more attention has been devoted to understanding negative school outcomes, there is surprisingly little empirical data directly testing associations between community violence and academic outcomes. Additionally, little research explores potential moderators, such as youth coping mechanisms, that may buffer the negative effects of community violence on academic outcomes in Latinx adolescents. In the current study, we examine associations between exposure to community violence, posttraumatic stress disorder symptoms, coping, and academic achievement in a sample of 168 Latinx adolescents (age range = 11–15, 56.2% girls). We hypothesized that (a) exposure to community violence is negatively associated with academic achievement, (b) Active Coping is positively associated with academic achievement, and (c) Avoidant Coping is negatively associated with academic achievement. We also hypothesized that coping would moderate associations between violence exposure and academic outcomes, with Active Coping expected to be a protective factor and Avoidant Coping expected to be a risk factor. In line with our hypotheses, bivariate results demonstrate that violence exposure and posttraumatic stress symptoms are negatively associated with grade point average (GPA). Multivariate analyses controlling for baseline GPA, however, revealed that only youth age and Active Coping were independently associated with GPA. Results provide empirical data on associations between violence exposure and GPA and highlight potential intervention targets for Latinx students in academic settings.

Keywords Community violence · Coping · Academic achievement · Latinx · Adolescents

Exposure to Violence, Coping, and Academic Achievement in Latinx Adolescents

Community violence refers to deliberate acts intended to cause physical harm to people in a community (Cooley-Quille et al., 1995). Specific examples include experiencing and witnessing a threat of harm, physical assault, robbery, shooting, and stabbing. Exposure to such violence is associated with a wide range of emotional and behavioral difficulties (e.g., Elsaesser, 2018; Fowler et al., 2009; Gaylord-Harden et al., 2017; Gudiño et al., 2012; Taylor et al., 2018). Posttraumatic stress, one specific syndrome among a range of possible outcomes, is particularly relevant given that exposure to trauma (e.g., community violence) is a prerequisite for experiencing posttraumatic stress. In addition to emotional and behavioral symptoms, community violence exposure is relevant to youth academic functioning, with studies suggesting associations with academic performance and school engagement (e.g., Elsaesser et al., 2020; Janosz et al., 2018; King & Mrug, 2018; Schwartz & Gorman, 2003). Taken together, these findings point to the value of examining academic outcomes in the context of Exposure to Violence and posttraumatic stress.

Violence Exposure and PostTraumatic Stress

In a review of the literature on community violence, an estimated 50–96% of children and adolescents in urban communities in the USA are estimated to have been exposed to

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community violence (Stein et al., 2003). While these prevalence estimates are alarmingly high and the range of prevalence estimates is large, variability in rates of exposure may be attributed to factors such as socio-economic status, ethnicity, race, and age (Stein et al., 2003). Additionally, estimates of Exposure to Violence vary by type of violence or type of exposure, with the highest prevalence pertaining to witnessed violence (87%), followed by direct victimization (59%), and declining when considering exposure to severe violence (e.g., witnessing shootings; 29%; Gudiño et al., 2011). Unfortunately, within urban communities with high levels of community violence, youth are typically experiencing chronic and varied types of exposure to multiple types of violence on an ongoing basis (e.g., Gudiño et al., 2011; Richards et al., 2015). While community violence impacts children regardless of racial/ethnic background, Latinx youth are disproportionately exposed to community violence compared to their non-Latinx white peers (Crouch et al., 2000). Moreover, results from the National Survey of Adolescents highlight disparities in violence exposure: 50% of Latinx youth reported experiences of physical assault compared to 34.3% of white peers and 20.7% of Latinx youth reported experiences of witnessed violence compared to 15.5% of white peers (2000). Importantly, research typically considers risk for exposure across broad categories of race/ethnicity and with little attention to different experiences of Latinx subgroups (e.g., Mexican, Puerto Rican, Dominican, Cuban, etc.). In fact, risk of exposure is closely tied to the social and ecological factors that drive community violence in the first place, creating opportunities for exposure. However, when considering youth Exposure to Violence within a single community with high rates of community violence youth exposure is uniformly high across demographic dimensions (e.g., immigrant and non-immigrant youth in the same U.S. community; Gudiño et al., 2011).

Research also demonstrates that exposure to community violence increases the likelihood of negative academic outcomes (Borofsky et al., 2013; Hurt et al., 2001). Accordingly, in a study that assessed the relationship between 7-year-olds' violence exposure, feelings of distress, academic performance, and self-esteem, increased exposure to community violence was related to higher composite anxiety and depression scores, lower self-esteem, lower GPA, and increased school absence (Hurt et al., 2001). Further, Borofsky and colleagues (2013) proposed that community violence increases youth vulnerability to negative mental health outcomes and also decreases school connectedness. These results highlight the strong associations between community violence exposure and other measures of psychological adjustment and functioning. They also suggest that the impact of community violence extends not only to negative psychological outcomes, but also to poor academic outcomes. In addition, pathways between Exposure to Violence and poor academic outcomes may be explained by indirect and direct mechanisms, including: increased anxiety and associated attentional difficulties (e.g., increased worry related to the event leading to difficulty focusing on school material); decreased school attendance which might impact academic engagement; and increased logistical barriers (e.g., families exposed to community violence may need to relocate more frequently; Elsaesser et al., 2020; Janosz et al., 2018). Operating in conjunction, these factors might influence academic engagement and achievement.

Research suggests that PTSD symptomology, specifically, increases the likelihood of poor academic outcomes (Boyraz et al., 2013, 2016). However, findings are somewhat mixed (Bryan et al., 2014; Jones et al., 1997), with some results pointing to factors other than PTSD symptomatology that may better account for poor academic outcomes. Moreover, Bryan and colleagues (2014) found that depression symptoms played a greater role in accounting for academic outcomes than PTSD symptoms. Results also demonstrated that failing exams fully mediated the relationship between depression and GPA, suggesting that the ability to take exams is inhibited by depressive symptoms which leads to poor academic outcomes (Bryan et al., 2014). The current study will clarify these inconsistencies by considering the independent effects of Exposure to Violence or PTSD symptomology on academic outcomes. Despite this potential association between PTSD and academic functioning, exposure to community violence is much more prevalent than the prevalence of those who go on to develop PTSD. The current study therefore considers both risk and protective factors for youth exposed to community violence.

While there are many ways to conceptualize student success and achievement that focus on engagement, academic persistence, and various measures of achievement of success (see Leonard & Gudiño, 2020), we focus on measuring grade point average (GPA). Furthermore, GPA may be influenced by a range of personal and institutional factors impacting those making and receiving the grades. Thus, GPA is only a proxy for a broader measure of academic achievement, and we acknowledge that it is subject to confounding influences. Nonetheless, student GPA has important implications for student success, opportunity, and functioning with schools. We therefore view GPA as an influential academic outcome rather than as a perfect measure of student achievement and ability.

Latinx Youth

The Latinx population currently represents the largest ethnic minority group in the USA and is expected to comprise 28.6% of the population by 2060 (Colby & Ortma, 2015). Currently, 23% of the USA population under the

age of 18 self-identifies as Latinx (Pew Research Center, 2011). Unfortunately, Latinx youth exhibit higher rates of high school attrition and lower academic achievement (i.e., student GPA, number of credits earned, standardized test scores, and graduation rate) compared to their non-Latinx white peers (Gándara et al., 1998; National Center for Education Statistics, 2007). This achievement gap occurs within a broader context of sociocultural factors, educational experiences, and institutional factors that create systemic barriers to academic success (Taggart, 2018). For example, prior research conducted with the current sample found that acculturative stress was associated with low academic achievement and was particularly detrimental to U.S.-born Latinx youth relative to immigrant Latinx youth (removed for blinding). Beyond cultural stressors, exposure to community violence represents a pervasive environmental stressor that may also explain negative academic outcomes, particularly among Latinx youth living in communities with high rates of exposure. In fact, there is a growing interest in understanding how to support the needs of trauma-exposed students in schools. Preliminary findings demonstrate that school-based trauma interventions can serve to improve academic performance in predominantly low-income Latinx youth (Kataoka et al., 2011). However, Stratford and colleagues (2020) emphasize the need to consider school-wide approaches, beyond those requiring professional mental health services, to support student success more broadly. Ultimately, elimination of community violence would be the most effective strategy for preventing youth risk associated with exposure. However, examination of risk and protective factors may nonetheless be critical as we consider long-term strategies aimed at prevention and intervention.

Active vs. Avoidant Coping Styles

While Exposure to Violence and academic success occurs within a broader context of ecological and systemic factors, in the current study, we focus on individual youth factors that (a) are modifiable, (b) are independent of mental health symptoms, and (c) may help explain academic risk and resilience in the face of violence exposure. This does not suggest that individual student interventions should be prioritized when addressing community violence exposure and academic success within schools. Instead, considering individual differences in responses to community violence can be integrated within a broader multi-tiered system of supports approach (Kearney & Graczyk, 2020). Individual differences in youth coping represent one factor that is commonly used to explain responses to stressful experiences. In the current study, we distinguish between Active Coping strategies and Avoidant Coping strategies. Further, Active Coping is defined as the act of acknowledging and confronting stressful emotions or thoughts (e.g., problem solving or seeking support), and Avoidant Coping is defined as the act of avoiding stressors or responses to stressors through withdrawal or denial (Gudiño et al., 2018).

While Exposure to Violence may increase risk for negative outcomes, exposure does not confer the same risk for all individuals. The ability to effectively cope has been identified as a protective factor to childhood adversity (Hooberman et al., 2010; Larner & Blow, 2011; Park et al., 2015). Research demonstrates that adaptive coping strategies predict academic success, positive mental health outcomes, and general well-being (Galatzer-Levy et al., 2012; Saklofske et al., 2012; Schnider et al., 2007). Associations between adaptive coping and a wide range of outcomes point to the value of coping strategies as long-term predictors of success.

Research suggests that youth who employ Active Coping strategies believe they are more capable of managing stressful situations (Mosher & Prelow, 2007). Conversely, Avoidant Coping has been associated with exacerbating the effects of stress (Ebata & Moos, 1994), and even served as a mediator between sexual abuse and stress-related symptoms in adolescents (Bal et al., 2003). In addition, Active Coping is generally associated with fewer internalizing symptoms (e.g., depression, anxiety, loneliness, and withdrawal) and externalizing symptoms (e.g., disobeying rules, cheating, physical aggression, destruction of property, and stealing), while Avoidant Coping is associated with greater internalizing and externalizing symptoms (Compas et al., 2001). These findings generally suggest that Active Coping strategies are markers of resilience (i.e., one's capacity to adapt well or "bounce back" in the face of stress or trauma exposure). However, recent research suggests that the adaptive nature of active and Avoidant Coping may be more complex. For example, Gudiño and colleagues (2018) found that at the highest levels of community violence exposure, Active Coping exacerbated risk for PTSD in Latinx youth. The authors conclude that the adaptiveness of a coping strategy depends on the nature of the stressor and the specific outcome of interest (Gudiño et al., 2018). While individual responses to community violence only partially account for poor academic outcomes within a broader web of factors, and ideally exposure to community violence would be the primary target for intervention, youth coping strategies may be one additional avenue by which schools can support student success.

Current Study

Latinx students are at high risk for exposure to community violence (Crouch et al., 2000) and for negative school outcomes (National Center for Education Statistics, 2007). Given findings that Active Coping strategies can serve as a protective factor and that exposure to community violence

is a risk factor for Latinx youth, the current study explores the developmental pathways that give rise to positive or negative academic performance (i.e., GPA). We hypothesize that in Latinx adolescents (1) exposure to community violence at Time 1 will be negatively associated with GPA at Time 2 (i.e., six months later), over and above the effects of PTSD at Time 1, (2) Active Coping at Time 1 will be positively associated with GPA at Time 1 and Time 2, and (3) Avoidant Coping at Time 1 will be negatively associated with the GPA at Time 1 and Time 2. We further consider whether active and Avoidant Coping strategies moderate the relationship between violence exposure at Time 1 and GPA at Time 2. We predict that Active Coping will buffer this association, while Avoidant Coping will exacerbate this relationship.

Method

Participants

Participants were 168 Latinx adolescent students recruited from a middle school in a neighborhood in Southern California (age range = 11–15, *SD* = 0.70, 56.2% female). During the time of study recruitment, 20% of families in the area where the middle school was located lived below the federal poverty line (U.S. Census Bureau, 2009). In addition, at the time of data collection, 91.4% of the students enrolled in the school were Latinx, and 42.7% of students were classified as English Learners. (2,135 total students were enrolled in the school.) Participants in the original study were recruited from the 10 sixth-grade homeroom classrooms with the highest proportions of English Learners and two mixed-grade homeroom classrooms conducted in Spanish because they included students with the lowest levels of English proficiency in the school. Out of 331 eligible students, consent forms were signed and returned by parents ($n = 273$), with 170 parents ultimately allowing their child to participate in the current study ($n = 2$ students withdrew from school before the beginning of the study). The current study included 168 participants at Time 1 and 161 participants at Time 2, six months later.

In the current sample, sixty-two students (36.9%) were immigrants and had lived in the USA for an average of 3.82 years (*SD* = 2.88): 62.9% were born in Mexico ($n = 39$), 22.6% were born in El Salvador ($n = 14$), and 14.5% were born in either Honduras, Ecuador, Columbia, or Guatemala ($n = 9$). Although the majority of students were born in the USA (63.1%), the majority of students were from Latinx immigrant families (95.8% of mothers and 96.4% of fathers were born outside of the USA).

Measures

Demographic Information

Demographic variables such as age, gender, current grade in school, racial/ethnic background, and place of birth, along with parent demographic information, were gathered during the Time 1 assessment.

Exposure to Violence

Exposure to Violence between Time 1 and Time 2 was measured using the Exposure to Violence Scale (EVS; Singer et al., 1995). The EVS is a child self-report measure that assesses, (1) witnessing violence (e.g., others being beaten; 3 items total) (2) personal victimization (e.g., being beaten, personal threats of harm, being slapped/hit/or punched; 3 items total), and (3) witnessing weapon-related violence (e.g., "How often have you seen someone else being attacked or stabbed with a knife?"; two items total). Students rated whether they experienced such events using a 4-point Likert scale ranging from 0 (never) to 3 (very often). Given the limited number of items on each subscale and that specific types of community violence are significantly correlated with one another (all p's < 0.001), we used a total score. In addition, high rates and chronic exposure to community violence are best captured by considering overall exposure rather than statistically parsing out individual impacts that co-occur in high-risk settings. Relevant scales were then summed to calculate subscale scores for victimization, witnessing, and weapon-related violence. The EVS has been validated in adolescents ($n = 3735$; age range = 14–19), with Latinx adolescents composing 23% of the sample (Singer et al., 1995). Moreover, the EVS total score demonstrated acceptable reliability in both English and Spanish (Overall $\alpha = 0.79$; English $\alpha = 0.77$; Spanish $\alpha = 0.86$).

Coping Strategies

Coping was assessed at Time 1 using the Children's Coping Strategies Checklist (CCSC; Ayers et al., 1996). The CCSC is a 44-item child self-report measure that assesses Active Coping (i.e., positive cognitive restructuring, cognitive decision making, direct problem solving, and seeking understanding) and Avoidant Coping (i.e., cognitive avoidance and avoidant actions). Students reported how often they used each coping strategy using a 4-point Likert scale ranging from 1 (never) to 4 (most of the time). The ten subscales in the CCSC load on to the four higher-order factors of avoidance, distraction, and support seeking, according to results from factor analysis (1996). Six subscales related to

active and Avoidant Coping only were administered in the current study. Moreover, the CCSC has been validated in a large urban sample of youth (age range = 12–15), with 53.2% of students being Mexican–American and 43% of students completing the measure in Spanish (Singer et al., 1995). In the current study, internal consistency reliability for the individual subscales ranged from poor to acceptable: cognitive decision making (α = 0.81), positive cognitive restructuring (α = 0.68), direct problem-solving (α = 0.82), seeking understanding (α = 0.80), avoidant actions (α = 0.66), and cognitive avoidance (α = 0.77). However, reliability for the higher-order dimensions of Active Coping (16 items; Overall α = 0.93; Spanish α = 0.95; English α = 0.93) and Avoidant Coping (8 items; Overall α = 0.85; Spanish α = 0.91; English α = 0.82) was good in both English and Spanish. A standard z-score was created for each of the six subscales. These standard scores were then averaged across relevant subscales to create active and Avoidant Coping composite scores used in analyses.

Posttraumatic Stress Disorder

Symptoms of posttraumatic stress disorder (PTSD) were assessed at Time 2 using the Child PTSD Symptom Scale (CPSS; Foa et al., 2001). The CPSS is a 17-item child self-report measure that assesses symptoms of re-experiencing, avoidance, and arousal clusters of PTSD, in line with the DSM-IV-TR (American Psychiatric Association, 2000). Using a 4-point scale (0 = "Not at all," 3 = "5 or more times a week"), children rate how frequently each symptom has occurred in the past month. In addition, the CPSS demonstrates strong psychometric properties in a similar Latinx school age sample (Kataoka et al. 2003). The CPSS total score demonstrated good reliability in both English and Spanish (Overall α = 0.91; Spanish α = 0.92; English α = 0.91).

Academic Achievement

Academic achievement was measured by performance in core academic classes. Grades were obtained by research staff from official school records for the Fall and Spring semesters for Math, Social Studies, Science, and English classes, and cumulative GPA ranging from 0 to 4.0 was calculated for each semester.

Procedure

This study relies on secondary analysis of data from a study examining the impact of community violence exposure on Latinx youth mental health (removed for blinding). Sampling and recruitment were completed over two unique stages. Researchers made announcements in both English and Spanish in student homerooms, during which letters and consent forms were provided for students to deliver to their parents or guardians. All study materials were provided in both English and Spanish and the research staff included bilingual Spanish speakers. In order to maximize participation, small incentives were offered to individual students (e.g., small toy or pencil) and to classrooms (i.e., a classroom party when 95% of the forms were returned). Once parental consent was granted, researchers obtained student assent before administering surveys in groups. Students completed a survey at the end of the fall semester (i.e., Time 1) and again 6 months later at the end of the spring semester (i.e., Time 2). The survey was administered to students by trained research staff that read the items aloud, with additional staff available to answer questions and to provide support.

All study materials were available in English and Spanish, and students had the option of completing the survey in their preferred language (19.6% of participants elected to complete the survey in Spanish). In line with recommendations by Marin & Marin (1991), the research team created Spanish versions of materials without existing translations through translation, back-translation, and subsequent reconciliation of discrepancies. Relevant to the current study, demographic factors, coping styles, and Fall GPA were assessed at Time 1, while exposure to community violence between Time 1 and Time 2, PTSD symptoms, and Spring GPA were all assessed at Time 2. Participants received a $10 merchandise gift card for participation at Time 1 and a $15 gift card for participation at Time 2. All study procedures were approved by the [removed for blinding] institutional review board, and the secondary analysis of these data was approved by the [removed for blinding] institutional review board.

Data Analysis

We calculated descriptive statistics and bivariate correlations to examine associations among study variables. To test primary study hypotheses, we constructed a hierarchical linear regression model predicting Spring GPA. In the first step of the model, we entered youth gender, age, Fall GPA, and symptoms of PTSD. We also entered youth exposure to community violence and active and Avoidant Coping at this step to test for main effects of the primary study variables. In the second step, we entered the interaction between Active Coping and violence exposure and the interaction between Avoidant Coping and violence exposure. To address issues of multicollinearity, we centered all predictors before creating interaction terms (Aiken & West, 1991). To test hypotheses about main effects, we focus on interpreting the statistical significance of individual predictors (significance level set at $p < 0.05$) and the proportion of variance

accounted for at Step 1 (Model R^2). For hypotheses about moderation effects, we focus on the statistical significance of interaction terms.

Initial analyses considered whether subtypes of violence exposure and immigrant status should be included. With respect to violence exposure, results were consistent regardless of whether subscales or a total score were used. In addition, there was no main effect of immigrant status on Spring GPA, nor did it significantly moderate the effect of violence exposure, PTSD, Active Coping, or Avoidant Coping on Spring GPA ($p > 0.05$).

Results

Bivariate correlations revealed significant relationships between Spring GPA and several key predictors. As expected, Fall GPA was positively and strongly associated with Spring GPA ($r = 0.743$, $p < 0.001$). Youth gender was also associated with Spring GPA, such that girls had higher GPAs than boys ($r = 0.192$, $p = 0.029$). In addition, Exposure to Violence ($r = -0.270$, $p = 0.002$) and PTSD symptoms ($r = -0.200$, $p = 0.024$) were negatively associated with Spring GPA. Neither Active Coping ($r = 0.122$, $p = 0.168$) nor Avoidant Coping ($r = 0.119$, $p = 0.178$) were significantly associated with Spring GPA in bivariate analyses (see Table 1).

We used hierarchical linear regression to conduct a multivariate test of main and moderating effects on academic achievement. In the first step of a model predicting Spring GPA, we entered youth gender, age, and Fall GPA as covariates and included violence exposure, PTSD symptoms, Avoidant Coping, and Active Coping. This main effects model predicted 61.3% of the variance in Spring GPA; $F(7, 124) = 26.5$, $p < 0.001$. As shown in Table 2, Fall GPA ($\beta = 0.774$, $p < 0.001$) and Active Coping ($\beta = 0.267$, $p = 0.020$) were independently and positively associated with Spring GPA. As Fall GPA and use of Active Coping skills increased, so did Spring GPA. Age and Spring GPA shared a negative relationship ($\beta = -0.119$, $p = 0.045$); that is, Spring GPA was lower for older students. In addition, Avoidant Coping was only marginally associated with Spring GPA, such that GPA decreased as use of avoidant strategies increased ($\beta = -0.193$, $p = 0.090$). PTSD symptoms, Exposure to Violence, and youth gender were not independently associated with Spring GPA in multivariate analyses.

In the second step of this hierarchical model, we entered one interaction term (violence exposure X Active Coping or violence exposure X Avoidant Coping) to test whether active and Avoidant Coping moderated the relationship between exposure to community violence and Spring GPA. However,

Table 1 Bivariate correlations between study variables

	1	2	3	4	5	6	7	8
1. Age	1							
2. Gender	–.082	1						
3. Fall GPA	–.007	.300**	1					
4. Spring GPA	–.137	.192*	.743**	1				
5. Avoidant Coping	–.133	.185*	.110	119	1			
6. Active Coping	–.144	.200**	.026	.122	.857**	1		
7. Time 1–2 Violence Exposure	.121	–.088	–.276**	–270	.025	.037	1	
8. Time 2 PTSD Symptoms	–.032	.168*	–.187*	–.200*	.139	.085	.602**	1

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 2 Regression analysis predicting Spring GPA

	B	Std. Error	β	t	Sig
Constant (Spring GPA)	2.931	0.950		3.086	0.003
Fall GPA	0.692	0.057	0.774	12.083	0.001
Gender (reference = boy)	– 0.133	0.108	– 0.080	– 1.238	0.218
Age	– 0.167	0.083	– 0.119	– 2.024	0.045
Time 1–2 Violence Exposure	– 0.014	0.016	– 0.063	– 0.839	0.403
Time 2 PTSD Symptoms Avoidant Coping	– 0.001	0.007	– 0.010	– 0.130	0.89
	– 0.220	0.129	– 0.193	– 1.707	70.090
Active Coping	0.314	0.133	0.267	2.368	0.020

$R^2 = 0.613$

neither Active Coping nor Avoidant Coping significantly moderated the relationship between community violence exposure and Spring GPA (β = -0.036, p = 0.545; β = -0.037, p = 0.552; respectively).

Discussion

Latinx people comprise the largest ethnic minority group in the USA currently, with Latinx youth at higher risk for exposure to community violence and for negative school outcomes compared to their non-Latinx white peers (Crouch et al., 2000; National Center for Education Statistics, 2007). Exposure to community violence increases risk for poor mental health and academic outcomes (Elsaesser, 2018; Fowler et al., 2009; Gaylord-Harden et al., 2017; Gudiño et al., 2012; Taylor et al., 2018). However, in line with the notion of multifinality, violence exposure does not confer the same risk for all individuals. Given research suggesting that individual differences may serve as protective factors following Exposure to Violence (Mosher & Prelow, 2007), we anticipated that Active Coping strategies may similarly buffer risk. Because exposure to adversity is associated with poor academic outcomes (Janosz et al., 2018) and much of the existing research has focused on understanding the impact of violence exposure and mental health on academic outcomes, in the current study, we considered associations between exposure to community violence, coping styles, and academic achievement, over and above the effects of PTSD.

We hypothesized that increased exposure to community violence is negatively associated with academic achievement, greater use of Active Coping strategies is positively associated with academic achievement, and greater use of Avoidant Coping strategies is negatively associated with academic achievement. In line with our hypothesis and consistent with the literature (Janosz et al., 2018), bivariate results revealed a negative association between community violence exposure and Spring GPA. That is, as Exposure to Violence increased between the study assessments, spring semester grades declined. However, in multivariate analyses, community violence exposure and PTSD symptoms were not significantly associated with longitudinal change in GPA. These findings may reflect high stability of GPA at this point in development and within a short six-month timeframe. While we did identify significant predictors of change in GPA, the main effects of violence exposure may be more insidious than what can be captured in six months. In addition, given the high levels of exposure to community violence, it is possible that earlier Exposure to Violence has already impacted GPA by Time 1, making changes in GPA associated with new Exposure to Violence harder to detect.

Conversely, findings did reveal that youth coping styles were predictive of this short-term longitudinal change in GPA. After accounting for Fall GPA, Active Coping strategies independently predicted Spring GPA, and Avoidant Coping strategies were marginally predictive of Spring GPA. In other words, greater use of Active Coping strategies was associated with better academic performance in the spring, after accounting for GPA at baseline. It should be noted that Active Coping was not significantly correlated with GPA in bivariate analyses. This suggests that other Active Coping has an independent association with GPA only when accounting for the influence of other relevant predictors (i.e., Fall GPA, Child's Gender, Child's Age, Time 1–2 Violence Exposure, Time 2 PTSD Symptoms, Avoidant Coping). In other words, Active Coping by itself is not related to GPA, but may be particularly beneficial when considered within a broader context of community violence exposure, mental health, and coping. These results suggest that youth coping behaviors, specifically Active Coping, are robust predictors of academic performance in youth. Further, voluntary and engaged coping strategies, specifically, may generalize to academic domains. Active Coping strategies might be particularly useful for children managing academic demands, as they allow an individual to engage directly with the stressor at hand (i.e., schoolwork and trauma symptoms). These longitudinal and multivariate analyses highlighted the potential role of malleable youth coping behaviors for supporting academic functioning. Preventive interventions that incorporate Active Coping may therefore confer general protective effects on youth academic outcomes. However, interventions should be careful to consider whether the child is still experiencing trauma, should prevent additional exposure to community violence, and consider adaptive responses based on the relevant difficulties for the student. This is particularly important as some studies find that Active Coping strategies may increase the risk of PTSD symptoms in youth experiencing high levels of community violence. As such, Active Coping may serve as an important universal strategy for supporting student academic success, but additional and personalized individual and/or systemic intervention is likely necessary for youth with the highest levels of community violence exposure or symptoms of traumatic stress.

Of note, Fall GPA was the strongest predictor of Spring GPA; that is, academic performance in the spring was highly associated with academic performance in the fall. This is not surprising given the six-month interval between assessments in the current study. However, it does suggest that the main effect of Active Coping is evident even under this more stringent test predicting longitudinal change in GPA. Moreover, age was a negative predictor of Spring GPA, after accounting for Fall GPA, such that as age increased Spring GPA decreased. Taken together, these results emphasize the importance of early intervention and prevention efforts. Not only do they suggest that academic performance is highly stable over this relatively

short time, but also that increasing age is associated with declines in GPA.

Results also demonstrated an association between gender and coping, such that girls used active and Avoidant Coping strategies to a greater extent than their male peers. These findings are consistent with previous studies that demonstrate that girls utilize coping strategies more readily compared to boys (Gray, 2003; Hampel & Petermann, 2005; Morano, 2010). Finally, neither active nor Avoidant Coping strategies moderated the relationship between community violence and Spring GPA. This finding may be explained by a natural decline in GPA with age (i.e., adolescents grades decline naturally over time), which could impact the ability to detect any moderating effects of coping.

The current study contributes to our understanding of the developmental pathways related to Exposure to Violence by examining predictors of academic achievement and the moderating effects of coping strategies. These findings point to the potential role of Active Coping strategies, above and beyond the influence of exposure to community violence and PTSD symptomology. Moreover, they highlight the importance of early intervention following exposure to community violence, and also increased support for students from low-income, marginalized communities.

While these findings contribute to the coping and violence exposure literature, there are certain limitations that should be noted. Firstly, the current sample was recruited from Los Angeles County which has a rich Latinx community. While this may confer certain methodological advantages, we may be unable to generalize our findings to all Latinx youth located in other areas of the USA where Latinx communities are smaller. A second limitation is the restricted age range of the current sample (i.e., 11–15-year olds). Therefore, these findings may not apply to children in other age groups. Future research should be expanded to rural communities, in addition to urban communities, and to elementary and high school students. In addition, although the longitudinal nature of these data is an advantage, the relatively short timeframe may have obscured important associations that would have been evident over a longer timeframe. For example, the short timeframe may have impaired our ability to detect nuanced moderators, like coping. A longer timeframe may be necessary to detect such influences. Future research should also explore trauma intensity, proximity to trauma, and trauma subtypes (i.e., different forms of community violence) relative to academic achievement, in addition to frequency, and how the current findings compare to youth from other racial and ethnic groups. Lastly, given our findings that support gender differences in coping strategies, future research should explore additional effects of gender.

The current study contributes to our understanding of the developmental pathways related to Exposure to Violence by examining predictors of academic achievement and the moderating effects of coping strategies. These findings point to the association between adaptive coping strategies and academic achievement, above and beyond the influence of exposure to community violence and PTSD symptomology. Moreover, they highlight the importance of understanding prevention and early intervention following exposure to community violence. As suggested in our results, despite the complex pathways linking exposure to community violence and PTSD symptoms to academic achievement in youth, a general focus on bolstering youth coping skills may benefit the academic achievement of a wide range of students. Such a broad focus on enhancing general individual skills supporting coping would complement additional efforts directly targeting community-level risk factors (i.e., community violence) and more intensive intervention for student mental health needs. This more comprehensive approach to supporting student success by targeting community-level and individual-level risk and protective factors may provide a more promising approach for supporting the academic success of students from marginalized communities.

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Declarations

Conflicts of interest None.

Ethics approval The current study received approval from the University of California, Los Angeles, IRB. The use of secondary data for this study was approved by the University of Kansas Institutional Review Board (IRB).

Consent to participate Caregivers and children provided consent for their participation, and signed consent for the child's participation was obtained from the person who had the legal authority to do so. Children also provided assent.

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