In Response to Community Violence: Coping Strategies and Involuntary Stress Responses Among Latino Adolescents

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Among poor, urban adolescents, high rates of community violence are a pressing public health concern. This study relies on a contextual framework of stress and coping to investigate how coping strategies and involuntary stress responses may both mediate and moderate the relation between exposure to community violence and psychological well-being. Our sample consists of 223 ninth grade Latino adolescents from poor, urban families. In response to community violence, these adolescents reported using an array of coping strategies as well as experiencing a number of involuntary stress responses; the most frequent coping responses were turning to religion and seeking social support. Hierarchical regression analyses demonstrated that involuntary stress responses mediated the relations between both witnessing or being victimized by violence and poorer psychological functioning, while coping strategies moderated these relations. These findings suggest that the negative psychological effects of exposure to community violence may, in part, be explained by involuntary stress responses, while religious-based coping may serve as a protective factor.

Keywords: adolescence, community violence, coping, stress, Latino

Adolescents residing in impoverished high-risk neighborhoods face unique and remarkable stressors, paramount among which is exposure to community violence (Tolan, Gorman-Smith, Henry, Chung, & Hunt, 2002). As documented by many accounts, lifetime rates of violence exposure among low-income urban youth are remarkably high with approximately 20 to 50 percent of adolescents reporting direct victimization (Singer, Anglin, Song, & Lunghofer, 1995; Stein, Jaycox, Kataoka, Rhodes, & Vestal, 2003) and between 20 to 90 percent of adolescents reporting witnessing violence at least once during their lifetime (Buka, Stichick, Bird-thistle, & Earls, 2001; Richters & Martinez, 1993). As such, community violence remains a significant and pressing public health concern.

For all youth, exposure to community violence is related to numerous negative psychological sequelae including increased levels of hopelessness, depressive symptoms, posttraumatic stress disorder (PTSD) symptoms, and internalizing symptoms (Ceballo, Ramirez, Hearn, & Maltese, 2003; Cooley-Quille, Boyd, Frantz, & Walsh, 2001; Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009). Despite a great deal of documentation regarding the consequences of community violence exposure, few studies have explored how adolescents cope with and respond to violent experiences. Additionally, much of the community violence literature has focused on African American populations (Fowler et al., 2009). However, as the fastest growing racial/ethnic minority group in the United States, Latinos are more likely than their White, non-Hispanic counterparts to live in poverty and are, therefore, at elevated risk for experiencing community violence. Consequently, it is imperative to better understand the processes by which Latino youth cope with exposure to community violence.

With a focus on poor Latino adolescents, our study contributes to the literature by investigating coping strategies and involuntary stress responses as both mediators and moderators of the relation between exposure to violence and psychological well-being.

Coping Strategies and Involuntary Stress Responses

Reactions to violence exposure can be categorized into two subtypes: coping strategies and involuntary stress responses. Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth (2001) define coping as “conscious volitional efforts to regulate emotion, cognition, behavior, physiology, and the environment in response to stressful events or circumstances” (p. 89). Traditionally, dimensions of coping have been categorized in terms of approach versus avoidant, control versus disengagement, and problem- versus emotion-focused coping strategies (Gonzales, Tein, Sandler, & Friedman, 2001; Lazarus & Folkman, 1984; Wadsworth, Raviv, Compas, & Connor-Smith, 2005). The approach and control styles of coping consist of strategies which actively confront problems (Gonzales et al., 2001) and focus efforts on finding solutions or changing the external situation (Lazarus & Folkman, 1984). Alternatively, avoidant or disengagement styles of coping entail efforts to avoid the problem situation and are often associated with emotion-focused coping strategies involving disengagement from the stressor or one’s emotions (e.g., denial) (Lazarus & Folkman, 1984). In an extensive review of the literature on coping strategies, Compas and colleagues (2001) reported that problem-focused coping was consistently linked to better psychological adjustment in samples of children and adolescents. In contrast, emotion-focused coping strategies were associated with poorer adjustment. Notably,
both of these conceptualizations of coping have been criticized as presenting overly broad and simplistic categorizations. Further, researchers have highlighted the need to distinguish coping strategies as a whole from involuntary or automatic responses to stress (Compas et al., 2001; Connor-Smith, Compas, Wadsworth, Thomson, & Saltzman, 2000).

Involuntary responses to stress refer to responses that are not under one’s conscious control; these responses may consist of physiologically based reactivity to stress that is innate or automatic in nature (Wadsworth et al., 2004). Indeed, initial responses to stress may or may not be within a person’s conscious awareness or under an individual’s control (Connor-Smith et al., 2000). Such involuntary responses may manifest as a cathartic release of emotions (e.g., uncontrollable crying), cognitions (e.g., involuntary intrusive thoughts), or emotional numbing. Some evidence indicates that higher levels of involuntary stress responses are associated with greater internalizing and externalizing symptoms among adolescents (Wadsworth et al., 2004; Wadsworth et al., 2005). While some researchers posit that the term coping should refer to all responses to stress regardless of their voluntary or involuntary nature, others argue for conceptualizing active or voluntary coping strategies and involuntary stress responses as distinct processes. Specifically, Compas and colleagues (2001) argue that coping strategies and involuntary stress responses are subjectively experienced by individuals as qualitatively different. Thus, for our purposes, we distinguish between coping strategies and involuntary stress responses.

According to ecological models of child development (Bronfenbrenner, 1986), interactions between individuals and their environment can influence developmental pathways and outcomes among children through complex mechanisms. Given the often severe and random nature of neighborhood violence, coping strategies that work well in the face of less threatening experiences may not be as effective in response to urban violence. Likewise the severity and traumatic nature of community violence may elicit strong involuntary stress responses to trauma as opposed to coping strategies that might be used to respond to other, less severe forms of stress. While this study does not compare the relative effectiveness of different coping strategies in the face of different types of environmental threats, an important contribution of the current study is the examination of both coping strategies and involuntary stress responses.

Mediation Versus Moderation

Investigations of involuntary stress responses as mediators in the association between community violence and psychological symptoms can identify the mechanisms by which violence exposure affects psychological functioning (Holmbeck, 1997). Wadsworth and colleagues (2004) found that involuntary stress responses were associated with higher levels of anxiety, suggesting that such responses may be an index of stress reactivity and a mechanism by which psychological symptoms manifest. In another study, Wadsworth and colleagues (2005) found that involuntary stress responses mediated the relation between economic strain and psychological symptoms among adolescents. In light of these findings, the present study examines involuntary stress responses as mediators of the relation between exposure to community violence and psychological well-being in order to better understand the role of involuntary stress responses in the face of violence exposure and their association with adolescent well-being. Involuntary stress responses may be unavoidable reactions to incidents of traumatic violence, and to the best of our knowledge, this is one of the first studies to examine involuntary stress responses in relation to community violence exposure.

A handful of recent studies have found evidence that coping strategies may moderate or influence the strength of the relation between community violence and psychological well-being (Margolin & Gordis, 2004; Rosario, Salzinger, Feldman, & Ng-Mak, 2008). For example, Rosario and colleagues (2008) found that the positive association between exposure to violence and internalizing symptoms was strongest for those with greater use of defensive and confrontational coping. On the other hand, Margolin and Gordis (2004) found that social support may buffer against the negative effects of violence exposure, suggesting that some forms of coping may have a protective effect. Findings from Hammack, Richards, Luo, Edlynn, & Roy (2004) and Scarpa, Haden, and Hurley (2006), however, suggest that social support is protective only at lower levels of violence exposure and more so for witnessing violence as compared to being victimized by violence. Overall, these studies indicate that further exploration of the moderating role of coping strategies in response to violence exposure is warranted. Investigating the moderating role of involuntary stress responses may also yield important information about the association between violence exposure and psychological well-being. Therefore, in the present study, both coping strategies and involuntary stress responses will be examined as moderators.

The Current Study

The present study explores the coping strategies and involuntary stress responses of Latino adolescents faced with community violence in poor, inner-city neighborhoods. While we use the term Latino, we acknowledge that Latinos can identify with any race and constitute a rather heterogeneous group. With the category Latino, we are specifically referring to people who trace their ethnic heritage to Central and South America, Caribbean countries, or Mexico. Among Latinos, coping strategies may be influenced by specific Latino cultural values, such as familismo (defined as a strong sense of commitment and loyalty to one’s family) and religiosity (Halgunseth, Ispa, & Rudy, 2006). For instance, some researchers have ascribed the use of denial among Latinos to religious and cultural values (Njoku, Jason, & Torres-Harding, 2005). Based on the importance of familismo and religiosity in many Latino families, we chose to examine three coping strategies: religious-based, emotional support seeking, and denial.

Similar to urban African American adolescents, we expect that rates of exposure to violence will be quite high among Latino adolescents, and that exposure to violence will be significantly related to poorer psychological functioning, as indicated by greater symptoms of depression and PTSD. Given research indicating that males are more likely to be involved with street culture activities, be exposed to community violence, and be victims of violence (Ceballo, Dahl, Aretakis, & Ramirez, 2001; Cooley-Quille et al., 2001; Laub, 1997), we further anticipate that male adolescents will report higher rates of exposure to violence than females in our sample.
The current study investigates involuntary stress responses as potential mediators (see Figure 1) and moderators (see Figure 2) of the relation between community violence exposure and psychological well-being and also examines coping strategies as moderators of that relation (see Figure 2). In response to the chronic strain of economic hardship, Wadsworth and colleagues (2005) found that acceptance of an uncontrollable situation, such as poverty, and emotional support seeking were optimal responses for impoverished, rural adolescents. Accordingly, we hypothesize that in response to random and uncontrollable urban violence, adolescents will most frequently rely upon religious coping (seeking spiritual meaning in challenges) and coping by emotional support seeking. We further expect that religious coping and emotional support coping will have a protective effect and moderate the relation between exposure to violence and psychological functioning. In contrast, we expect that the use of denial coping and involuntary stress responses will exacerbate the negative association between violence exposure and psychological well-being. The latter expectation is in accord with several findings indicating that disengagement coping (e.g., denial) as well as cognitive and behavioral avoidance are associated with poorer adjustment among youth (Compas et al., 2001; Santiago & Wadsworth, 2008). Additionally, we hypothesize that higher levels of violence exposure will be associated with greater involuntary stress responses. Further, and in keeping with the literature (Wadsworth et al., 2005), we predict that involuntary stress responses will mediate and thereby partially explain the negative relation between violence exposure and psychological well-being among impoverished Latino youth.

Method

Participants

The sample consisted of 223 ninth grade Latino adolescents who attended one of three schools: a parochial high school and two public high schools. All of the schools were located in economically disadvantaged, high-risk neighborhoods in two Northeastern cities. The Latino populations in these cities consist of recent immigrants, families that have lived in the area for several generations, as well as a recent influx of Latinos moving from neighboring states like New York and New Jersey (Garcia Coll & Marks, 2009). The first city is home to 61,304 Latino individuals who comprise 36% of the city’s total population (U.S. Census Bureau, 2007). The majority of these individuals are Dominican and Puerto Rican, with more than 50% of the Dominican families living below the poverty line (Garcia Coll & Marks, 2009; U.S. Census Bureau, 2007). The second city, smaller in size, is also home to a vibrant Latino community. Roughly 48% of the city’s 18,928 inhabitants identify as Latino, the majority of whom are Dominican or Puerto Rican (U.S. Census Bureau, 2000). Twenty-six percent of the families living in this city fall below the poverty threshold (U.S. Census Bureau, 2000).

The parochial high school and one of the public high schools were located in the first city. The parochial high school requires an application process for admission. Of its students, 85% qualified for free or reduced lunch and 91% of the students identified as Latino. The public high school in the first city was extremely large and was restructured into six smaller school programs with varying themes, all located on one campus. Students included in the current study were drawn from two of these randomly selected programs: the Health & Human Services (HHS) program and the Math, Science, & Technology (MST) program. In the HHS program, 85% of the students qualified for free or reduced lunch and 91% identified as Latino. In the MST program, 85% of the students qualified for free or reduced lunch and 85% identified as Latino. While the national violent crime rate for 2008 was 455 violent crimes per 100,000 people (U. S. Department of Justice, 2006), the rate for this first city was 653 per 100,000 people.

The other public high school was located in the second city. Like the previous two schools, a majority of the students qualified for free or reduced lunch, and 71% of the student body identified as Latino. The violent crime rate reported in this city was 584 per 100,000 people. Altogether, due to the nature of these schools and cities, our participating students lived in 28 different census tracts, providing a geographically diverse sample.

Participants had a mean age of 14.5 years ($SD = .69$), and the sample was 61% female. All participants identified themselves as Latino. Dominicans made up the largest ethnic group in the current sample with 135 students identifying as Dominican (60.5%). Other ethnicities included Colombian, Mexican, Puerto Rican, and Salvadoran. A majority of the students (76.2%) were born in the United States; however, most of their mothers and fathers were not natural-born citizens (79.8% and 77.6% respectively). Most students (62.8%) identified as Catholic and 63.3% reported speaking “only Spanish” or “mostly Spanish/some English” at home.

Procedure

The current investigation is part of a larger study on Latino families living in low-income, urban environments. Recruitment
letters describing the study, along with consent forms, were sent home with all ninth graders at each of the schools. All written materials regarding this study were provided to families in both English and Spanish. All study materials were translated into Spanish and back-translated, and both English and Spanish versions were sent home with students. All students with parental consent completed self-report questionnaires in a classroom, lecture hall, or cafeteria during the school day. Students who completed the questionnaire but were later found not to self-identify as Latino were excluded from the analyses. Adolescents were provided with the option of completing the questionnaire in either English or Spanish. In total, only seven students opted to complete the questionnaire in Spanish. Bilingual research assistants were available to assist these participants. All students completed the first portion of the questionnaire, a written qualitative section, at the same time. Thereafter, students proceeded with the quantitative survey measures at their own pace. Graduate and undergraduate students circulated among the participants, making themselves available to answer questions. The questionnaires took approximately 2 hours to complete, with students taking breaks as needed. As a token of appreciation, students received a $30 gift card to a local movie theater or shopping mall.

**Measures**

**Community violence exposure.** Students’ exposure to violence was measured with the Survey of Exposure to Community Violence (Richters & Martinez, 1993). This scale consisted of 20 items that asked how often certain violent incidents had been experienced in the adolescents’ lifetime, using a 9-point Likert scale ranging from 1 (never) to 9 (almost every day). A personal victimization subscale consisted of 10 items that asked participants how often they had been directly victimized by various acts of community violence. An example question was, “How many times have you yourself been chased by gangs or individuals?” Responses for these items were summed, creating a total personal victimization score for each participant with higher scores reflecting greater victimization by community violence. Cronbach’s alpha for this scale was .80 in our sample. A witnessing violence subscale consisted of 10 items that asked participants how often they have seen or directly witnessed various acts of community violence. An example question was, “How many times have you seen someone else attacked or stabbed with a knife?” Responses for these 10 items were also summed. Cronbach’s alpha for this scale was .84 in our sample. Acceptable internal consistency and test–retest reliability have been found for this scale among urban youth (Selner-O’Hagan, Kindlon, Buka, Raudenbush, & Earls, 1998).

**Coping strategies.** In order to assess coping strategies, we used subscales from the COPE, a multidimensional inventory that assesses different ways in which individuals cope with stressors (Carver, Scheier, & Weintraub, 1989). The coping measure immediately followed the Survey of Exposure to Community Violence in our survey. Adolescents were prompted to first consider how they had just responded to incidences of community violence. Participants were then asked how often they employed different coping strategies in response to violence on a scale from 1 (not at all) to 4 (a lot). Based on pilot data indicating that other subscales had low alphas (less than .70), this study included five of the original 14 COPE subscales (acceptance, denial, religious coping, social support seeking, and venting) (Carver et al., 1989); the remaining COPE subscales were omitted. The COPE has demonstrated adequate validity and reliability (Carver et al., 1989), though it has received limited use among low-income Latino populations.

Because of the limited use of the COPE with low-income, adolescent populations, a principal components factor analysis with Varimax rotation was applied to the adolescents’ data for COPE items. Four factors emerged, three of which were consistent with the original COPE subscales: acceptance, denial, and religious coping (Cronbach’s alphas = .74, .74, and .87, respectively). The fourth factor combined the subscales of venting of emotions and seeking social support for emotional reasons (α = .88). Since there is no theoretical support for combining these subscales and three of the four factors were consistent with the original COPE subscales, we decided to use the original COPE subscales specified by Carver et al. (1989) each consisting of three to four items. This approach guards against anomalies that may be specific to this particular sample and not generalizable to the population at large.

Thus, this study focused on the religious coping, emotional support seeking, and denial subscales of the COPE. All questions used the stem, “When faced with scary or violent neighborhood situations, how often do you . . .” A sample item from the turning to religion subscale (α = .87) was “. . . put my trust in God.” A sample item from the emotional support seeking subscale (α = .84) was “. . . try to get emotional support from friends or relatives.” A sample item from the denial subscale (α = .74) was “. . . refuse to believe that it has happened.”

**Involuntary stress responses.** In order to assess involuntary stress responses, we used portions of the Responses to Stress Questionnaire–Family Conflict Version (RSQ). The RSQ is a multidimensional scale that includes measures of involuntary stress responses (Connor-Smith et al., 2000). The RSQ has been used in previous studies of low-income, adolescent populations (e.g., Santiago & Wadsworth, 2009). In addition, the convergent and discriminant validity of the RSQ has been established using both parent and adolescent self-reports across five samples of various age and SES levels (Connor-Smith et al., 2000).

We modified this questionnaire so as to be applicable in a context of community violence exposure and to make the responses more consistent with the COPE items. These questions were interspersed with questions from the COPE measure, also immediately following the Survey of Exposure to Community Violence. Participants were asked, “When faced with scary or violent neighborhood situations, how often do you . . .”, followed by a series of possible involuntary stress responses; response options ranged from 1 (not at all) to 4 (a lot).

The RSQ includes five subscales that assess involuntary stress responses: rumination, intrusive thoughts, involuntary action, cognitive interference, and inaction (Connor-Smith et al., 2000). Due to the conceptual overlap with depressive symptoms, the RSQ subscales of rumination and intrusive thoughts were not included in our analyses. In all, we used three RSQ subscales (involuntary action, cognitive interference, and inaction), each consisting of two to three items. A sample question from the involuntary action subscale (α = .74) was, “. . . can’t always control what I do or say.” A sample question from the cognitive interference subscale (α = .73) was, “. . . get so upset that I can’t remember what happened or what I did.” A sample item from the inaction subscale (α = .75) was, “. . . just freeze, I can’t do anything.”
Depression. The Children’s Depression Inventory was used to measure children’s feelings of depression (Kovacs, 1985). The CDI assesses symptoms of sadness, loneliness, and self-loathing, and has demonstrated strong test–retest reliability and good validity (Finch, Saylor, Edwards, & McIntosh, 1987; Hodges, Saunders, Kashani, Hamlett, & Thompson, 1990) and has been used in several studies of Latino youth with adequate reliabilities (alphas .82–.87) (e.g., Cardemil, Reivich, Bevers, Seligman, & James, 2007). This widely used, 26-item measure presents groups of three statements, and children are asked to pick the statement that most closely describes how they have been feeling for the past 2 weeks (e.g., “I am sad once in a while,” “I am sad many times,” “I am sad all the time”). One item regarding suicidality was omitted from this measure in order to comply with one school’s wishes. The items were scored from 0 to 2 and reverse coded as needed, in the direction of increasing severity with total summed scores ranging from 0 to 52. The Cronbach’s alpha for our sample was .84.

PTSD. The Child Post-Traumatic Stress Reaction Index (CPTSD-RI) consisted of a 20-item scale patterned after the criteria for PTSD described in the Diagnostic and Statistical Manual of Mental Disorders (DSM–III: American Psychiatric Association, 1980). This measure was adapted by Frederick (1985) to identify the presence and severity of PTSD symptoms in school-age children and adolescents (Pynoos & Nader, 1993). As one of the most widely used measures of PTSD, this index demonstrates good interrater reliability (α = .88) and internal consistency (α = .78–.83) (Nader & Fairbanks, 1994; Nader, Pynoos, Fairbanks, & Frederick, 1990). A sample question was “How often do you think that bad things that happened in the past might happen again?” The frequency of symptoms was rated on a 5-point Likert scale ranging from 0 (none) to 4 (most of the time), and summed to obtain a scale score. The Cronbach’s alpha for our sample was .93, with higher scores indicating the presence of more PTSD symptoms.

In order to ensure that the involuntary stress responses were distinct from PTSD symptoms, item comparisons were made. Any items that overlapped between involuntary stress response scale items and the items measuring PTSD were eliminated. Specifically, 3 of the 19 items from the measure of PTSD were eliminated (“I have thoughts or feelings about something bad that happened in the past that get in the way of remembering things, like what you learned in school,” “I have a hard time paying attention,” and “I have a hard time keeping yourself from doing things that you shouldn’t do, like getting into fights, disobeying, or being less careful”). All analyses used this modified PTSD symptom scale.

Results

As expected, exposure to community violence was particularly high among our sample of low-income, urban Latino adolescents; however, exposure rates did not differ by gender. About a third of the sample had been asked to sell or distribute illegal drugs, and 26% reported having been chased by gangs or individuals. Rates of witnessing violence were even higher than rates of personal victimization. Seventy percent of the sample reported having seen others using or selling illegal drugs, 65% reported that they had witnessed someone being beaten up or mugged, 48% had seen a seriously wounded person after a violent incident, and 22% reported that they had seen someone shot with a gun. Adolescents in our sample reported slightly higher levels of depressive symptoms than have been indicated in other community samples of adolescents (Craighead, Curry, & Ilardi, 1995), but comparable levels to a meta-analysis of studies using the CDI (Twenge & Nolen-Hoeksema, 2002).

Descriptive statistics and all intercorrelations between variables are shown in Table 1. Adolescents reported using many different coping strategies and experiencing an array of involuntary stress responses; the most frequently used coping strategies were turning to religion and emotional support seeking. Significant gender differences emerged such that Latina girls (M = 2.58, SD = .84) were more likely to use religious coping than boys (M = 2.28, SD = .90; t(221) = −2.59, p < .01). Emotional support seeking was also reported more frequently by girls (M = 2.49, SD = .85) than boys (M = 2.09, SD = .73; t(218) = −3.57, p < .000). Additionally, girls and boys differed in levels of depressive symptoms (M = 11.58, SD = 7.34, M = 8.98, SD = 6.92, respectively) and PTSD symptoms (M = 27.80, SD = 13.66, M = 19.35, SD = 13.96, respectively), such that girls’ scores were significantly higher than boys on all measures of psychological distress, t(220) = −2.63, p < .01, t(215) = −4.41, p < .000, respectively.

Mediation Analyses

Hierarchical regression analyses were used to test the mediational model depicted in Figure 1. In order to test whether involuntary stress responses mediated the relation between exposure to violence and well-being, Baron and Kenny’s (1986) widely accepted criteria for mediation were used. As proposed, mediation is substantiated if the following three relations demonstrate significance: 1) the association between predictor (community violence) and outcome (psychological well-being) (Path C); 2) the association between predictor (community violence) and mediator (involuntary stress responses) (Path A); 3) the association between mediator (involuntary stress responses) and outcome (psychological well-being) (Path B), controlling for predictor (community violence) (Path C’). Due to the high correlation between personal victimization and witnessing violence (r = .77, p = .01), separate analyses were run for these two predictors in order to avoid issues of multicollinearity.

In these mediational analyses, we tested three RSQ subscales (involuntary action, cognitive interference, and action) as potential mediators. Each set of regressions was run twice; once with victimization as the predictor and a second time with witnessing violence as a predictor. In addition, we controlled for adolescents’ age, sex, school attended, and immigration status as predictors in the first step of all regression equations. Because school attended was a nominal variable with three separate levels, two dummy coded variables were created. The first dummy coded variable (school 1) represented the parochial school and the second variable (school 2) represented the public high school that was located in a different city. In addition, to correct for Type I error, Bonferroni corrections were calculated in all of the analyses to account for the number of simultaneous hypotheses being tested.

Community violence exposure and psychological well-being. The first set of regressions established a relation between community violence exposure and adolescents’ psychological well-being.
### Table 1: Correlation Matrix

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Note: In the case of correlations between nominal and continuous variables, the values reflect a point biserial correlation. In the case of correlations between nominal variables, the values reflect a phi coefficient. In all other cases, the values reflect a Pearson moment correlation.

### Community Violence and Coping

**In the case of correlations between nominal and continuous variables, the values reflect a point biserial correlation. In the case of correlations between nominal variables, the values reflect a phi coefficient. In all other cases, the values reflect a Pearson moment correlation.**

**Community Violence Exposure and Involuntary Stress Responses.** We next examined the relations between exposure to community violence and involuntary stress responses (Path A). Personal victimization was significantly and positively associated with all three involuntary stress responses: involuntary action ($β = .32$, $p < .001$), cognitive interference ($β = .15$, $p < .05$), and inaction ($β = .15$, $p < .05$). Witnessing violence was significantly and positively related to involuntary action ($β = .25$, $p < .001$) and cognitive interference ($β = .01$, $p < .05$).

**Involuntary Stress Responses as Mediators of the Relation between Community Violence Exposure and Psychological Well-being.** The final set of regressions simultaneously tested the involuntary stress responses that displayed significant A paths in previous analyses as multiple mediators of the relation between exposure to violence (victimization or witnessing) and psychological well-being (Path C' and B). Regressions using personal victimization as a predictor, shown in Table 2, demonstrated that inaction was a significant mediator of the relation between personal victimization and both depressive and PTSD symptoms ($β = .28$, $p < .05$; $β = .33$, $p < .001$; respectively). With inaction as a mediator, the association between victimization and depressive symptoms became insignificant ($β = .41$, $p > .05$), providing evidence for full mediation, while the association between victimization and PTSD symptoms remained significant ($β = .22$, $p < .001$), indicating evidence of partial mediation. Sobel tests confirmed that inaction significantly mediated the association between personal victimization and depression ($Z = 2.80, p < .01$) and PTSD ($Z = 4.39, p = .001$) symptoms. Moreover, inclusion of mediators in these models accounted for a 10% and 24% increase in explained variance for depression and PTSD symptoms respectively.

Regressions using witnessing violence as a predictor, displayed in Table 3, demonstrated that cognitive interference was a significant mediator of the relation between witnessing violence and PTSD ($β = .32, p < .001$) (Path B). Neither cognitive interference nor involuntary action mediated the relation between witnessed violence and depressive symptoms. With cognitive interference as a mediator, the association between witnessing violence and PTSD (Path C') became insignificant ($β = .15, p > .05$) providing evidence for full mediation. Sobel tests confirmed that cognitive interference significantly mediated the association between witnessing violence and PTSD symptoms ($Z = 3.94, p < .001$). Inclusion of mediators in these models accounted for a 25% increase in explained variance in PTSD symptoms.

### Moderation Analyses

For all analyses, two separate regressions were run for each of the dependent variables (depression and PTSD). Adolescents’ age, sex, school attended, and immigration status were entered as controls in the first step. Either personal victimization or witnessing violence and a type of coping strategy or involuntary stress...
response were added in the second step, with the interaction term violence exposure × type of coping strategy or involuntary stress response added in the third step. Bonferroni corrections were used to account for Type I error in all analyses.

**Religious coping as a moderator of violence exposure and well-being.** The first set of regressions explored the role of religious coping as a moderator of the relation between violence exposure and adolescents’ psychological well-being. Results indicated that religious coping was a significant moderator of the relation between personal victimization and PTSD symptoms (β = −.21, p < .05, β = −.20, p < .05, respectively). Denial coping also moderated the relation between witnessing violence and PTSD symptoms (β = −.17, p < .05), but did not moderate the relation between personal victimization and PTSD symptoms.

Simple slopes analyses indicated that at low levels of denial, personal victimization is significantly associated with more symptoms of depression (β = −.18, p = .05), but not PTSD symptoms. Simple slopes analyses (Holmbeck, 1997) indicated that at low levels of religious coping, personal victimization is significantly associated with more symptoms of depression (t = 4.51, p < .001; see Figure 3). At high levels of religious coping, the association between personal victimization and depression is no longer significant (t = 0.37, ns). Finally, religious coping did not moderate the association between witnessing violence and psychological well-being.

**Emotional support seeking as a moderator of violence exposure and well-being.** The second set of regressions explored the role of emotional support seeking as a moderator of the relation between both personal victimization or witnessing violence and adolescent well-being. Results of these regressions showed that emotional support seeking was not a significant moderator of the relations between either personal victimization or witnessing violence and depression or PTSD symptoms.

**Denial as a moderator of violence exposure and well-being.** The third set of regressions examined the role of denial as a moderator of the relation between violence exposure and adolescent well-being. Results of these regressions showed that denial coping was a significant moderator of the relation between both personal victimization and witnessing violence and depressive symptoms (β = −.21, p < .05, β = −.20, p < .05, respectively). Denial coping also moderated the relation between witnessing violence and PTSD symptoms (β = −.17, p < .05), but did not moderate the relation between personal victimization and PTSD symptoms.

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<table>
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<th>Predictor variables</th>
<th>Depression (N = 220)</th>
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*Note.* Bold = indicates all significant values.

| a | 0 = male; 1 = female. | b | School 1 = parochial school; school 2 = public school in different city. | c | 0 = foreign born; 1 = U.S. born. |

*p < .05. **p < .01. ***p < .001.
violence is significantly related with more symptoms of PTSD ($t = 4.38, p < .001$; see Figure 6). At high levels of denial coping, the relation between witnessing violence and PTSD symptoms is no longer significant ($t = 1.23, ns$).

**Involuntary stress responses as moderators of violence exposure and well-being.** The last set of regressions explored the role of involuntary stress responses (involuntary action, cognitive interference, inaction) as moderators of the relation between violence exposure (victimization or witnessing) and adolescents' psychological well-being. Results indicated that none of the involuntary stress responses moderated the relation between violence exposure (victimization or witnessing) and psychological distress (depression and PTSD).

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**Figure 3.** Interaction effect of personal victimization $\times$ religious coping on depression.

**Figure 4.** Interaction effect of personal victimization $\times$ denial coping on depression.
work in concert with turning to religion. Similarly, the acceptance of one’s fate or lot in life as God’s will, may easily religiosity and cultural values identified as important in Latino families, such as emotional support seeking may naturally correspond with several Tolan et al., 2002). Coping strategies of turning to religion and emotional support seeking as frequent coping strategies. As found in sized, Latino adolescents relied upon turning to religion and emotional support seeking as a coping strategy among close family networks. Moreover, reliance on these strategies is understandable given the lack of control adolescents have over, what is often, unpredictable neighborhood violence.

In keeping with our hypotheses, involuntary stress responses, which included cognitive interference and involuntary actions, mediated the relations between personal victimization and psychological well-being as well as between witnessing violence and psychological well-being. This is an important finding as few studies have examined the role of involuntary stress responses in the context of adolescents’ exposure to community violence. Wadsworth and colleagues (2005) reported a similar meditational role for stress responses to financial stress during adolescence. In their study, involuntary stress responses, such as intrusive thoughts, were associated with internalizing and externalizing symptoms (Wadsworth et al., 2005).

Our findings suggest that the detrimental effects of both victimization and witnessing violence function, in part, through the mechanism of involuntary stress responses. Involuntary responses may represent individuals’ first set of responses to threatening situations. As such, identification and monitoring of involuntary stress responses may emerge as an important component of intervention efforts. Normalizing the experience of involuntary stress responses following violence exposure may help youth to process the psychological aftermath of violence. However, these findings must be interpreted with caution given the exploratory nature of our study and the dearth of coping research with Latino adolescents. We cannot assume that adolescents who are chronically exposed to community violence inevitably exhibit involuntary stress responses and suffer poorer psychological outcomes.

Indeed, results from our moderation analyses indicate that adolescents do employ coping strategies that may serve to mitigate the association between exposure to community violence and psychological well-being. In keeping with our hypotheses and consistent with previous findings (Brady, Gorman-Smith, Henry, & Tolan, 2008; Rosario et al., 2008; Scarpa et al., 2006), coping strategies were found to act as moderators of the relation between exposure to violence and psychological functioning. In contrast, none of the involuntary stress responses moderated the relation between exposure to community violence and psychological well-being. This is an important finding as few studies have examined the role of involuntary stress responses in the context of adolescents’ exposure to community violence.

Overall, adolescents reported using a wide array of coping strategies and experiencing a variety of involuntary stress responses following exposure to community violence. As hypothesized, Latino adolescents relied upon turning to religion and emotional support seeking as frequent coping strategies. As found in other studies, Latina adolescents were more likely to rely on emotional support seeking than boys (Frydenberg & Lewis, 1993; Tolan et al., 2002). Coping strategies of turning to religion and emotional support seeking may naturally correspond with several cultural values identified as important in Latino families, such as religiosity and fatalismo (Garcia Coll & Garcia, 1995). Fatalismo, the acceptance of one’s fate or lot in life as God’s will, may easily work in concert with turning to religion. Similarly, familismo, an emphasis on maintaining strong family ties, may bolster support-seeking as a coping strategy among close family networks. Moreover, reliance on these strategies is understandable given the lack of control adolescents have over, what is often, unpredictable neighborhood violence.

Discussion

It is well documented that many low-income, urban adolescents are exposed to remarkably high rates of community violence (Dempsey, 2002). Such exposure to violence presents serious consequences for adolescent development, as exposure to community violence is associated with an array of psychological and behavioral problems (Fowler et al., 2009). Yet, relatively few studies have investigated how adolescents respond to and cope with high levels of violence. The current study examines adolescents’ coping strategies and involuntary stress responses to community violence and the potential role of these strategies and stress responses in both mediating and moderating the relation between violence exposure and well-being.

As expected, Latino youth in our study were exposed to exceedingly high rates of urban violence, as both victims and witnesses. Our results are in keeping with prior research on lifetime rates of exposure to community violence among urban youth (Buka et al., 2001; Stein et al., 2003). The prevalence of witnessing violence on a national level is estimated to be approximately 40% for representative samples of adolescents (Zinzow et al., 2009).

In contrast to previous studies (Ceballo et al., 2001), male and female adolescents reported equivalent rates of exposure, perhaps indicating that gender differences in exposure are less pronounced among older children. Consistent with numerous findings (Cooley-Quille et al., 2001; Schwab-Stone et al., 1995), exposure to community violence was related to poorer psychological functioning, as evidenced by increased depressive and PTSD symptoms.

Overall, adolescents reported using a wide array of coping strategies and experiencing a variety of involuntary stress responses following exposure to community violence. As hypothesized, Latino adolescents relied upon turning to religion and emotional support seeking as frequent coping strategies. As found in other studies, Latina adolescents were more likely to rely on emotional support seeking than boys (Frydenberg & Lewis, 1993; Tolan et al., 2002). Coping strategies of turning to religion and emotional support seeking may naturally correspond with several cultural values identified as important in Latino families, such as religiosity and fatalismo (Garcia Coll & Garcia, 1995). Fatalismo, the acceptance of one’s fate or lot in life as God’s will, may easily work in concert with turning to religion. Similarly, familismo, an emphasis on maintaining strong family ties, may bolster support-seeking as a coping strategy among close family networks. Moreover, reliance on these strategies is understandable given the lack of control adolescents have over, what is often, unpredictable neighborhood violence.

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Our findings suggest that the detrimental effects of both victimization and witnessing violence function, in part, through the mechanism of involuntary stress responses. Involuntary responses may represent individuals’ first set of responses to threatening situations. As such, identification and monitoring of involuntary stress responses may emerge as an important component of intervention efforts. Normalizing the experience of involuntary stress responses following violence exposure may help youth to process the psychological aftermath of violence. However, these findings must be interpreted with caution given the exploratory nature of our study and the dearth of coping research with Latino adolescents. We cannot assume that adolescents who are chronically exposed to community violence inevitably exhibit involuntary stress responses and suffer poorer psychological outcomes.

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tion and depressive symptoms. Denial coping moderated the relations between both personal victimization or witnessing violence and depressive symptoms in addition to the association between witnessing violence and PTSD symptoms.

High levels of religious coping were associated with relatively low levels of depression at both high and low levels of personal victimization. At low levels of victimization, lower levels of religious coping were associated with similarly low levels of depressive symptoms. However, at high levels of personal victimization, low levels of religious coping were associated with higher levels of depressive symptoms. In the face of greater personal victimization, low levels of religious coping exacerbated the risk for depressive symptoms. Thus, religious coping functioned as a protective factor for depressive symptoms, particularly for those adolescents facing high levels of personal victimization. When providing psychological support and services to adolescents, our results underscore the importance of attending to religious beliefs and practices as potential sources of strength and resiliency.

As with previous studies (Santiago & Wadsworth, 2009), denial coping was consistently associated with higher levels of psychological difficulty in our sample. At high levels of denial coping, however, high levels of personal victimization and witnessing violence were not associated with higher levels of depressive symptoms. At low levels of denial coping, low levels of personal victimization and witnessing violence were associated with lower levels of depressive symptoms, whereas high levels of personal victimization and witnessing violence were associated with greater depressive symptoms. In other words, low levels of denial coping were not protective for depressive symptoms at either high levels of personal victimization or witnessing violence. Low levels of denial may thus worsen depressive symptoms as exposure to community violence increases. With respect to PTSD as an outcome, the use of denial coping in response to witnessing violence yielded similar findings. However, in contrast to findings for depressive symptoms, while low levels of denial coping were less protective for PTSD symptoms at high levels of witnessing violence, lower levels of denial coping were more protective than high levels of denial coping overall. These results underscore the complicated nature of clinical work with trauma survivors and caution clinicians against assuming that certain strategies of coping are necessarily better or worse than others in all contexts.

In contrast to the findings reported by Rosario and colleagues (2008), emotional support seeking in our study did not serve as a moderator of the relation between violence exposure and psychological functioning. Compared to children in middle childhood, adolescents, like those in our sample, may receive less parental support to help mitigate the effects of neighborhood violence. It is also possible that with high rates of exposure to violence, social support among adolescents may not effectively protect against violence exposure (Hammack et al., 2004). This would be consistent with Ceballo and McLoyd’s (2002) findings that the benefits of social support for single mothers’ parenting were weakened or diluted in more stressful neighborhoods.

As with all research efforts, several limitations should be noted in the present work. First, the cross-sectional nature of this data precludes any assumption of causality between variables. Future work should test these associations prospectively. Second, reliance on self-report survey measures may inflate some of these associations because of shared-methods variance. Future studies would greatly benefit from multiinformant, multimethod data to address this limitation. Third, our sample may be biased due to the inclusion of students attending a parochial school where attendance required an application process. These families may be dealing with adverse neighborhood conditions more effectively than other families in the same neighborhood. Finally, adolescents were asked how they responded to violent incidents as they recalled past experiences, relying upon retrospective recall of past events. Although in this study we were not able to focus on one Latino ethnicity, future research should focus on the generalizability of results to specific subethnic groups.

For many adolescents from impoverished, urban families, exposure to community violence is an exceedingly frequent, albeit even chronic, occurrence with severe psychological repercussions. It is thus imperative that research efforts continue to focus on identifying the processes through which community violence exposure affects adolescents’ psychological well-being. The current study makes several contributions to the literature by focusing on a highly vulnerable, yet understudied group of Latino adolescents, and by examining coping strategies and involuntary stress responses as mediators and moderators of the association between violence exposure and psychological symptoms. As one of the first studies to specifically examine involuntary stress responses to community violence, our results suggest that the psychological impact of exposure to community violence may be due, in part, to the involuntary responses that follow such experiences. Further, our study indicates that relying upon religious coping after incidents of personal victimization may buffer adolescents from depressive affect.

References


EPSTEIN-NGO, MAURIZI, BREGMAN, AND CEBALLO


