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Exposure to Violence as a Moderator of the Relation between Coping Strategies and Outcomes in Low Income Urban Youth

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Exposure to Violence as a Moderator of the Relation between Coping Strategies
and Outcomes in Low Income Urban Youth

A Thesis

Presented in

Partial Fulfillment of the
Requirements for the Degree of
Master of Arts

By

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Biography

Alexandra Barnett was born in New York, NY, January 23, 1987. She graduated from Hastings High School in 2005, and received her Bachelor of Arts degree in Psychology from Brandeis University in 2009. In the same year she began researching at the NYU Child Study Center. She is currently a doctoral candidate in Clinical Child Psychology at DePaul University.

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INTRODUCTION

Stressors increase during adolescence and are associated with negative outcomes such as internalizing and externalizing symptoms. Some youth are at an especially high risk for exposure to stressors and the associated negative consequences. In particular, low income urban youth experience disproportionately high rates of stressors and their negative effects (Attar, Guerra, Tolan, 1994; Fowler, Tompsett, Braciszewski, Jacques-tiura, & Baltes, 2009; Grant et al., 2004b; Henrich, Schwab-Stone, Fanti, Jones, & Ruchkin, 2004). Exposure to violence is one uncontrollable stressor they experience at particularly high rates and a large body of research has shown it to have an exceptionally strong association with increased internalizing and externalizing symptoms (Causey & Dubow 1992; Dempsey 2002; Duncan, 1996; Grant et al., 2004b; Hassan, Mallozzi, Dhingra & Haden, 2011; Henrich et al., 2004; Landis et al., 2007; Parnes, 2008; Pina, et al., 2008; Rasmussen, Aber, & Bhana, 2004; Rosario, Salzinger, Feldman, & Ng-Mak, 2003; Scarpa & Haden, 2006).

Fortunately, effective coping may mitigate the negative effects of stress (Gaylord-Harden, Taylor, Campbell, Kesselring, & Grant, 2009; Gonzales, Tein, Sandler, & Friedman, 2001). Coping has been defined as “conscious, volitional efforts to regulate emotion, cognition, behavior, physiology, and the environment in response to stressful events or circumstances” (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001, p. 89). The ability to cope independently typically develops during adolescence, making this potentially the most important age group for coping interventions to target (Tolan & Grant,

2009). It remains unclear however, what coping strategies should be the focus of interventions for low income urban youth.

Effective Coping Strategies

An unexplained paradox currently exists in the coping literature making it particularly difficult to decipher what coping strategies may be protective for youth experiencing high rates of stressors. *Active coping* refers to when an individual deliberately influences the factors in his or her environment (Sandler, Tein, & West, 1994), whereas *avoidant coping* refers to staying away, psychologically or physically from a stressor (Ayers, Sandler, West, & Roosa, 1996; Boxer et al., 2008). Research conducted with middle class youth generally suggests *active coping* approaches are effective and *avoidant coping* strategies ineffective (Ayers, Sandler, West & Roosa, 1996; Causey & Dubow, 1992; Compas et al., 2001; Herman-Stahl, Stemmler & Petersen, 1995; Lengua & Sandler, 1996; Sandler, Tein, & West, 1994). However, studies conducted with low income urban youth have sometimes reported the opposite pattern for both types of coping strategies (Compas et al., 2001; Dempsey, Overstreet & Moely, 2000; Gonzalez et al., 2001; Greenberg, Weissberg, O'Brien, Zins & Fredericks, 2003; Rosario, et al., 2003; Tolan & Grant, 2009; Weisz, Sandler, Durlak & Anton, 2005). In one example, Rosario and colleagues (2003) found active forms of coping, particularly those that are confrontational, to be associated with delinquency in low income urban youth (Rosario et al., 2003). In another example, low income urban youth, exposed to high rates of stress, were found to protect themselves from externalizing symptoms when they utilized *avoidant*

coping (Grant et al., 2000). Why a different pattern of effective coping may exist for low income urban youth remains unexplained.

Additional research suggests for low-income urban youth, *avoidant coping* may be better conceptualized if it is further delineated in terms of *behavioral avoidance* and *cognitive avoidance* (Gaylord-Harden, Cunningham, Holmbeck & Grant, 2010). *Behavioral avoidance* refers to physically doing something to leave a dangerous situation, and *cognitive avoidance* refers to psychologically trying to avoid thinking about a stressor (Dempsey et al., 2000). To date, there has not yet been a study that has distinguished between *behavioral avoidant* and *cognitive avoidant* coping in assessing resultant outcomes (Gaylord-Harden et al., 2010). However, one study has distinguished between *behavioral avoidant* and *cognitive distraction coping* for low income urban youth in assessing associated psychopathological symptoms (Dempsey et al., 2000). Dempsey and colleagues (2000) found at high levels of violence exposure, *behavioral avoidance* served as a protective factor against Post-Traumatic Stress Disorder (PTSD) arousal symptoms while *cognitive distraction* served as a risk factor for the same outcomes (Dempsey et al., 2000).

The level of an environmental stressor might help to explain patterns of coping for low income urban youth. Researchers have theorized coping strategy effectiveness may be better understood within a contextual framework (Tolan & Grant, 2009). More specifically, it may be that level of exposure to violence is one contextual factor that is particularly salient for low-income urban youth when understanding coping patterns (Dempsey et al., 2000). This is one stressor

underserved children experience at particularly high rates, and it has a particularly strong association with increased internalizing and externalizing symptoms (Causey & Dubow 1992; Dempsey 2002; Duncan, 1996; Grant et al., 2004b; Hassan, et al., 2011; Henrich et al., 2004; Landis et al., 2007; Parnes, 2008, Pina, et al., 2008; Rasmussen, et al., 2004; Rosario et al., 2003; Scarpa & Haden, 2006). One possible explanation for the current paradox in the coping literature is that exposure to violence is one stressor in particular that may be less amenable to *active coping* and more amenable to *behavioral avoidance*. In other words, the pattern of findings in the literature seems to suggest coping may not only serve as a moderator of the association between stressors and negative outcomes but, uncontrollable stressors such as exposure to violence, may moderate the association between various types of coping and various outcomes.

Exposure to Violence as a Moderator

To date, research has not yet examined exposure to violence as a moderator of the association between *active*, *behavioral avoidant* and *cognitive avoidant coping* and externalizing and internalizing symptoms for a diverse sample of low income youth (Dempsey et al., 2000; Gaylord-Harden et al., 2010; Henrich et al., 2004; Tolan & Grant, 2009). However research has suggested that coping strategies showing effectiveness with normative stress exposure may be less effective or even maladaptive in the context of severe and chronic stress (Grant, 2005). Three of Luthar, Cicchetti and Becker's (2000) theoretical frameworks provide models for the ways in which *active*, *behavioral avoidant coping* and *cognitive avoidant coping* strategies might work at high and low levels

of violence. More specifically, Luthar and colleagues' (2000) protective-reactive theory suggests coping strategies showing effectiveness under normative conditions may be less effective or even maladaptive in the context of severe and chronic stress. This model may illustrate the way in which *active coping* is associated with outcomes for low income urban youth depending upon the level of violence in their environment. Similarly, Luthar and colleagues' (2000) protective-enhancing model may illustrate the way in which *behavioral avoidant coping* affects urban youth depending upon the level of violence in their environment. This model suggests an individual will do better when practicing a given strategy at a higher level of risk. Their vulnerable-reactive model suggests an attribute will be associated with disadvantage particularly at higher levels of stress (Luthar et al., 2000). This model may serve to illustrate how *cognitive avoidant coping* may affect individuals interacting with stressful environments. Luthar and colleagues' (2000) three models have yet to be used to test the association between coping and outcomes at various levels of exposure to violence. The proposed research study is designed to address the aforementioned gaps in the literature by testing exposure to violence as a moderator of the association between *active coping*, *behavioral* and *cognitive avoidant coping*, and mental health outcomes in a diverse sample of low-income youth using Luthar and colleagues' (2000) three models as guides.

The proposed research will test these models using both cross-sectional and longitudinal designs. Most research in the area of coping strategies for low income urban youth has been cross-sectional (Caples, & Barrera, 2006; Christian

& McCabe, 2011; Dempsey et al., 2000; Gonzalez et al., 2001; Kraaij et al., 2003; Rafnsson, Jonsson, & Windle, 2006) with fewer longitudinal investigations (Feldman, Fisher, Ransom, & Dimiceli, 1995; Liu, Gonzales, Fernandez, Millsap, & Dumka, 2011; Ptacek, Smith, & Zanas, 1992) and even fewer published studies that have compared cross-sectional and longitudinal effects of coping strategies among at risk youth (Stein & Rotheram-Borus, 2004). It may be a valuable comparison to investigate differences that arise between cross-sectional and longitudinal investigations of the same samples as some strategies may offer temporary relief in the moment yet maladaptive outcomes when utilized over the long-term (Tolan & Grant, 2009). For example, it has been suggested that *avoidant coping*, under stressful conditions may be viewed as protective in the moment (Gonzales and Kim, 1997). However, its continued use has been found to result in later emotional and behavioral difficulties (Fitzpatrick and Boldizar, 1993).

Rationale

There is currently strong evidence that the period of adolescence, particularly for low income urban youth, is associated with high rates of stressors and negative mental health outcomes. Therefore, there is a need to comprehensively inform coping interventions on effective strategies to help protect this population. Unfortunately, a paradox exists in the literature wherein the coping strategies seeming to be most effective for predominantly Caucasian, middle-class, adult samples, sometimes have the opposite effect on low income urban youth. Furthermore, research suggests that for low income urban youth,

avoidant coping may be further delineated as *behavioral avoidance* and *cognitive avoidance*. One possible explanation for the current paradox is exposure to violence moderates the association between coping strategies and internalizing and externalizing outcomes. Luthar and colleague's (2000) protective-reactive, protective-enhancing, and vulnerable-reactive models provide a theoretical basis for this hypothesis. To date, these models have yet to be built upon to determine whether different levels of exposure to violence may drive internalizing and externalizing outcomes associated with *active* and specific *avoidant coping* strategies (Luthar et al., 2000). The present study will test Luthar and colleagues' (2000) theoretical models as part of the broader hypothesis that exposure to violence moderates the association between *active*, *behavioral avoidance* and *cognitive avoidance* and mental health outcomes in a sample of urban youth.

HYPOTHESIS

Primary Hypothesis

- (a) states that exposure to violence at Time 1 (T1) will serve as a moderator of the relation between *active coping* at T1 and externalizing symptoms at Time 2 (T2) such that the association between *active coping* and externalizing symptoms will be negative at low levels of violence and positive at high levels of violence.
- (b) states that exposure to violence at T1 will serve as a moderator of the relation between *active coping* at T1 and internalizing symptoms at T2 such that the association between *active coping* and internalizing symptoms will be negative at low levels of violence and positive at high levels of violence.
- (c) states that exposure to violence at T1 will serve as a moderator of the relation between *behavioral avoidant coping* at T1 and externalizing symptoms at T2 such that the association between *behavioral avoidant coping* and externalizing symptoms will be non-significant (unassociated) at low levels of violence and negative at high levels of violence.
- (d) states that exposure to violence at T1 will serve as a moderator of the relation between *behavioral avoidant coping* at T1 and internalizing symptoms at T2 such that the association between *behavioral avoidant coping* and internalizing symptoms will be positive at low levels of violence and negative at high levels of violence.

- (e) states that exposure to violence at T1 will serve as a moderator of the relation between *cognitive avoidant coping* at T1 and externalizing symptoms at T2 such that violence will accentuate the positive association between *cognitive avoidant coping* and externalizing symptoms.
- (f) states that exposure to violence at T1 will serve as a moderator of the relation between *cognitive avoidant coping* at T1 and internalizing symptoms at T2 such that violence will accentuate the positive association between *cognitive avoidant coping* and internalizing symptoms.

Exploratory Research Question

- (a) Do the proposed models differ when examined cross-sectionally?

METHOD

Research Participants

Participants were 391 Chicago public school students (42% self-identified as African American, 31% as Latino, 12% as European American, 7% as Asian American, 5% as Mixed/Biracial, 1% as American Indian/Native American, .5% as Hawaiian/Pacific Islander and 2% as “Other”). Latino, European American, and Asian American participants were predominately children of recent immigrants. Two hundred and fifty three of the participants (64.5%) were females. At T1, the average age was 13.08 years, and participants were in the 5th through 10th grades. Participants attended one of three different Chicago public schools that were recruited based on having more than 75% low-income students. When selecting for the variables of interest to conduct the primary analysis, missing data was particularly problematic in the large percentage of missing parental data at T1 (37.60%) as well as at T2 (48.85%). Demographic characteristics are presented in Table 1.

Table 1

Demographic Characteristics of the Sample (at T1) n = 391

	N	%
Gender		
Male	138	35.2
Female	253	64.5
Age		
10	6	1.5
11	53	13.5
12	90	23
13	82	20.9
14	82	20.9
15	72	18.4
16	6	1.5
Grade		
5 th	11	2.8
6 th	98	25.0
7 th	83	21.2
8 th	93	23.7
9 th	103	26.3
10 th	3	.8
Race		
African American	165	42.1
Asian	27	6.9
Latino	120	30.6
Caucasian	47	12.0
Mixed/Biracial	19	4.8
American Indian	4	1.0
Hawaiian/Pacific Islander	2	.5
Other	7	1.8

Procedure

Schools that agreed to participate in the larger study were recruited by a standard procedure. Chicago public schools with student poverty rates above 75% (based on eligibility for free/ reduced school lunches) were selected for recruitment. Introductory phone calls were made to school principals, followed by letters describing the goals and procedures of the study.

Once schools agreed to participate in the study, meetings were held with students and classroom teachers to describe the project, coordinate dates for the data collection, explain confidentiality, and answer any questions regarding the study. Parents were informed about the study at parent meetings and report card pick-up days. Parental consent forms were either distributed to students at those meetings, sent home with students or mailed directly to parents depending on the preference of school administrators. In addition, adolescent participants completed assent forms prior to data collection.

Data were collected once each year over a four-year period in the larger study. Data for the first two time periods were examined in the present study. At each time period, participants completed a series of pencil and paper measures assessing stressful life experiences, psychological symptoms, and potential mediating and moderating variables during regularly scheduled class time (at T1) or outside school hours (during subsequent data collection periods). Parent-report measures of adolescents' psychological symptoms were distributed during survey administration and collected from youth in signed sealed envelopes during a subsequent interview data collection (interview data were not examined in the present study).

Measures

Demographics. Information was obtained regarding participants' age, grade, gender, and race/ethnicity. Questions designed to assess this information are part of a two-page demographic questionnaire.

Exposure to violence. Exposure to violence was assessed using the Exposure to Violence Survey-Screening Version (Richters & Martinez, 1990). The survey is a 60-item measure that assesses violence exposure and was developed with a sample of urban, African American adolescents. Participants respond to questions about 27 types of witnessed or experienced violence. The types of violence assessed include burglary, gang violence, weapon carrying, physical assaults, and sexual assaults. Sample items include, "I have been chased by gangs or other people," "I have seen someone else chased by gangs or other people" and "I know someone who has been chased by gangs or other people." Richters and Martinez (1990) report strong psychometrics for the measure, and internal consistency was excellent for each of the racial/ ethnic groups included in the present sample (i.e., $\alpha = .95$ for African Americans; $\alpha = .95$ for Latino Americans; $\alpha = .91$ for European Americans; $\alpha = .97$ for youth from other groups).

Coping Strategies. *Active, behavioral avoidant and cognitive avoidant coping* were assessed using the Children's Coping Strategies Checklist (CCSC; Ayers et al., 1996). The CCSC is a 54-item self-report measure that allows children and adolescents to indicate how frequently they employ various coping strategies when encountering stressful life events. Ayers and colleagues (1996) have found the CCSC to be composed of four factors including *active coping*,

avoidant coping, *distraction coping*, and *support seeking coping*. The two subscales that make up the *avoidant coping* subscale will be used to assess *behavioral avoidant* and *cognitive avoidant* coping respectively: avoidant actions and cognitive avoidance. The number of items on each avoidant subscale is four. The number of items on the active coping subscale is seventeen. Youth rate their use of each coping strategy on a 4-point Likert scale (1 = “never,” 2 = “sometimes,” 3 = “often,” 4 = “most of the time”). Examples of *active coping* items include, “You did something to solve the problem,” examples of *avoidant actions* (or *behavioral avoidant*) items include, “I avoid the people that make me feel bad,” and examples of *cognitive avoidant* items include, “I try to put it out of my mind.” Scores for each dimension are derived by taking the mean of the subscale scores for the subscales that compose that dimension, with higher scores indicating greater use of the strategy. The CCSC scale has been used with adolescents from diverse racial/ethnic backgrounds and a range of SES levels who have been exposed to a variety of stressors (Ayers et al., 1996). The subscales of *avoidant actions* and *cognitive avoidance* have been reported to have internal consistencies ranging from adequate to good (Ayers et al., 1996). Internal consistency for the *active coping* factor was good to excellent for each of the racial/ ethnic groups included in the present sample (i.e., $\alpha = .89$ for African Americans; $\alpha = .90$ for Latino Americans; $\alpha = .86$ for European Americans; $\alpha = .86$ for youth from other groups). Internal consistency for the *avoidant actions* coping subscale was poor to questionable for each of the racial/ ethnic groups included in the present sample (i.e., $\alpha = .58$ for African Americans; $\alpha = .66$ for

Latino Americans; $\alpha = .55$ for European Americans; $\alpha = .55$ for youth from other groups). Internal consistency for the *cognitive avoidance* coping subscale was poor to acceptable for most of the racial/ethnic groups included in the present sample (i.e., $\alpha = .70$ for African Americans; $\alpha = .67$ for Latino Americans; $\alpha = .58$ for European Americans). This fits with previous data as the 10 subscales have been found to range from .55 to .69 in similar samples (Gaylord-Harden et al., 2010). However, internal consistency for the *cognitive avoidant coping* subscale was unacceptable for one of the racial/ethnic groups included (i.e., $\alpha = .35$ for youth from other groups).

Externalizing Symptoms. Externalizing symptoms were assessed using the externalizing subscale of the Child Behavior Checklist (CBCL) (Achenbach, 1991). The CBCL is a parent-report measure of internalizing and externalizing symptoms affecting children and adolescents. The CBCL includes 113 items describing behavior problems, which the youth's parent rates on a 3 point scale as 0 = "not true," "1 = sometimes/somewhat true," 2 = "very true or often true" of his/her child. Sample items from the externalizing subscale of the CBCL include "Gets in many fights," "Is mean to others," and "Physically attacks people." Reliability and validity of the instrument is well established (Achenbach, 1991; Rescorla, Achenbach, Ginzburg, Ivanova, Dumenci, & Almqvist, 2007), and internal consistency for the externalizing subscale was good to excellent for each of the racial/ ethnic groups included in the present sample (i.e., $\alpha = .80$ for African Americans; $\alpha = .91$ for Latino Americans; $\alpha = .88$ for European Americans; $\alpha = .95$ for youth from other groups).

Internalizing Symptoms. Internalizing symptoms were assessed using the internalizing subscale of the Youth Self Report Form (YSR) (Achenbach, 1991). The YSR assesses internalizing and externalizing symptoms affecting adolescents. It includes 119 behavior items which the adolescent rates on a 3 point scale as 0 = “not true,” 1 = “sometimes/somewhat true,” 2 = “very true or often true” of themselves (during the past 6 months). Sample items from the internalizing subscale include: “I feel worthless or inferior,” “I am too fearful or anxious,” or “I cry a lot.” Reliability and validity for the YSR are well established (Achenbach, 1991; Rescorla, Achenbach, Ginzburg, Ivanova, Dumenci, & Almqvist, 2007), and internal consistency for the internalizing subscale was good to excellent for each of the racial/ethnic groups included in the present sample (i.e., $\alpha = .81$ for African Americans; $\alpha = .89$ for Latino Americans; $\alpha = .92$ for European Americans; $\alpha = .90$ for youth from other groups).

RESULTS

The results of the analyses are presented in three steps. First, the preliminary analyses will be summarized (important characteristics of the sample that relate to the study). Second, the major analyses will summarize the results of the study that relate to the specific hypotheses and exploratory research question presented in the Introduction. Finally, the Supplemental Analyses section will summarize results of analyses that investigated questions raised by the findings from the major analyses.

Preliminary Analyses

To test the primary hypothesis, a priori power analysis indicated a sample size of 56 would be sufficient to detect a significant interaction effect with a power of greater than .99, an alpha of .05, and an effect size of .4. To answer the exploratory research question, a priori power analysis indicated a sample size of 53 would be sufficient to detect a significant interaction effect with a power of greater than .99, an alpha of .05, and an effect size of .4. An anticipated small-moderate effect size of .4 was used as this significant effect is typical of coping effect sizes in the adolescent literature (Compas et al., 2001).

Attrition and Missing Data Analyses

Taken together, across the two waves of the survey composite scores used in analyses, T1 included complete data for 189 students including parental data, with 48% participants having all data available at T2 as well. The data were tested for potential bias in attrition by comparing the respondents who were attrited with those who were not across the demographic and predictor variables included in

the analyses (i.e., race, age, gender, exposure to violence, *active coping*, *behavioral avoidant coping*, *cognitive avoidant coping*, internalizing symptoms, and externalizing symptoms). No significant differences emerged. As a result, the data were deemed “Missing at Random” (MAR; Rubin, 1987), which allowed for the use of multiple imputation (MI) to be conducted on the full sample of 391 participants (Jeličić, Phelps, & Lerner, 2010).

Missing data was particularly problematic in the large percentage of missing parental data at T1 (37.60%). Missing data for the hierarchical regression analyses used to test for moderation were handled using MI. MI is based on theoretical frameworks for missing data estimation as well as statistical theory and has been shown to preserve important characteristics of the entire data set and is recommended for handling missing data over listwise deletion (Jeličić et al., 2010). The statistical software *IBM SPSS 19* was used to conduct MI, producing five full datasets, which were each analyzed and the results pooled. The decision to impute five full data sets was made as is common in the literature and is the default when conducting *IBM SPSS 19* (Scholz et al., 2013).

Descriptive Statistics

In this study, externalizing and internalizing symptoms served as dependent variables and exposure to violence, *active coping*, *behavioral avoidant coping*, and *cognitive avoidant coping* served as predictor variables. To assess whether certain demographic variables should be controlled in the present study, preliminary analyses were conducted. An independent t-test revealed differences by age at T1 ($t(171.74) = 3.44, p < .01$), such that students above or equal to the

mean age ($M = 13.08$, $SD = 1.41$) reported significantly more internalizing symptoms at T2 than students below the mean age in the sample (mean difference = 3.43). An independent t-test also revealed differences by age at T2 ($t(74.28) = 2.76$, $p < .01$), such that students above or equal to the mean age at T2 ($M = 14.40$, $SD = 1.91$) also reported significantly more internalizing symptoms at T2 than students below the mean age at T2 in the sample (mean difference = 3.66). In addition, an independent t-test revealed differences by age at T2 ($t(346) = -2.47$, $p < .05$), such that students above or equal to the mean age reported significantly less *behavioral avoidance* at T1 than students below the mean age in the sample (mean difference = -.90). Furthermore, an independent t-test revealed differences by age at T2 ($t(346) = -2.20$, $p < .05$), such that students above or equal to the mean age reported significantly less *cognitive avoidance* at T1 than students below the mean age in the sample (mean difference = -.80). In addition, an independent t-test revealed differences by age at T2 ($t(107.32) = 2.37$, $p < .05$), such that students above or equal to the mean age reported significantly more *active coping* at T1 than students below the mean age in the sample (mean difference = 2.63).

A One-Way ANOVA revealed differences by race ($F = 13.33$, $p < .01$) such that African Americans reported significantly more exposure to violence than Asians (mean difference = 22.76), Latinos (mean difference = 20.99), and Caucasians (mean difference = 13.69). In addition, Mixed/Biracials reported significantly more exposure to violence than Asians (mean difference = 36.16) and Latinos (mean difference = 34.39). A One-Way ANOVA also revealed

differences by race ($F = 3.05, p < .05$) such that African Americans reported significantly more *behavioral avoidance* than Caucasians (mean difference = 1.52)

An independent t-test revealed differences by gender ($t(354) = -3.75, p < .01$), such that females reported significantly more internalizing symptoms at T1 than males (mean difference = -3.87) and at T2 as well ($t(228.52) = -4.19, p < .01$; mean difference = 3.62). In addition, an independent t-test revealed differences by gender ($t(206.57) = 2.71, p < .01$), such that males reported significantly more exposure to violence than females (mean difference = 8.91). Thus age, race and gender were controlled for in the analysis.

A Pearson Product Moment correlation assessed additional relationships between the predictor and dependent variables. As demonstrated by the correlation table presented in Table 2, internalizing symptoms at T1 were correlated with externalizing symptoms at T1 ($r(223) = .23, p < .01$) and at T2 ($r(186) = .15, p < .05$), internalizing at T2 ($r(246) = .60, p < .01$), exposure to violence ($r(340) = .29, p < .01$) and *cognitive avoidance* ($r(319) = .15, p < .01$). Externalizing at T1 was correlated with externalizing at T2 ($r(138) = .47, p < .01$) and exposure to violence ($r(234) = .32, p < .01$) as was externalizing at T2 ($r(189) = .19, p < .01$). *Behavioral avoidance* was correlated with *cognitive avoidance* ($r(347) = .50, p < .01$) and *active coping* ($r(318) = .51, p < .01$). *Cognitive avoidance* was correlated with *active coping* ($r(318) = .48, p < .01$).

Table 2

Correlations: Demographic, predictor and dependent variables (n = 391)

Variable	1	2	3	4	5	6	7	8	9	10	11
Gender	1	.20**	.05	.22**	.10	-.15**	.06	.08	.08	-.02	.01
Internalizing T1		1	.23**	.60**	.15*	.29**	.08	.15**	.06	-.02	.02
Externalizing T1			1	.11	.47**	.32**	.07	.05	-.07	-.01	.03
Internalizing T2				1	.14	.09	-.05	.08	.04	.21**	.18**
Externalizing T2					1	.19**	.08	.12	.06	.09	.12
EV						1	.10	.10	.01	.11*	.10
BA							1	.50**	.51**	-.06	-.02
CA								1	.48**	.05	.01
AC									1	.12*	.08
Age T1										1	.87**
Age T2											1

* < .05 ** < .01

Note. EV = Exposure to Violence T1; BA = Behavioral Avoidance T1; CA = Cognitive Avoidance T1; AC = Active Coping T1

Centering Variables

Prior to conducting regression analyses and post-hoc tests to interpret any significant interactions, all continuous predictor variables included in the analyses (i.e., exposure to violence, *active coping*, *behavioral avoidant coping*, and *cognitive avoidant coping*) were centered. This was accomplished by subtracting the sample mean from all individuals' scores on the variable, thus producing a revised sample mean of 0. This is a recommended approach as this procedure reduces multicollinearity between predictors and any interaction terms among them and facilitates the testing of simple slopes (Aiken & West, 1991; Holmbeck, 2002). The primary analyses which follow below reflect pooled, unstandardized, (β) coefficients.

Major Analyses

Hypothesis I

Hypothesis I stating that exposure to violence at T1 will serve as a moderator of the relation between *active coping* at T1 and externalizing symptoms at T2 such that the association between *active coping* and externalizing symptoms will be negative at low levels of violence and positive at high levels of violence was analyzed using a hierarchical linear regression, controlling for age, race, gender and externalizing and internalizing symptoms at T1. Analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *active coping* at T1 and externalizing symptoms at T2 ($\beta = .01$, $SE = .01$, $p = .50$).

Hypothesis II

Hypothesis II stating exposure to violence at T1 will serve as a moderator of the relation between *active coping* at T1 and internalizing symptoms at T2 such that the association between *active coping* and internalizing symptoms will be negative at low levels of violence and positive at high levels of violence was analyzed using a hierarchical linear regression, controlling for age, race, gender and externalizing and internalizing symptoms at T1. Analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *active coping* at T1 and internalizing symptoms at T2 ($\beta = -.01$, $SE = .01$, $p = .62$).

Hypothesis III

Hypothesis III stating that exposure to violence at T1 will serve as a moderator of the relation between *behavioral avoidant coping* at T1 and externalizing symptoms at T2 such that the association between *behavioral avoidant coping* and externalizing symptoms will be non-significant (unassociated) at low levels of violence and negative at high levels of violence was analyzed using a hierarchical linear regression, controlling for age, race, gender and externalizing and internalizing symptoms at T1. Analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *behavioral avoidant coping* at T1 and externalizing symptoms at T2 ($\beta = .01, SE = .01, p = .54$).

Hypothesis IV

Hypothesis IV stating exposure to violence at T1 will serve as a moderator of the relation between *behavioral avoidant coping* at T1 and internalizing symptoms at T2 such that the association between *behavioral avoidant coping* and internalizing symptoms will be positive at low levels of violence and negative at high levels of violence was analyzed using a hierarchical linear regression controlling for age, race, gender and externalizing and internalizing symptoms at T1. Analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *behavioral avoidant coping* at T1 and internalizing symptoms at T2 ($\beta = -.01, SE = .01, p = .41$).

Hypothesis V

Hypothesis V stating exposure to violence at T1 will serve as a moderator of the relation between *cognitive avoidant coping* at T1 and externalizing symptoms at T2 such that violence will accentuate the positive association between *cognitive avoidant coping* and externalizing symptoms was analyzed using hierarchical linear regression controlling for age, race, gender and externalizing and internalizing symptoms at T1. Analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *cognitive avoidant coping* at T1 and externalizing symptoms at T2 ($\beta = .01, SE = .01, p = .18$).

Hypothesis VI

Hypothesis VI stating exposure to violence at T1 will serve as a moderator of the relation between *cognitive avoidant coping* at T1 and internalizing symptoms at T2 such that violence will accentuate the positive association between *cognitive avoidant coping* and internalizing symptoms was analyzed using hierarchical linear regression controlling for age, race, gender and externalizing and internalizing symptoms at T1. Analyses demonstrated that exposure to violence at T1 did not serve as a moderator of the relation between *cognitive avoidant coping* at T1 and internalizing symptoms at T2 ($\beta = -.01, SE = .01, p = .53$).

Research Question I

The exploratory research question asking whether the proposed models differ when examined cross-sectionally was analyzed using hierarchical linear regressions controlling for age, race, and gender.

In terms of *active coping*, when examined cross-sectionally, analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *active coping* at T1 and externalizing symptoms at T1 ($\beta = -.01$, $SE = .01$, $p = .58$). Analyses also demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *active coping* at T1 and internalizing symptoms at T1 ($\beta = .01$, $SE = .01$, $p = .06$).

In terms of *behavioral avoidant coping*, when examined cross-sectionally, analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *behavioral avoidant coping* at T1 and externalizing symptoms at T1 ($\beta = .01$, $SE = .01$, $p = .10$) however, analyses demonstrated it did serve as a moderator of the relation between *behavioral avoidant coping* at T1 and internalizing symptoms at T1 ($\beta = .01$, $SE = .01$, $p = .01$). Therefore, a third set of analyses was run to conduct post-hoc probing of the interaction effect. Rather than indicating the hypothesized relationship, post-hoc analyses indicated the association between *behavioral avoidance* and internalizing outcomes at T1 was negative at low levels of violence and positive at high levels of violence as indicated in Figure 1.

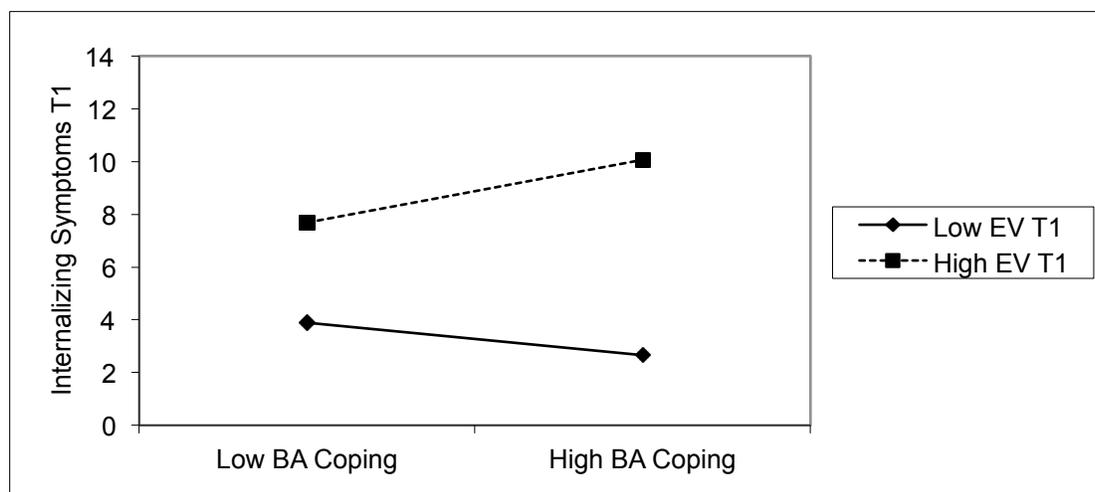


Figure 1. Moderating effects of exposure to violence at T1 on relation between *behavioral avoidant coping* at T1 and internalizing symptoms at T1.

In terms of *cognitive avoidant coping*, when examined cross-sectionally, analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *cognitive avoidant coping* at T1 and externalizing symptoms at T1 ($\beta = -.01, SE = .01, p = .23$), or internalizing symptoms at T1 ($\beta = .01, SE = .01, p = .53$).

Supplemental Analyses

To better understand which *behavioral avoidance* items were endorsed at high frequencies in the current sample, a frequency analysis was run on the *behavioral avoidance (avoidant actions)* subscale items. Results of the frequency analysis, as displayed in Table 3, indicate that participants who endorsed high rates of *behavioral avoidance* tended to report items relating to *trying* to physically avoid rather than *actually* avoiding different stressors.

Table 3

Frequency Analysis of BA Subscale Item Endorsements of the Sample (at T1)
N = 391

	N	%
<i>Trying to Physically Stay Away Items</i>		
I try to stay away from the problem		
Never	33	9.8
Sometimes	151	41.52
Often	71	21.17
Most of the time	92	27.49
I try to stay away from things that make me feel upset		
Never	28	7.99
Sometimes	126	36.12
Often	95	27.22
Most of the time	100	28.68
<i>Physically Staying Away Items</i>		
I avoid the people that make me feel bad		
Never	56	16.18
Sometimes	131	37.78
Often	89	25.68
Most of the time	71	20.36
I avoid it by going to my room		
Never	76	22.56
Sometimes	135	40
Often	67	19.88
Most of the time	59	17.56

Confirmatory Factor Analysis

The four-factor model of the CCSC (Figure 2) has been suggested to have a poor model fit for low income urban youth, and the three-factor model (Figure 3) has been recommended for African American youth (Gaylord-Harden et al., 2008). Therefore, the following assessments of model fit were used to determine if either model served as a better fit for the present sample through Confirmatory Factor Analysis (CFA). Consistent with recommended procedures in structural equation modeling, several different fit indices were examined (i.e., χ^2 , CFI, RMSEA, SRMR) to assess the fits of both models (Hu & Bentler, 1999). While the chi square value indicated a slightly better model fit for the three-factor model

($\chi^2(626, N = 354) = 1550.21, p < .01$) compared to the four-factor model ($\chi^2(696, N = 354) = 1628.03.21, p < .01$), the chi square value was not significantly different between the two models ($\Delta\chi^2 = 77.82, \Delta df = 70, p = .24$). Furthermore, neither model appeared to fit the analyzed covariance matrix adequately as indicated by Table 4.

CFA analyses demonstrated some good assessments of model fit for the three-factor model (RMSEA = 0.07, RMSEA 90% C. I. = 0.06 - 0.07, SRMR = 0.07) and the four-factor model (RMSEA = 0.06, RMSEA 90% C. I. = 0.06 - 0.07, SRMR = 0.07). However, other measures suggested poor fits for the three-factor model (CFI = .75) and four-factor model (CFI = .76). In cases where two models seem to fit the data equally well, the recommendation is generally to choose the more parsimonious model which is the three-factor model (Hu & Bentler, 1999). However, due to the lack of clear difference between the two models fits, the four factor model was retained in the current study for purposes of comparison to other studies as it is well established and frequently used in the literature (Ayers et al., 1996).

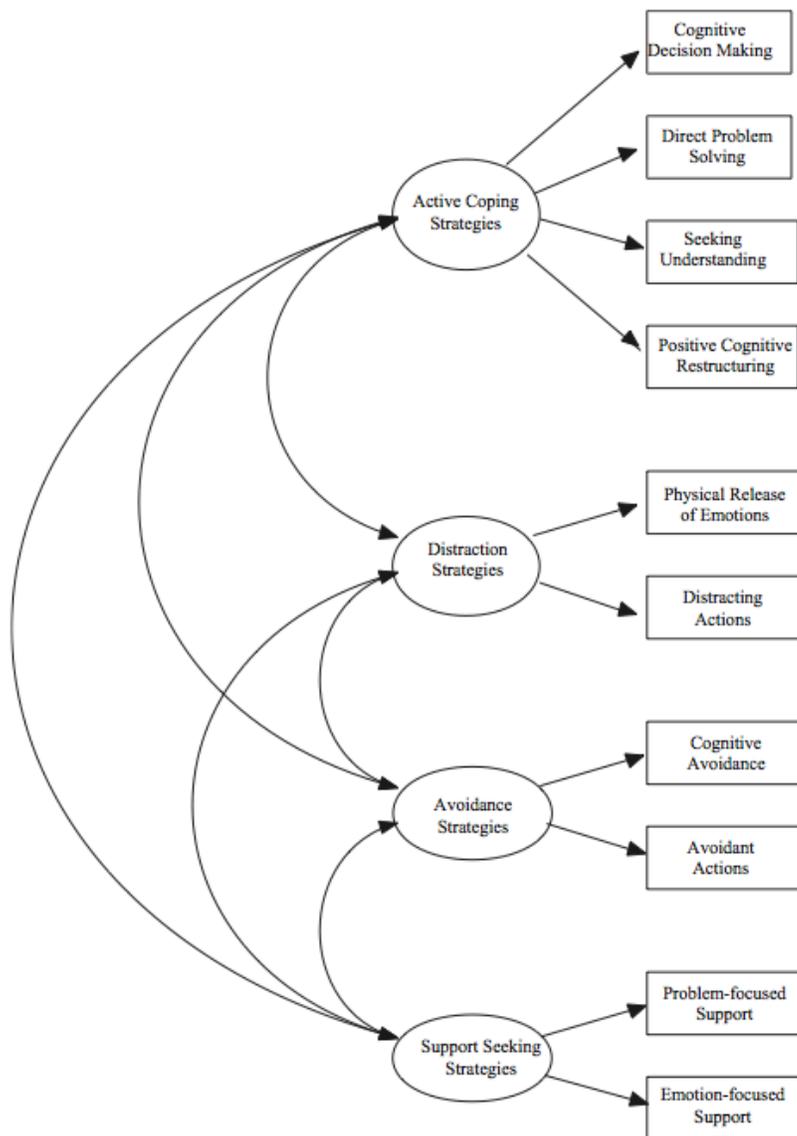


Figure 2. Four-factor model of the Children's Coping Strategies Checklist (Ayers et al., 1996).

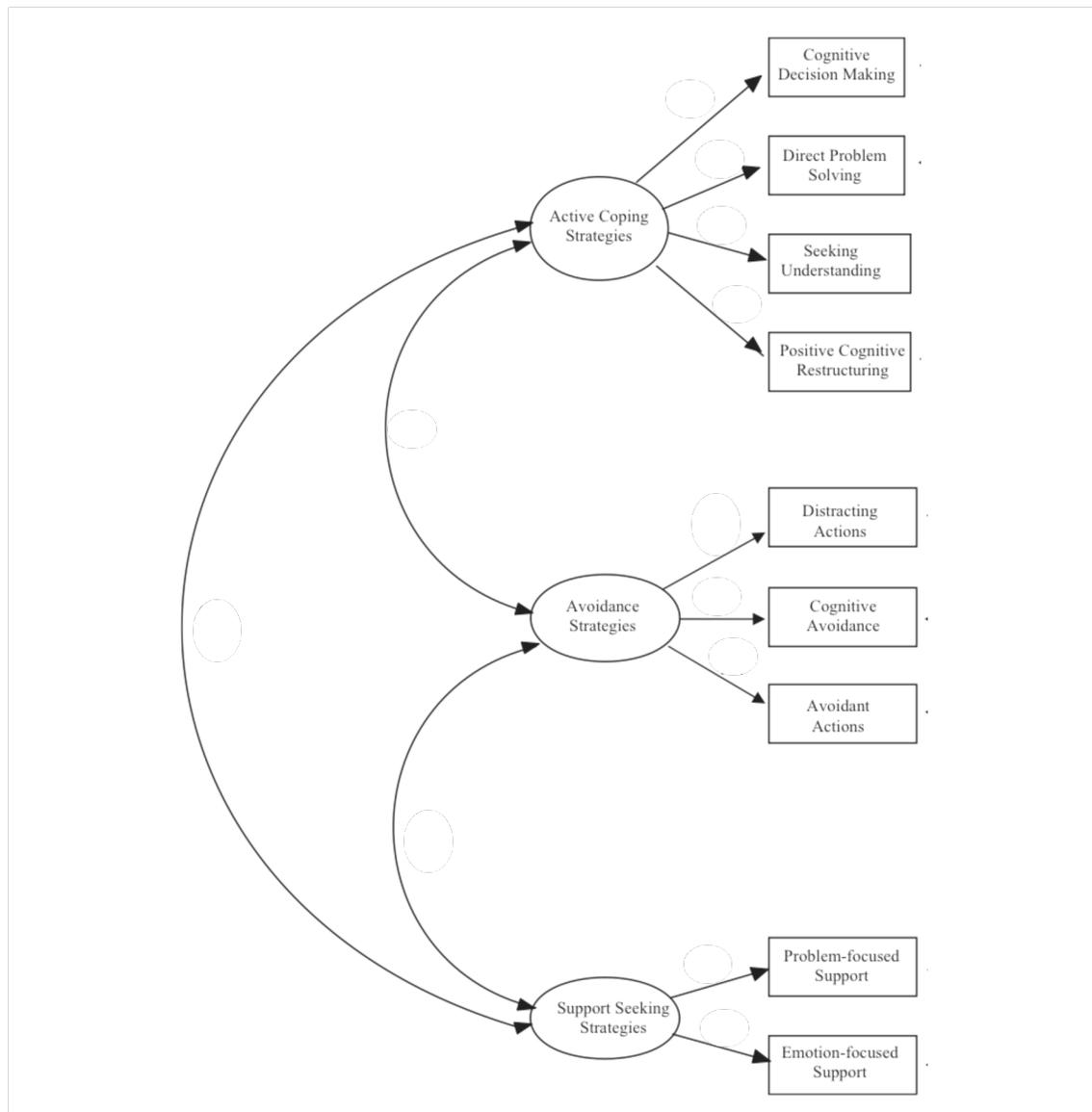


Figure 3. Three-factor model of the Children's Coping Strategies Checklist (Gaylord-Harden et al., 2008).

Table 4

Confirmatory Factor Analysis (CFA) of Ayers and colleagues' (1996) 4 Factor Model and Gaylord-Harden and colleagues (2008) 3-Factor Model of the Children's Coping Strategies Checklist.

	4-Factor Model	3-Factor Model	Model Fit Hu & Bentler (1999)
χ^2	$\chi^2 = 1628.03,$ $df = 696, p < .01$	$\chi^2 = 1550.21,$ $df = 626, p < .01$	
CFI	.76	.75	$\leq .9 =$ acceptable model
RMSEA	RMSEA = 0.06, RMSEA 90% C. I. = 0.06 - 0.07	RMSEA = 0.07, RMSEA 90% C. I. = 0.06 - 0.07	.05 - .08 = adequate
SRMR	.07	.07	$< .08 =$ desired

Note. Adequate model fit assessments according to Hu & Bentler (199) are in boldface.

Aside from the current study, researchers have not yet examined exposure to violence as a moderator of the relation between *active, behavioral* and *cognitive avoidance* and mental health outcomes. However, one study investigated *cognitive distraction* and *behavioral avoidance* as moderators of the association between exposure to violence and mental health outcomes (Dempsey et al., 2000). More specifically, Dempsey and colleagues (2000) reported findings suggesting high levels of violence exposure may interact with *behavioral avoidance* as a protective factor against PTSD arousal symptoms (Dempsey et al., 2000). Dempsey and colleagues (2000) did not test for broad band measure reports of internalizing or externalizing symptoms nor did they assess longitudinal data, as was done in the current study (Dempsey et al., 2000). Therefore, supplemental analyses were run to see if similar patterns would be found in the current sample if Post Traumatic Stress (PTS) symptoms were assessed.

Longitudinal analyses demonstrated exposure to violence at T1 did not serve as a moderator of the relation between *active coping* ($\beta = .01, SE = .01, p = .34$), *behavioral avoidant coping* ($\beta = .01, SE = .01, p = .12$), or *cognitive avoidant coping* ($\beta = -.01, SE = .01, p = .54$) and PTS symptoms at T2 as indicated by the YSR. Cross sectional analyses indicated non-significance as well for the relation between *active* ($\beta = .01, SE = .01, p = .89$), *behavioral avoidant* ($\beta = .01, SE = .01, p = .98$) and *cognitive avoidant coping* ($\beta = .01, SE = .01, p = .77$) and PTS symptoms at T1.

DISCUSSION

The present study sought to explore the impact of exposure to violence on the relation between coping strategies and mental health outcomes in a predominantly low-income urban adolescent sample. More specifically, the current study investigated Luthar and colleagues' (2000) theoretical models as part of the broader hypothesis that exposure to violence moderates the association between *active*, *behavioral avoidance* and *cognitive avoidance coping* and mental health outcomes in a sample of urban youth. Overall, exposure to violence was not found to moderate the relation between the tested coping strategies and mental health outcomes as predicted in the aforementioned hypotheses.

Before thoroughly discussing the specifics of the primary findings in the current study, it is important to note that coping was generally unassociated with symptoms. While *cognitive avoidance* was positively associated with internalizing symptoms at T1, this was the only significant correlation between coping strategies and symptoms. Many research findings, though mixed in their specific correlational results, and often more focused on internalizing rather than externalizing symptoms, have reported coping to be associated with psychopathological symptoms (Compas et al., 2001). More specifically, Compas and colleagues (2001) have reported on a number of studies that have suggested positive or negative associations for problem-focused and disengagement coping as they each correlate with internalizing and externalizing symptoms. Problem-focused coping encompasses seeking information, generating possible solutions and taking action to change circumstances (Compas et al., 2001). This form of

coping typically overlaps with definitions of *active coping*. Compas and colleagues (2001) found four studies to have a negative association between problem-focused coping and internalizing symptoms and two to have a negative association with externalizing symptoms. They also found two studies to show a positive association with internalizing symptoms and one to show a positive association with externalizing symptoms. The broader domain of disengagement coping includes avoidance, denial and wishful thinking which appear to include coping strategies such as *cognitive* and *behavioral avoidance* (Compas et al., 2001). Compas and colleagues (2001) found twenty-eight studies to have a positive association between disengagement coping and internalizing symptoms and three to have a positive association with externalizing symptoms. They also found two to have a negative association with internalizing symptoms and three to have a negative association with externalizing symptoms. Therefore, though mixed in specific correlational results, and often more focused on internalizing rather than externalizing symptoms, most research in this area has reported coping to be associated with psychopathological symptoms (Compas et al., 2001). For that reason, the current study's general lack of correlational findings between *active, behavioral* and *cognitive avoidant* coping and internalizing and externalizing symptoms is fairly unexpected.

One reason for there being a general lack of expected findings for coping strategies in the current study's correlation matrices, may be due to psychometric limitations of the CCSC for the current diverse low income sample (Ayers et al., 1995). As previously mentioned, the internal consistency on the *avoidant* coping

subscales ranged from questionable to unacceptable in the current sample. In addition, the four-factor structure of the CCSC, typically used in predominantly Caucasians adult samples, was not indicated to be a good fit for the current sample. Similarly, the three-factor structure which has been found to be a better fit for African American youth was not indicated to be a good fit either (Ayers et al., 1995; Gaylord-Harden et al., 2008). The validity of the specific subscales of *avoidant* coping, such as *cognitive avoidance*, is even more poorly understood, particularly with low income urban youth (Dempsey et al., 2000; Gaylord-Harden et al., 2010). Therefore, poor psychometrics of the coping measures used in the present study may explain the lack of effects for coping. More research is needed to determine factor structures of the CCSC that may better fit coping patterns of low income urban youth.

A second reason as to why there was a lack of expected findings in terms of coping strategy use and symptoms may be due to the generality of the CCSC. More explicitly, the coping scale in the current study assessed for coping strategy use in general whereas other studies have used measures that more specifically match stressors with coping strategy use. For example, Dempsey and colleagues (2000) used the *behavioral avoidance* scale, a subscale of a coping measure called the KidCope which has youth match the coping strategies they use to respond to specific stressors (Dempsey et al., 2000; Spidto, Stark, & Williams, 1988). Findings of the current study may have been more aligned with those of Dempsey and colleagues (2000) as they pertain to psychopathological symptoms and particularly PTS symptoms if the KidCope had been used in the current study to

measure coping strategies employed by youth rather than the CCSC. For example, a more specific coping strategy matching measure such as the KidCope may have found that *behavioral avoidance* is protective when specifically used in response to violence exposure however, when used by children in response to a more controllable stress (e.g., academics) *behavioral avoidance* is detrimental. In general, there is growing evidence that situation-specific coping measures more accurately predict outcomes (Compas et al., 2001; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000).

Nonetheless, most prior studies of associations between coping and outcomes have shown some significant correlations (at least those that have been published) (Compas et al., 2001). The lack of association between coping and symptoms in the present study may represent a more general protective reactive effect in that coping within this low-income urban context appears unrelated to outcomes. In other words, it may be that patterns of coping strategies and outcomes are better understood as they are affected by exposure to violence in the low income urban context rather than in terms of strictly what coping strategies match on to specific outcomes in general. Conceptualizing coping strategies specifically *behavioral avoidance* as they relate to outcomes in terms of a protective reactive framework assessing differences at high versus low levels of violence may indeed help to better understand the paradox that has existed in the coping literature for low income urban youth.

In discussing the current study's primary analysis findings more specifically, support was not found for Hypothesis I and II, which stated that

exposure to violence at T1 will serve as a moderator of the relation between *active coping* at T1 and mental health outcomes at T2 (i.e., externalizing and internalizing symptoms at T2, respectively) such that the association between *active coping* and mental health outcomes at T2 will be negative at low levels of violence and positive at high levels of violence. Rather, exposure to violence was not found to be a moderator of the relation between *active coping* and internalizing or externalizing symptoms at T2, nor was it found it be a moderator at T1. To date, this is the first study to assess exposure to violence as a moderator of the relation between *active coping* and externalizing and internalizing symptoms. Therefore, it may not indeed be a moderator of this relation as indicated in the current study. Or, perhaps, as mentioned previously, the lack of findings may be due to the limitations of the coping measure used.

Support was also not found for Hypothesis III and IV which stated exposure to violence T1 will serve as a moderator of the relation between *behavioral avoidant coping* at T1 and mental health outcomes at T2 (i.e., externalizing and internalizing symptoms, respectively) such that the association between *behavioral avoidant coping* and mental health outcomes will be non-significant (unassociated) at low levels of violence and negative at high levels of violence. Rather, exposure to violence was found to be a moderator of the relation between *behavioral avoidant coping* and internalizing though not externalizing symptoms at T1. More specifically, it was found that the association between *behavioral avoidance* and internalizing symptoms was protective, at low levels of violence and detrimental, at high levels. There were no significant moderating

effects at T2.

While research has suggested coping strategies showing effectiveness with normative stress exposure may be less effective or even maladaptive in the context of severe and chronic stress (Grant, 2005), thus far, exposure to violence has never been examined as a moderator of the association between coping strategies and mental health outcomes, aside from the current study. Thus, *behavioral avoidant* coping may indeed be detrimental at high levels of violence, yet protective at low levels, as demonstrated in this low income urban sample of youth over the short-term. Results of the supplemental frequency analysis of the behavioral avoidance subscale may help to explain how that might be. More specifically, it was found that participants who highly endorsed items of the *behavioral avoidance* subscale tended to rate the items pertaining to “trying to physically avoid” different stressors rather than those items implying youth were “actually avoiding” stressors. This suggests that the *behavior avoidance* subscale in the current study more accurately depicted “trying to avoid stressors” rather than in fact “physically avoiding stressors.” In further interpreting the *behavioral avoidance* findings, it may be that *trying* to avoid dangerous situations may be adaptive at low levels of violence. However, *trying* rather than actually *physically* avoiding stressors at chronic stress levels may end up creating more internalizing symptoms over the short-term. More practically speaking, at high levels of violence, it may feel nearly impossible for youth to completely *physically* avoid the very stressful people and/or situations that are continuing to expose them to violence thus, further perpetuating their internalizing symptoms. In line with the

literature, continuously thinking about trying to avoid a stressor rather than actually avoiding it, especially for females, may be associated with rumination which has been found to be correlated with internalizing symptoms (Hankin, 2008). As previously indicated, the current study is comprised of a disproportionately higher percentage of females as compared to males. Therefore, this rumination hypothesis may explain why youth reported more internalizing symptoms when engaging in behavioral avoidance attempts at higher violence exposure.

The current findings on *behavioral avoidance* coping also build on previous research suggesting the effectiveness of adaptive coping may differ depending upon the level of stress in urban contexts (Gonzales et al., 2001). More specifically, *avoidance*, and in this case, *behavioral avoidance*, may indeed be a reasonable and adaptive strategy for at risk urban youth exposed to relatively low levels of exposure to violence however, when it comes to higher levels of violence, it may not be enough to protect them (Gonzales & Kim, 1997; Tolan et al., 1997). There are additional reasons why the current sample may have reported higher levels of internalizing symptoms when using higher frequencies of *behavioral avoidance* at higher levels of violence exposure. For one, the act of expressing psychopathology in chronically high-crime communities may put urban youth at a higher risk for being victimized (Reynolds et al. 2001; Cassidy & Stevenson 2005; White & Farrell 2006). Therefore, youth, particularly those with high levels of violence exposure, may experience more internalizing symptoms after consistently expressing their need to leave dangerous situations. Perhaps this

is because the act of leaving or attempting to leave potentially violent situations does not necessarily stop threatening situations from happening the following day in low income urban contexts. Youth who are trying to leave dangerous situations may have especially high levels of anxiety due to regularly fearing what may happen to the friends they are leaving behind or frightening threats they may receive in the near future from gang members.

In addition to understanding why urban youth may be protected by *behavioral avoidance* at lower levels of violence yet harmed at higher levels at T1, it is also important to consider why there were no significant longitudinal findings. Previous research has suggested there may be differences between longitudinal outcomes and cross sectional outcomes when assessing the effectiveness of coping strategies for low income urban youth exposed to uncontrollable stressors (Tolan & Grant, 2009). More specifically, previous research has suggested *avoidant* coping, under stressful conditions may be viewed as protective in the moment (Gonzales & Kim, 1997) though more likely to be associated with later emotional and behavioral difficulties (Fitzpatrick & Boldizar, 1993; Windle & Windle, 1996). While this did not seem to be the case in the current study when assessing violence exposure as a moderator of the relation between *behavioral avoidance* and internalizing symptoms, it does raise questions about when students were exposed to the violence they reported at T1. Perhaps, those students who reported higher levels of violence exposure at T1 exhibited internalizing symptoms associated with longer-term stressors as compared to the violence exposure experienced by those in the lower violence

group at T1. Future research comparing cross-sectional and longitudinal effects of violence exposure on coping and mental health outcomes would benefit from employing a measure to pick up on precisely when students are exposed to violence and what types of strategies they use specifically in response to those events. In having used the CCSC and a separate measure that assessed for violence exposure, it is difficult to provide a comprehensive picture from the current study of exactly when students experienced and then responded to different levels of exposure to violence. In addition, it may have been useful to note how participants' coping strategies changed over time as adolescents are likely to change their responses to stress over time which in turn are likely to affect their internalizing symptoms as well (Compas, Malcarne, & Fondacaro, 1988).

With respect to why cross-sectional findings relating to *behavioral avoidance* and internalizing symptoms were indicated to be significant though longitudinal findings were not, it may be that the coping strategies youth are practicing, the symptoms they are experiencing, or the way in which their coping methods and symptoms interact with violence exposure changes over time (Windle & Windle, 1996). More specifically, it may be that in the moment, *behavioral avoidance* serves as a psychological buffer which can be associated with protective or detrimental short-term effects (Windle & Windle, 1996; Dempsey et al., 2000). Over time, those *avoidant coping* tendencies youth have may end up preventing them from employing adaptive *active coping* techniques (Windle & Windle, 1996). However, it may also be that their avoidant techniques

are what end up allowing them to ultimately find resources to help them adapt to stress in healthier ways or more successfully stay away from violent contexts (Windle & Windle, 1996). Therefore, the long-term effects of *behavioral avoidant* coping may require a more thorough assessment to determine how one's copings strategies are changing over time and how those changes relate to outcomes.

A third explanation for why long-term effects seem to be lacking in the current study may be that clinical symptoms may be associated with violence exposure over the short-term for the majority of low income urban youth though not necessarily over the long-term (Barlow, 2008). More specifically, only those individuals who end up developing PTSD are the ones recognized to be clinically impaired by memories and cues associated with traumas that intrude upon their thoughts over time in at least one of a variety of impairing ways including: avoidance, physiological arousal or intrusive thoughts (Barlow, 2008). While a certain level of anxiety is to be expected for all individuals experiencing traumatic events and is adaptive for them to appropriately respond to stressful situations, clinical concern arises when youth become psychologically impaired by their traumatic exposure over time (Sapolsky, 2000). Therefore, youth in the current study may be exhibiting detrimental effects in the short-term after experiencing violence but are exhibiting more normalized levels of mental health symptoms over time.

Finally, support was also not found for Hypothesis V and VI which stated exposure to violence T1 will serve as a moderator of the relation between

cognitive avoidant coping T1 and mental health outcomes at T2 (i.e., internalizing and externalizing symptoms) such that violence will accentuate the positive association between *cognitive avoidant coping* and mental health outcomes. Similarly, exposure to violence did not serve as a moderator of the relation between *cognitive avoidant coping* and mental health outcomes at T1. To date, this is the first study to test *cognitive avoidant coping* as it may interact with exposure to violence and mental health outcomes. Therefore, it may not be a moderator of this relation as indicated in the current study. Or, perhaps, as mentioned previously, the lack of findings may again be due to the limitations of the coping measure used.

Strengths

The present study makes several important contributions. In particular, it builds upon a growing literature documenting moderators, and specific effects in the association between stressors and psychological symptoms affecting young people (Grant et al., 2003, 2006; McMahon, Grant, Compas, Thurm, & Ey, 2003). In particular, the current study attempted to address several important holes in this area, most notably the unexplained paradox in the coping literature wherein the coping strategies seeming to be most effective for predominantly Caucasian, middle-class, adult samples, sometimes have the opposite effect on low income urban youth (Ayers et al., 1996; Dempsey et al., 2000; Compas et al., 2001; Rosario et al., 2003), the need to incorporate a contextual framework involving exposure to violence as a moderator for low income urban youth (Fowler et al.,

2009; Tolan & Grant, 2009), and the dearth of research in this field comparing longitudinal and cross-sectional findings (Stein & Rotheram-Borus, 2004).

The current study sought to examine several reasons to help explain the current paradox in the literature wherein the coping strategies recommended to be most effective for predominantly Caucasian, middle-class, adult samples, sometimes have the opposite effect on more ethnically diverse samples of low income urban youth. One of the reasons it sought to investigate is the role of exposure to violence as a possible moderator of the relation between coping strategies and mental health outcomes. The current study is the first to assess exposure to violence as it may serve as a potential moderator of the relation between *active*, *behavioral avoidance* and *cognitive avoidant* coping strategies, and externalizing and internalizing symptoms. While findings did not align with the specific hypotheses set forth, they still help to build upon previous research as to why the current coping paradox in the literature may exist. As previously mentioned pertaining to the unexpected lack of coping strategy and outcome correlational findings, methodological issues first need to be addressed such as the generally poor psychometrics of coping measures for low income urban youth. Though the CCSC has been referred to as the gold standard coping measure to use in this field with the greatest invariance across ethnicity, it is important for coping measures to be used with stronger psychometrics that are maintained across samples of ethnically diverse youth from a range of low socioeconomic statuses (Gaylord-Harden et al., 2008). In addition, it is important for future studies in this area to help in more precisely matching how specific stressors match onto which

specific outcomes (Epstein-Ngo, Maurizi, Bregman, & Ceballo, 2013). Once measures with stronger psychometrics and more specific matches of stressors to coping strategies and outcomes are found for low income urban demographics, the recommendation is then for *behavioral avoidant* coping strategies to be studied further as they may affect ethnically diverse, low income urban youth differently depending upon the severity of their violence exposure.

The current study also contributes to a growing literature on distinctions between *behavioral avoidance* and *cognitive avoidance* particularly for low-income urban youth (Gaylord-Harden et al., 2010). One reason for this, as shown in the current study, is because the subscales of *avoidant coping* may be affected differently by exposure to violence. As demonstrated in the current study, *behavioral avoidance* may interact with exposure to violence in leading to mental health outcomes while *cognitive avoidance* may not. To date, only one other study has distinguished between *behavioral avoidant* coping and other *avoidant* coping subscales in examining how they may interact with exposure to violence to predict mental health outcomes (Dempsey et al., 2000). Dempsey and colleagues (2000) also found different effects across two different dimensions of *avoidant* coping.

By testing the proposed models using both a cross-sectional and longitudinal design and comparing similarities and differences between them, this study was the first to compare those differing designs in their effects of exposure to violence as a moderator of the relation between *active*, *behavioral avoidant* and *cognitive avoidant* coping and internalizing and externalizing outcomes among at

risk youth. By making these comparisons, the current study was able to suggest that perhaps internalizing symptoms may be affected in the short-term in its association with *behavioral avoidance* at high levels of exposure to violence. However, this moderation effect does not seem to take place over the long-term. This implies that not only is it important to understand the effects different coping strategies may have at different levels of violence but that immediate effects may differ from long-term ones. Therefore, the current study provides support for the importance of testing coping effects at various time points. Future research is needed to build upon these findings with an exposure to violence measure that distinguishes precisely when stressors are experienced.

This study was the first to test Luthar and colleagues' (2000) protective-reactive, protective-enhancing, and vulnerable-reactive models as theoretical bases for examining whether different levels of exposure to violence may drive internalizing and externalizing outcomes associated with *active* and specific *avoidant coping* strategies (Luthar et al., 2000). To date, researchers have only theorized that coping strategy effectiveness may be better understood within a contextual framework (Tolan & Grant, 2009). Therefore, it is recommended that future studies continue to test Luthar and colleagues' (2000) frameworks at different levels of violence exposure to see if similar patterns of findings arise. In doing so, it is recommended that future studies use coping measures that match coping strategies to specific stressors.

Limitations

While the present study makes a number of important contributions, it is not without methodological limitations. One limitation this study shares with many longitudinal studies is the large amount of attrition at the latter time point. To address this limitation, the data were tested for potential bias in attrition by comparing the respondents who were attrited with those who were not across the demographic and predictor variables included in the analyses (i.e., race, age, gender, exposure to violence, *active coping*, *behavioral avoidant coping*, *cognitive avoidant coping*, internalizing symptoms, and externalizing symptoms). Another limitation is the large amount of missing data particularly parental data which is commonly the case in community samples (Epstein & Dauber, 1991). While the sample originally comprised 391 students and MI was conducted in the current study to maintain this sample number in the analyses, there were only 189 students without any missing data at T1 in the cross sectional analysis and 90 students without any missing data in the longitudinal sample. This is due to the fact that missing data was particularly problematic in the large percentage of missing parental data at T1 (37.60%) and T2 (48.85%) in this study's sample. Unfortunately, there are no specific guidelines on how much attrited and missing data are considered "too much" (Jeličić et al., 2010). Fortunately, even with the large amount of missing and attrited data, MI was able to be conducted which is based on theoretical frameworks for missing data estimation as well as on statistical theory and has been shown to preserve important characteristics of the entire data set (Jeličić et al., 2010). Though this is a recommended approach for

handling missing data over listwise deletion, it would have been ideal to have had less missing data at T1 and T2 (Jeličić et al., 2010).

Other methodological limitations of the present study are similar to those mentioned in prior studies with similar populations as well. For example, the poor internal consistency of the *cognitive avoidant* and *behavioral avoidant* coping measures were generally aligned with previous research (Gaylord-Harden et al., 2010). In addition, it was revealed by the supplemental analyses, that the four-factor structure of the CCSC on the present sample was a poor fit, as found in previous research on low income urban youth (Gaylord-Harden et al., 2011). The present study also revealed the three-factor structure of the CCSC which has been found to be a better fit for low income urban youth, was also not good (Gaylord-Harden et al., 2011). This may be because the three-factor fit has previously been tested solely on African American samples rather than on more ethnically diverse samples such as that of the current study (Gaylord-Harden et al., 2011). It is important for this field of research to first move on to explore measures that match stressors and coping and the logical next step then is to establish metrics for these measures to ensure they are valid for low income and ethnically diverse samples.

It would have been more valid in the current study to measure coping responses as they match onto specific forms of stress. As discussed earlier, by using the KidCope, or other measures such as the Response to Stress Questionnaire (RSQ) that more specifically match stressors with coping strategies, future studies will be more informed on how youth are specifically

responding to specific types of stressors such as violence (Connor-Smith et al., 2000; Dempsey et al., 2000). These measures would have helped to provide a more valid test of the hypotheses set forth in the current study, as well as to bolster the conclusions that could be drawn from assessing them.

Conclusion

Methodological issues currently need to be addressed to further inform how to most effectively equip low income urban youth with effective copings strategies that will help them with specific stressors in the context of urban poverty.

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