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## Community Violence Exposure and Callous-Unemotional Traits in Adolescents: Testing Parental Support as a Promotive Versus Protective Factor

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### Abstract

Although callous-unemotional (CU) traits are associated with maladjustment in youth, literature predicting CU using prospective designs is rare. In the present study we examine associations between exposure to community violence, supportive relationships with caregivers, and CU in a sample of 236 low-income youth ( $M$  age = 13.00 yrs,  $SD$  = 1.56 yrs; 43% male; 92% African American) participating in a 3-wave longitudinal study of violence exposure and adjustment. Both promotive and protective models of linkages between exposure to community violence, support, and CU were investigated. Given known sex differences in CU, sex was explored as a moderator. Regression analysis revealed that witnessing and hearing about community violence, aggregated over 2 waves, were positively associated with CU at the final study wave. Supportive relationships with caregivers, aggregated over 2 waves, were negatively associated with CU but did not interact with violence exposure, suggesting that supportive relationships with caregivers has a promotive but not a protective association with CU in the context of exposure to violence. The pattern of associations did not vary by sex. This study informs our understanding of factors that contribute to the development of CU.

### Keywords

Callous-unemotional traits; community violence; social support

### Introduction

High-risk environments, characterized by features such as violence and limited resources, have a global impact on youth's emotional development (Gerard & Buehler, 2004). Youth living in these communities are exposed to multiple risk factors that hinder their emotional, cognitive, and behavioral functioning which can lead to negative outcomes such as callous-unemotional (CU) traits (Sadeh et al., 2010). Callous-unemotional traits are aspects of a

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child's personality and behavior that include lack of empathy and guilt, flat affect, and difficulty processing emotional stimuli (Scheepers, Buitelaar, & Matthys, 2011). According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), CU traits are an indicator of conduct disorder which is prevalent in 3–9% of the general population of adolescents (ages 13–19). This prevalence is more common in males and delinquent youth (INSERM Collective Expert Reports, 2005). In a community sample of youth ages 5–18, 10–32% of those diagnosed with conduct disorder also displayed CU traits (Kahn, Frick, Youngstrom, Findling, & Youngstrom, 2012). Youth with CU traits often have problems with aggression, delinquent behavior, and severe conduct issues during adolescence which can extend to antisocial and psychopathic traits in adulthood (Barry et al., 2000; Frick, Cornell, Barry, Bodin, & Dane, 2003; Frick & White, 2008).

### **Violence Exposure**

Chronic exposure to community violence can interfere with moral and emotional processing. Youth who are regularly exposed to community violence are more prone to become aggressive and have more cognitive deficits, limiting their ability to cope positively (Kimonis, Ray, Branch, & Cauffman, 2011). Further, researchers have found that lower socioeconomic status is associated with higher levels of CU traits in youth (Sadeh et al., 2010). Youth with CU traits who experience more life stressors, including chronic community violence and poverty, display more continuous conduct problems into adulthood (Frick & Dantagnan, 2005). Some research shows that youth who regularly witness or hear about community violence develop CU traits as a protective coping mechanism; however, this is an inadequate response to emotional stimuli and suggests that these youth have become emotionally desensitized to violence around them (Kimonis, Frick, Munoz, & Aucoin, 2008). The first purpose of the present study was to evaluate the association between exposure to community violence and CU traits.

### **Supportive Relationships with Caregivers**

The parent-child relationship has a strong influence on a child's risk of developing CU traits. Parental warmth is a protective factor against developing CU traits in children, with higher levels of parental warmth associated with lower levels of CU traits (Pardini, Lochman, & Powell, 2007). Youth with CU traits, due to their fearlessness and under-stimulated temperament, may be insensitive to disciplinary cues given by their parents (Pardini et al., 2007). Positive parenting behavior characterized by an emphasis on obedience, consistent discipline, and warmth may demonstrate the best parenting practice for children with CU traits due to their difficulty in recognizing punishment cues (Frick & Viding, 2009). Negative parenting behavior such as inconsistency, poor communication and supervision, low involvement, and variance in degrees of discipline can play causal roles in CU traits in children. Research suggests a positive association between high levels of physical punishment and high levels of CU traits (Hawes, Dadds, Frost, & Hasking, 2011). A second purpose of the present study was to examine associations between parental support and felt acceptance and CU traits. As described below, two competing models of associations between support and CU traits were tested in the study: a protective factors model and a promotive factors model.

## A Protective Factors Model versus a Promotive Factors Model

Protective factors are aspects of an individual or an environment that increase the probability of adaptive functioning in the context of known risk. Thus, in a *protective factors model*, risk interacts with a factor to reduce the negative outcome being investigated (Rutter, 1985, 1990; Rutter, Giller, & Hagell, 1998). This term describes an interaction effect rather than a main effect (Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikström, 2002). In prior studies of youth exposed to violence, protective factors such as positive parenting and support lessened the impact of violence exposure on negative outcomes including internalizing symptoms, aggressive behavior, delinquency, and substance use (Fergus & Zimmerman, 2005; Gorman-Smith, Henry, & Tolan, 2004; Kliewer et al., 2004; Sullivan, Kung, & Farrell, 2004).

In contrast to a protective factors model, a *promotive factors model* focuses on enhancing positive outcomes rather than protecting against adverse outcomes. In a promotive model framework, main effects versus interaction effects are examined. Main effects often are not perceived to be as critical as interaction effects, but from an intervention perspective the information that main effects can provide is equally important (Luthar, Cicchetti, & Becker, 2000). Stouthamer-Loeber and colleagues (2002) examined risk and promotive effects in the explanation of chronic delinquency in adolescent males and found that promotive factors can be targets of interventions to improve the outcomes of at-risk youth. Stoddard and colleagues (2013) examined promotive factors and found that greater family support promoted more positive outcomes and reduced violent behavior in youth. This supports previous research with promotive factors such as family support and community safety enhancing healthy youth development (Youngblade et al., 2007; Gutman, Sameroff, & Eccles, 2002).

Therefore, with a protective factors model we reasoned that parental warmth and support would interact with violence exposure to reduce the likelihood that youth would develop CU traits. We anticipated that parental warmth and support would counteract the negative influence of witnessing and hearing about community violence, reducing the likelihood of developing CU traits. In terms of a promotive factors model, we reasoned that youth with higher levels of parental warmth and support would demonstrate lower levels of CU traits regardless of their exposure to violence, largely because of the sense of acceptance and belonging they derived from the relationship with their caregiver.

### Sex Differences

Researchers have noted few sex differences in youth with CU traits that may affect associations between community violence exposure, parental warmth, and CU traits. Callous-unemotional traits are more common in adolescent males than females, with 5–9% of males and 2–5% of females displaying these traits (INSERM Collective Expert Reports, 2005). Males and females can both develop these negative traits but may display them in different ways. For example, males tend to be more physically violent, whereas females tend to internalize problems more (Webster-Stratton, 1996). In addition to potential biological influences on CU traits, community violence affects males and females differently and possibly moderates the development of these traits (Kimonis et al., 2011). Females are more

likely to develop anxiety and depression as a result of exposure to violence, while males show more distress when victimized violently compared with witnessing violence (Foster, Kuperminc, & Price, 2004). Although there is research suggesting that associations between community violence and CU may differ by sex, this research is limited. Given the limited data, we examined sex differences in associations between community violence exposure, parental support and acceptance, and CU traits in an exploratory manner.

## Summary

The present study examined prospective associations between exposure to community violence, parental acceptance and support, and CU traits in adolescents living in under-resourced neighborhoods. A promotive model versus a protective model of support was tested, and sex was examined as an exploratory moderator.

## Method

### Participants

Participants included 236 youth (Baseline  $M$  age = 13.00 yrs,  $SD$  = 1.55 yrs; Range 11–17 yrs; 43% male; 92% African American) participating in a longitudinal study of community violence exposure and adjustment and who completed all waves of the study. The sample was relatively poor; approximately half of the sample had household incomes of \$400/week or less; 30% of the sample had household incomes of \$601 per week or more. There was diversity in terms of family structure and caregiver education: Most (39.4%) caregivers had never married, 33.4% were married or cohabitating, 25.2% were separated or divorced, and 1.9% were widowed. Approximately a quarter of the caregiver sample (23.1%) had not completed high school. Another 27.9% completed high school or earned a general education degree (GED), 25.0% had some college, and 24.0% had a vocational degree, associate's degree or higher.

### Measures

**Demographics**—Youth reported on their age, sex, and race/ethnicity; maternal caregivers reported on household income, their educational attainment, and family structure.

**Violence exposure**—Violence exposure was assessed at baseline and one year later with two subscales of the *Survey of Exposure to Community Violence* (Richters & Saltzman, 1990): witnessing community violence and hearing about community violence. Youth reported on their past year exposure using a scale from (0) *never* to (4) *every day*. The witnessing violence subscale contained 20 items (e.g., “seen someone threatened with serious physical harm”); the hearing about violence subscale contained 16 items (e.g., “only heard about someone being chased by a gang or older kids”). This exposure measure has been widely used and validated (cf., Fowler et al., 2009). Based on strong correlations between witnessing and hearing about violence across waves ( $r_s = .61$  to  $.77$ ), these subscales were standardized and added to compute a total exposure to violence score.

**Supportive relationship with caregivers**—Supportive relationships with caregivers were assessed at baseline and one year later using two measures: an 8-item form of the

*Network of Relationships Inventory - Revised* (NRI-R; Furman & Buhrmester, 1985) and the 20-item felt acceptance subscale of the *Children's Report of Parent Behavior Inventory* (CRPBI; Schaefer, 1965). The NRI-R assessed perceived support from caregivers. Items (e.g., "How much can you count on MOM to be there when you need her no matter what?") were rated on a scale from 1 (little or none) to 5 (the most possible). Reliability and validity of the measure is good (Furman & Buhrmester, 1985). Cronbach alphas in the present study were .91 at Wave 1 and .92 at Wave 2. The CRPBI assessed felt acceptance from the caregiver. Items (e.g., "Understands your problems or your worries" or "Enjoys spending time with you") were rated on the following scale: 1 = *a lot like*, 2 = *somewhat like* and 3 = *not like*. A majority of the items were reversed scored so that higher scores indicated higher perceived levels of felt acceptance. This widely used measure has good reliability and validity (Schaefer, 1965). Cronbach alphas in the present study were .89 at both waves. Based on strong correlations between support and felt acceptance across waves ( $r_s = .46$  to .69), these subscales were standardized and added to compute a total support score.

**Callous-unemotional traits**—Callous-unemotional traits were self-reported at the final study wave using the 11-item *Inventory of Callous-Unemotional Traits* (ICU; Frick, 2003; Essau, Sasagawa, & Frick, 2006). Items (e.g., "I do not care who I hurt to get what I want") were rated on a 4-point scale from 1 (not at all true) to 4 (definitely true). This measure has good reliability and validity (Essau et al., 2006). Cronbach alpha in the present study was .74.

## Procedures

The Institutional Review Board at the authors' institution approved all study procedures. Participants were recruited from neighborhoods within (city and state blinded for review) and the neighboring counties with high levels of violence and/or poverty according to police statistics and 2000 census data. The study was advertised through community agencies and events, and by canvassing qualifying neighborhoods via flyers posted door-to-door. Interviews were scheduled annually for four waves, and were conducted primarily in participants' homes by trained research staff. Only one child per household was eligible to participate in the study. Sixty-three percent of eligible participants agreed to be in the study, which is consistent with studies using similar designs and populations. Sixty-nine percent of the original sample was retained across the entire study. Only data collected during the 2nd, 3rd, and 4th waves was used in the current study. However, to reduce confusion we refer to data in the current study as Waves 1, 2 and 3. Interviewers thoroughly reviewed the parent consent forms with the family. A Certificate of Confidentiality was obtained from the National Institutes of Health (NIH) to protect families' responses. Tests for the effects of interviewer race and gender revealed no systematic biases,  $p_s > .10$ . Interviews lasted approximately 2.5 h and participants received \$50 in gift cards per family at each wave.

## Results

### Attrition Analyses and Descriptive Statistics

The effect of attrition was assessed by comparing participants who provided data at all waves ( $N = 247$ ) to those who only provided data at Wave 1 ( $N = 72$ ). There were no

significant differences between groups on violence exposure or felt acceptance at baseline. There was a marginally significant difference on ratings of support from mother,  $t(314) = 1.91, p < .10$ . Participants who left the study were marginally more likely to report more negative perceptions of support from their maternal caregiver. Additionally, participants who left the study were more likely to be male,  $t(316) = 2.37, p < .05$ , and marginally more likely to be older,  $t(316) = 1.85, p < .10$ .

Descriptive statistics, means, standard deviations, and correlations were examined among study variables (see Table 1). The callous-unemotional traits variable was log transformed due to skewness. As seen in the table, callousness was positively associated with violence exposure and negatively associated with support.

### Regression Analysis

A regression analysis was used to evaluate the main study hypotheses (see Table 2). Continuous-level predictor variables (violence exposure and support) were centered and 2- and 3-way interaction terms were computed from the centered variables (Aiken & West, 1991). Age, child sex, household income, and caregiver education were entered in the models first, followed by main effect terms of violence exposure and support/acceptance. Two-way interaction terms (violence X support, violence X sex, support X sex) were entered in the next step. The three-way violence X support X sex interaction term was entered on the final step. The presence of multivariate outliers was tested with Cook's D distance measure (Cook & Weisberg, 1982); no outliers were identified. The overall model was significant,  $F(10, 223) = 3.92, p < .001, R^2 = .15$ . As seen in Table 2, in addition to age, which was negatively associated with CU traits, violence exposure was positively associated and support/acceptance was negatively associated with CU traits. However, none of the interaction terms were significant. This indicates that a supportive relationship with one's maternal caregiver has a promotive, but not a protective, effect in the relation between exposure to community violence and callous-unemotional traits. Further, this pattern of findings applies equally well to males and females.

### Discussion

Prior prospective research examining predictors of CU traits in youth is limited (Frick et al., 2003; Frick & Dantagnan, 2005; Frick & White, 2008; Pardini et al., 2007). Our study is among the first to investigate the interaction of exposure to violence and parental warmth on CU traits and to test promotive versus protective factors competing models with these variables. In the present study we examined exposure to community violence and the role that supportive relationships with caregivers have in the development of CU traits in a community sample of low-income youth.

Our findings demonstrated the importance of both positive familial and neighborhood environments in the promotion of healthy outcomes in youth affected by community violence. We tested two competing hypotheses, one supporting a promotive factors model and one supporting a protective factors model. Our data provided support for the promotive factors model. Youth living in low-income communities with higher levels of support and warmth from caregivers – regardless of the extent to which they witnessed or heard about

community violence -- were less likely to report CU traits. Conversely, higher levels of violence exposure placed youth at increased risk for the development of CU traits; parental support and warmth did not attenuate this risk.

What can we learn from the main effects model supported in this data and in similar studies? As noted by Luthar et al. (2000), main effects models can help us understand how youth affected by adversity, such as living in poverty, can positively adapt and progress with positive promoters such as family support. As suggested by Stouthamer-Loeber and colleagues (2002) it may not be possible to remove all possible risks in an environment, but strengthening promotive factors will improve outcomes especially in environments ridden with violence and limited resources.

Another general implication of a promotive factors approach is a focus on health promotion and enhancement of well-being rather than prevention of psychological and social problems. This positive promotion technique is equally substantial as preventative intervention. To further support the promotive model, Luthar and colleagues (2000) state, "for the scientist who seeks to foster positive adaptation among a group that typically shows negative outcomes, the central task is to determine what allows some of these youngsters to do well" (p. 573). In the context of the present study, one might work on strategies to strengthen parent-child bonds. Many family-focused approaches to prevention do just that. An exemplar is the Social Development Model (SDM)(Hawkins & Weis, 1985) which argues that strong social bonds with the family prior to beginning school are foundational, and shape attachments and commitments to people and institutions with conventional values (Kliewer & Zaharakis, 2014).

In regards to sex differences, our study showed that patterns of associations were similar across sex. Although CU traits are more common in males than females, in this low-income, largely minority sample violence exposure appeared to have the same association with CU traits for both sexes. Similarly, support and acceptance from caregivers was negatively associated with CU traits to the same degree for males and females in our model. Prior research examining sex differences in constructs that are associated with CU traits has found mixed results. For example, Espelage and Low (2014) found that males and females have similar levels of parental involvement and monitoring which can result in similar levels of delinquency and other characteristics related to CU trait development. There is also inconclusive evidence of how community violence may affect males and females differently (Fowler et al., 2009). These findings suggest that further examination is needed to understand why environmental influences on maladjustment may differ across sex in some samples and not in others.

### **Implications for future research**

Given that parental warmth and support was a promotive factor in the present study, interventions to increase parent-child bonding are important to investigate (Patrick, Snyder, Schrepferman, & Snyder, 2005). Our study stresses the need to evaluate and disseminate empirically-supported strategies that can help strengthen the parent-child relationship as a promoter of healthy development and outcomes (Grebelsky-Lichtman, 2014). Further, research on genetic predispositions for the development of CU traits in youth needs to be

assessed in regards to parental CU traits affecting youth development. Further research is needed to examine positive coping mechanisms in response to community violence and implement parental facilitation of teaching these positive coping mechanisms to youth. Lastly, a primary prevention strategy to eliminate the amount of community violence witnessed and experienced by youth would be of utmost value.

### Study limitations

Our study was limited in that we only had data for CU traits in the final wave of our study. Thus, we assessed levels of community violence in multiple waves, but only examined CU traits in the present versus possible changes in CU traits over time. Future research with data on CU traits measured longitudinally could further support and build on our findings. Our study only examined maternal warmth and support; therefore other dimensions of the caregiver relationship might work as a protective factor against the development of CU traits. The current study was a community sample focusing on African-American youth making generalizability across other samples difficult. Future research might examine other populations to determine if similar factors influence the development of CU traits.

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### Highlights

- Exposure to violence was positively associated with callous-unemotional (CU) traits
- Parental support was negatively associated with callous-unemotional (CU) traits
- Patterns of study findings did not differ for males and females
- Both home and neighborhood environments are important in CU trait development

**Table 1**

Descriptive information on and correlations among study variables

	1	2	3	4	5	6	7	8
1 – Violence exposure (W1 & W2)	--	-.13*	.20**	.03	.15*	-.23***	-.28***	-.04
2 – Support and acceptance (W1 & W2)		--	-.24***	-.14*	-.20**	.04	0	.06
3 – Callous-Unemotional traits <sup>b</sup> (W3)			--	.13 <sup>+</sup>	-.12 <sup>+</sup>	-.10	-.12 <sup>+</sup>	-.13 <sup>+</sup>
4 – Child sex				--	-.03	.03	.05	-.06
5 – Child age					--	-.08	0	.01
6 – Maternal education						--	.30***	.18**
7 – Household income							--	.41***
8 – Family structure								--
Mean	-.20	.07	.70	43% male	13.00	Mdn high school	Mdn \$401–500/wk	32% two-parent
SD	3.16	3.20	.28		1.56			

Note. *N* = 234.

<sup>b</sup> Variable was log transformed due to skewness. W1 = Wave 1; W2 = Wave 2; W3 = Wave 3. Sex was coded 0 = female, 1 = male. Family structure was coded 0 = single-parent family, 1 = two-parent family.

<sup>+</sup> *p* < .10;

\* *p* < .05;

\*\* *p* < .01;

\*\*\* *p* < .001.

**Table 2**

Summary of Hierarchical Multiple Regression Analysis Predicting Callous-Unemotional Traits from Community Violence Exposure, Parental Acceptance and Support, and Controls

Predictor	Unstandardized B	SE B	Standardized b
Child sex	.045	.037	.077
Child age	-.032	.012	-.166**
Household income	-.006	.007	-.056
Caregiver education	-.006	.009	-.047
Violence exposure	.015	.007	.166*
Support/acceptance	-.030	.008	-.330***
Violence x Support	.002	.003	.077
Sex x Violence	-.003	.012	-.023
Sex x Support	.019	.012	.145
Sex x Viol x Support	.001	.004	.013

Note.  $R^2 = .15$ .  $F(10, 233) = 3.92$ ,  $p < .001$ . Terms are from the final step of the regression equation.

\*  $p < .05$ ;

\*\*  $p < .01$ ;

\*\*\*  $p < .001$ .