

running head: YOUTH VIOLENCE EXPOSURE AND RESPONSE

THE RELATIONS OF VIOLENCE EXPOSURE,  
TRAUMA SYMPTOMS AND AGGRESSIVE COGNITIONS  
TO YOUTH VIOLENT BEHAVIOR

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by  
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THE RELATIONS OF VIOLENCE EXPOSURE,  
PTSD SYMPTOMS AND AGGRESSIVE COGNITIONS  
TO YOUTH VIOLENT BEHAVIOR

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THE RELATION OF VIOLENCE EXPOSURE, TRAUMA SYMPTOMS,  
AND AGGRESSIVE COGNITIONS TO YOUTH VIOLENT BEHAVIOR

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ABSTRACT

Adolescents in the United States are disproportionately represented among both the victims and the perpetrators of violent crimes (U.S. Department of Justice, 2002). Studies show that previous exposure to violence, regardless of the ecological context (e.g., family, community, sociopolitical violence), is a strong predictor of aggression and delinquency in youth. Likewise, studies have shown that youth who are exposed to violence report higher levels of posttraumatic stress disorder (PTSD) symptoms, aggressive cognitions, and other adjustment problems as compared to youth not exposed to violence. There is also evolving evidence that youth who develop PTSD following violent traumas might be at increased risk for aggressive and delinquent behaviors. Utilizing a socio-cognitive framework, this study examined the possible mediational roles of PTSD symptoms and aggressive cognitions in the cycle of violence (exposure-perpetration). This study also examined whether the strength of the violence-exposure /violent-behavior relationship varied across context of exposure and across sex.

Participants were 124 pre- and early-adolescents from two school districts in the Midwest. Findings indicate that there is a strong positive correlation between violence exposure in the community and at home. Findings also show that violence exposure was significantly related to PTSD symptoms, aggressive cognitions, and aggressive and



delinquent behaviors in youth. PTSD symptoms and aggressive cognitions were both significant mediators in the cycle of violence but had differential effects across each violence context, as well as different mediational effects for boys and girls. This data suggest that interventions in the exposure-perpetration cycle require adaptability to allow for optimal utilization across communities, households, and sex of participants.

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## INTRODUCTION

Recent studies have shown that adolescents in the United States are disproportionately represented among both the victims and the perpetrators of violent crimes (U.S. Department of Justice, 2002). Not surprisingly, studies have also shown that previous exposure to violence is a strong predictor of perpetration of violence, accounting for as much as 22% to 47% of the variance (Bell & Jenkins, 1993; Brown, Henggeler, Brondino & Pickrel, 1999; DuRant, Cadenhead, Pendergrast, Slavens & Linder, 1994; Johnson, 1999; Singer, Anglin, Song & Lunghofer, 1995; Song, Singer & Anglin, 1998). The relationship between violence exposure and violent behavior exists regardless of the ecological context in which the violence occurs. For example, youth violent behavior has been associated with witnessing marital violence (O'Keefe, 1994), child maltreatment (DuRant et al., 1994; Pelcovitz et al., 1994; Widom, 1989), community violence (Bell & Jenkins, 1991), and to a lesser extent war violence (see Jensen & Shaw, 1993). Thus, further examination of the sequelae of youth exposure to violence might be important to our understanding of the current trends in youth perpetration of violence. Furthermore, our identification of and interventions for youth at-risk for violent behaviors might be enhanced as a result of examining how the ecological contexts of violence exposure (e.g., home, community, sociopolitical contexts) influence emotional and behavioral responses in youth.

Despite the observed association between violence exposure and violent behavior, clearly not all youth exposed to violence go on to commit violent acts. Moreover, theoretically several different pathways may exist between violence exposure and violence commission. One pathway identified by social learning and social cognitive

theorists is the possible alteration of youth cognitive processes through their experience of violence (Bandura, 1973; Dodge, Bates & Pettit, 1990; Patterson, 1982). For example, children exposed to violence often learn (experientially or vicariously) that coercive and aggressive behaviors serve an instrumental function for meeting their needs and avoiding aversive stimuli (Patterson, 1982). Another model suggests that specific cognitive, emotional, and behavioral maladjustments that arise from exposure to violence might leave children vulnerable to exhibiting violent behavior (e.g., participation in gang violence) (Dodge et al., 1990; Garbarino, 1995; Steiner, Garcia & Matthews, 1997). For example, Steiner et al. (1997) suggest that there might be links between exposure to traumatic violence, posttraumatic stress disorder (PTSD), and violent and aggressive behaviors.

Although both social-cognitive and ecological theories suggest potential third variables in the relationship between violence exposure and violent behavior, most studies have examined only bivariate relationships. Thus, the mechanisms involved in the violence exposure-perpetration relationship are not yet clear, and it is unknown if the magnitude of the exposure-perpetration relationship is consistent across contexts of exposure. A review of the existing literature highlights the potential third variable roles of trauma symptoms and aggressive cognitions in the sequelae of trauma experience and trauma response/reenactment. Identifying the specific functions of these potential third variables might allow greater integration of these factors into existing clinical and socio-ecological interventions aimed at minimizing violence.

This paper will first review the literature regarding youth exposure to violence and youth post-trauma violent behaviors. Second, theoretical perspectives and empirical

evidence will be reviewed related to the mediational roles of symptomology (e.g., PTSD) and cognitive styles related to violence exposure, trauma response, and commission of violence. Finally, a study examining the mediating roles of post-trauma symptoms and cognitions in the relation between violence exposure and violent behavior will be presented. The conceptual model in Figure 1 posits that PTSD symptomology and aggressive cognitions are positively related to both violence exposure and violent behaviors and that both PTSD symptoms and aggressive cognitions mediates the exposure-perpetration relationship.

#### *Prevalence of Youth Violence Exposure across Ecological Contexts*

In the United States, violence exposure can generally be divided into two broad contexts: violence that occurs within the family home, and violence that occurs in the community (e.g., in schools and neighborhoods). However, in addition to youth exposure to family and community violence, some urban areas (e.g., St. Louis, Boston, Chicago, Minneapolis) serve as cities of refuge for youth and families exposed to war violence in foreign countries. Thus, a thorough investigation of youth reactions to violent trauma should account for a broad range of violent experiences, including family, community, and war exposure. Nonetheless, a review of the literature indicates that these three types of trauma experiences have been essentially relegated into three separate bodies of research. Here, summaries of the prevalence of each type of exposure experience are presented along with the prevalence associated with being victimized by versus witnessing each type of violence.

*Family Violence*

Although robust epidemiological studies are not available, it has been estimated that each year more than three million children witness partner abuse, in which their mothers are most often the target of the assault (Carlson, 1984). Lifetime estimates suggest that, “at least a third of American children have witnessed violence between their parents,” with most being witness to multiple episodes of parental abuse (Straus & Gelles, 1990, p. 98). Moreover, 10% of the 7 year-olds sampled in one study reported that they had witnessed someone get shot or stabbed in their homes (Hurt, Malmud, Brodsky & Giannetta, 2001).

In addition to children’s high rates of witnessing violence within their families, it is estimated that approximately 879,000 children were victims of abuse or neglect in 2000 alone, of which 19.1% were physically abused and 10.1% were sexually abused (National Child Abuse and Neglect Data System). Although younger children were more at risk for child maltreatment, youth aged 12 and older accounted for almost 25% of the total number of maltreated children. Despite this documentation that vast numbers of children, including teenagers, are victims of physical and sexual abuse each year, some sources predict that these data represent an underestimate of the true prevalence of child maltreatment. Thus, it is not surprising that higher rates of exposure to physical victimization within the home are reported by non-referred samples of youth as compared to governmental reports. In Singer et al.’s (1995) study of violence exposure among high school adolescents from urban, small city, and suburban areas, 28.5% (suburban boys) to 55.2% (small town girls) reported that they had been hit, slapped or punched at home at least once during their lifetime.



*Community Violence*

Research regarding the prevalence of community violence often includes questions related to violence that occurs within the family home; thus, it is difficult to clearly identify rates of violence that occurs at the neighborhood level only. However, taken together, youth exposure to community violence has been described as a public health epidemic, with as many as 80% to 93% of sampled youth witnessing community violence, and 35% to 70% being victimized (Bell & Jenkins, 1993; Berman, Kurtines, Silverman & Serafini, 1996; Fitzpatrick & Boldizar, 1993; Horowitz, Weine & Jekel, 1995; Martinez & Richters, 1993; Singer et al., 1999). To illustrate the severity of the violent experiences, inner-city studies of primarily African American youth who reside in or around low-income housing have shown that 31% to 67% were witness to shootings, 11% to 47% were targets or victims of shootings, and 9% to 45% were witness to murders (Jenkins & Bell, 1994; Richters & Martinez, 1993). In addition, 12% of the Southside Chicago area youth in Jenkins and Bell's (1994) study had witnessed the death or serious injury of a sibling or a parent, and most (70%) reported that they knew of a friend or family member who had been victimized by rape, robbery, shooting, stabbing, assault or murder.

Although rates of violent crime are consistently greater within urban areas than in non-urban areas, youth residing in non-urban areas also report high levels of exposure to violence. Singer et al.'s (1995) study found that more than 25% of 862 "small city" youth had witnessed at least one shooting, and about the same percentage had witnessed a knife attack or a stabbing. In a follow-up study, Slovak and Singer (2002) found that a substantial percentage of rural area 3rd through 8th graders (primarily Caucasian)

reported being punched, hit, or slapped at home (45.1%) and school (40.1%), and being shot or shot at (9.2%). Giaconia et al. (1995) found lower rates of violent trauma exposure (20%) among 384 high school students (99% Caucasian) from working class or lower-middle class families, but nonetheless, these findings indicate that children from all communities are vulnerable to violent trauma.

### *War Violence*

Exposure to war violence has largely been associated with combat veterans, but it has been estimated that approximately 80% of the victims of war are women and children (UNICEF, 1986). Youth exposure to war is marked by experiencing losses, as well as witnessing and being victimized by many different types of war atrocities, including witnessing graphic and sometimes grotesque casualties either in person or through the media. In a study of Sarajevan children and adolescents exposed to the Bosnian war, almost 80% of the 791 children studied experienced the death of a family member or a friend as a result of the war. In addition, more than 70% reported that they had experienced shooting at close ranges, more than 30% had been exposed to sniper fire, and more than 20% had witnessed someone being killed (Allwood, Bell-Dolan & Husain, 2002). Similarly, children who were victims of either the Cambodian, Kuwaiti, or Rwandan wars reported high levels of exposure to violence, including witnessing murders and having their lives threatened (Dyregrov, Gupta, Gjestad & Mukanoheli, 2000; Nader & Pynoos, 1993; Sack et al., 1993). For example, 65% to 70% of the children surveyed after the Kuwaiti and Rwandan wars had directly witnessed killings, and injured or dead bodies (Dyregrov et al., 2000; Nader & Pynoos, 1993). In one of the largest examinations of children's exposure to war violence, researchers found that in

Rwanda, 35.6% of the more than 3,000 children surveyed had witnessed a family member being killed, and 52.5% witnessed multiple people being killed in massacres. In addition, 16% of the children interviewed reported that they had to hide under dead bodies in order to survive the killings (Dyregrov et al., 2000).

Overall, a large percentage of children are exposed to violent traumas, with many being exposed to multiple traumatic events. Separate reviews of the child maltreatment, community violence, and the war exposure literatures indicate that youth exposure to violence has been associated with both internalizing and externalizing adjustment problems, including anxiety, depression, PTSD, developmental delays, school failure, substance use, and aggression and delinquency (see Jensen & Shaw, 1993; Margolin & Gordis, 2000). However, many studies of youth response to violence are conducted with referred samples with few studies examining the extent of adjustment problems in non-referred youth.

#### *Relation between Violence Exposure and Violent Behavior*

The relation between violence exposure and the perpetration of violence and aggression against others has been documented in several studies (Bell & Jenkins, 1991; Burton, Foy, Bwanausi, Johnson & Moore, 1994; Farrell & Bruce, 1997; Flannery, Singer, Williams & Castro, 1998; Flannery, Singer & Wester, 2001; Jenkins & Bell, 1994; Lipschitz, Rasmusson, Anyan, Cromwell & Southwick, 2000; Pelcovitz et al., 1994; Widom, 1989; Williamson, Borduin & Howe, 1991). In a pioneer study, Widom (1989) showed that adult outcomes, such as arrests for violent crimes, were linked to childhood exposure to family violence. However, the violent exposure-violent behavior link has

been found for both referred and non-referred youth across multiple contexts of violence exposure.

### *Family Violence*

Children who witness family violence often exhibit signs of aggression and other externalizing symptoms (Flannery et al., 1998; Singer et al., 1999). Exposure to recent violence within the home significantly predicted violent behaviors in elementary and middle school students (Singer et al., 1999), and high levels of home violence also predicted violent behaviors in high school students (Flannery et al., 1998). Consistent with studies of child witnesses to family violence, linkages have been found between intra-family victimization and violent behaviors in children. Dodge et al. (1990) found a significant positive relationship between physical abuse of preschool children and violence towards peers during Kindergarten, even after controlling for sex, socioeconomic status, witnessing violence in the home, and child and maternal health problems during pregnancy and birth. Other researchers have found similar patterns. For example, childhood abuse has been associated with adolescent violence (Benda & Corwyn, 2002), and violent behaviors and arrests in adulthood (Widom, 1989).

### *Community Violence*

As stated earlier, community violence studies often ask youth about exposure to violence across many domains; home, school, and neighborhood. Thus, the findings regarding community violence exposure and associated behaviors and symptoms are often confounded with family violence exposure, and should be interpreted cautiously. Moderate relationships between exposure to community violence and self-reported violent behaviors have been found, with variance accounted for ranging from 22% to

47% (DuRant et al., 1994; Song et al., 1998). Of note, Song et al. (1998) found that in his sample of more than 3000 ethnically diverse adolescents, demographic variables, such as age, race/ethnicity, parental education, and family composition only accounted for 1% of the variance in violent/aggressive behavior after controlling for exposure to violent events. Investigations of incarcerated youth have yielded similar findings regarding the relation of violence exposure and violence commission. Higher rates of violent crimes have been found for youth exposed to physical abuse and inter-adult violence as compared to non-exposed youth (Spaccarelli, Coatsworth & Bowden, 1995). Indeed, in one study, about half of the sample of 85 adolescent boys incarcerated for primarily violent offenses had been exposed to the killing of a family member or a friend (Steiner et al., 1997). Of interest, half of Steiner et al.'s sample experienced symptoms of PTSD, with about one-third of the sample meeting the full diagnostic criteria.

#### *War Violence*

To date, few studies have examined the relationship between war exposure and child aggression. Among the few empirical studies, mothers have reported higher levels of screaming, hitting and kicking among war-traumatized children as compared to non-traumatized children (Chimienti, Nasr & Khalifehi, 1989), and 9.3% to 11.5% of war-exposed children have met criteria (98 percentile) for clinically significant aggression as measured by the Child Behavior Checklist and Teacher Report Form (Allwood, Bell-Dolan & Husain, 2000; Mollica, Poole, Son, Murray & Tor, 1997).

*Potential Mediators and Moderators in the Relation  
between Violence Exposure and Violent Behaviors*

*Post-Trauma Symptoms as Mediators*

Posttraumatic stress reactions have been conceptualized as alternating phases of increased arousal (e.g., anxiety) and “emotional numbing and constriction of ideas” (Horowitz, 1993; p. 49). Such emotional dysregulation might play a very important role in the relationship between violence exposure and violent behaviors. Specifically, the emotional disengagement and hyperarousal associated with PTSD might partially mediate the relation between trauma exposure and violent behavior in youth.

*Current conceptualization of PTSD.* The Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV; APA, 1994) defines traumatic experiences as events in which “the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others” and “the person’s response involved intense fear, helplessness, or horror” (pp. 427-428). For a diagnosis of PTSD, the individual must have been exposed to a traumatic experience (criterion A) and must exhibit a constellation of symptoms that meet criteria in three symptom clusters; re-experiencing, avoidance-numbing, and arousal (APA, 1994).

Re-experiencing (criterion B) refers to intrusive symptoms that are related to recalling or “reliving” the traumatic event (e.g., intrusive thoughts, feelings or images about the event, flashbacks, nightmares). This criterion is met if any one of several re-experiencing symptoms is present. The avoidance-numbing cluster (criterion C) refers to avoidance of thoughts and feelings associated with the event and emotional

disengagement (e.g., avoidance of reminders, detachment from others). Deliberate efforts to escape aspects of the trauma are more closely related to avoidance, whereas numbing includes diminished emotional responses such as restricted affect and detachment (APA, 1994). This criterion requires that at least three avoidance or numbing symptoms are present. Arousal symptoms (criterion D) are primarily physiological in nature and are associated with the inability to regulate cognitive, behavioral, or affective responses (e.g., difficulty concentrating, hyperalertness, and emotional outbursts). Two symptoms are required for this criterion. The roles of emotional numbing and arousal might be particularly salient in the violent exposure-behavior relationship. Conceptually, the emotional disengagement and hyperarousal often seen with PTSD might be associated with the lack of empathy and impulsivity seen in many conduct disordered youth.

Although the possible mediational roles of numbing and arousal have not been tested directly, emotional detachment has been linked to violent crimes (Steiner et al., 1997), and a previous examination of children exposed to war has shown a moderate positive association between arousal symptoms and aggression (Allwood et al., 2000). In addition, Ruchkin, Schwab-Stone, Kuposov, Vermeiren and Steiner (2002) found that in a sample of 370 incarcerated Russian youth, trauma symptoms partially mediated the relationship between violence exposure (as witness or victim) and self-reported delinquent and aggressive behaviors as measured by the Youth Self Report (Achenbach, 1991). However, Farrell and Bruce (1997) found that post-trauma distress did not mediate the relationship between violence exposure and violent behavior as measured over three occasions. Of note, Farrell and Bruce's study of primarily low-income African American youth, had several methodological shortcomings, 1) distress was measured by six items

of general anxiety and depression (e.g., “I worry too much about things that aren’t important”), and 2) violent behavior was measured by the presence and frequency of only four behaviors within a 30 day period (e.g., “been in a fight in which someone was hit,” “threatened to hurt a teacher”). The limited conceptualization of post-trauma distress and post-trauma violence in the latter study might account for the null finding. Therefore, the specific role of PTSD symptoms in the violence exposure violent behavior link requires further study.

#### *Aggressive Cognitions as a Mediator*

Likewise, the cognitive factors associated with post-trauma distress are also in need of further study. Current cognitive developmental models suggest that exposure to violence may alter cognitive processes in two ways that increase youth’s vulnerability to subsequent violent behaviors. First, the social information processing model suggests that exposure to violence may result in processing biases, such as aggressive attention biases and hostile attribution biases which may in turn lead to aggressive behaviors (Coie & Dodge, 1997; Shahinfar, Kupersmidt & Matza, 2001). For example, maltreated children have been shown to be more vigilant to aggressive stimuli (Reider & Cicchetti, 1989; Steinberg & Dodge, 1983) than non-maltreated children, and in one study of preschoolers, social information processing variables were shown to fully mediate the relationship between physical abuse and later violent behaviors with peers (Dodge et al., 1990). In support of the social information processing mediational model, Dodge and colleagues (1990) state, “... early physical harm has its effect on a child’s aggressive behavioral development largely by altering the child’s patterns of processing social information” (p. 1682).



Second, the social learning model posits that youth exposed to violence may learn that violence serves an instrumental function and may consequently develop a cognitive style in which violence is a permissible way of getting what is wanted and/or needed (Bandura, 1973; 1986; Patterson, 1982). Empirical support has also been found for this theory. In a sample of adolescent males incarcerated for violent crimes ( $n = 213$ ), Spaccarelli et al. (1995) found that boys who had been exposed to family violence expressed the belief that the use of violence enhanced their reputation or self-image much more so than boys who were not exposed to such violence. Funk, Elliott, Urman, Flores, and Mock (1999) also demonstrated that youth who were victimized by violence had higher pro-violence attitudes than youth not victimized by violence.

In one of the few studies to directly examine the potential mediational role of cognitive processes, Schwartz and Proctor (2000) employed a structural equation model in which they examined the relations of violence exposure to aggressive behaviors with social-cognitive biases as a mediator. Schwartz and Proctor (2000) found that social-cognitive biases were a significant mediator for 4<sup>th</sup> through 6<sup>th</sup> grade youth who witnessed violent behavior. However, the mediational effects were not significant for youth who were victimized by violence. Conversely, Halliday-Boykins and Graham (2000) found that incarcerated youth's aggressive beliefs and hostile attributional biases were positively associated with violent victimization and violent behavior. Yet, no relationship was found for aggressive beliefs or hostile attributional biases with witnessing violence or vicarious violence exposure. The conflicting patterns found in these two studies might be partly due to sampling differences (e.g., community versus incarcerated youth).

*Potential Relations between Trauma Symptoms and Aggressive Cognitions*

Although the exact mechanisms involved in post-trauma cognitive biases are unknown, Schachter's two-factor theory may provide some links. Schachter's theory posits that under ambiguous circumstances, physiological arousal can be experienced as either anger or euphoria (as cited in Bandura, 1986). In addition, youth anxiety has been associated with hostile attributions of ambiguous situations (Bell-Dolan, 1995).

Conceptually, for youth with histories of violence exposure, the arousal symptoms that are common to PTSD might be interpreted as anger brought on by provocation. Thus, PTSD symptoms might have a direct relationship with aggressive cognitive biases, which in turn might be linked to post-trauma aggressive behaviors. Indeed, using a stepwise regression analysis, Lehmann (1997) demonstrated that adding negative attributions after the trauma exposure predictors accounted for an additional 54% of the variance between violence exposure and trauma response.

*Sex and Sexual Violence as Potential Moderators*

Research regarding sex differences in rates of violence exposure and trauma reactions yielded mixed findings. Some studies have found that women and girls experience higher levels of PTSD than boys (Breslau & Davis, 1992; Cuffe et al., 1998), whereas other studies have suggested that sex differences in rates of PTSD are largely accounted for by differences in the incidence and types of trauma experiences (Cauffman, Feldman, Waterman & Steiner, 1998). Differential exposure and differential rates of PTSD have been found for youth exposed to family and community violence (Cauffman et al., 1998; Flannery et al., 1998; 2001), but few studies have examined sex differences in youth's experiences of war.

In community studies, girls have been shown to experience higher rates of domestic and interpersonal violence (e.g., childhood physical abuse, adolescent and adult partner abuse) and sexual violence than their male counterparts (Breslau, Chilcoat, Kessler, Peterson & Lucia, 1999; Flannery et al., 1998; Horowitz et al., 1995; Kessler, Sonnega, Bromet, Hughes & Nelson, 1995; Lipschitz et al., 2000). In addition, contextual differences in violence exposure have been found for boys and girls. High school girls who had a history of dangerously violent behaviors (e.g., shot at, shot, or stabbed someone) were more likely than boys to have been witness to and victimized by violence in their home, whereas similarly violent boys were more likely than girls have been victims of neighborhood and school violence, and more likely to have witnessed neighborhood violence (Flannery et al., 2001).

In accordance with the differential exposure conceptualization, studies repeatedly have indicated that girls experience sexual violence at a rate at least three times that of boys, (Boney-McCoy & Finkelhor, 1995; Cuffe et al., 1998; Finkelhor & Dziuba-Leatherman, 1994) and that sexual violence is associated with higher rates of PTSD than non-sexual violence (Boney-McCoy & Finkelhor, 1996; Breslau & Davis, 1992; Giaconia et al., 1995). Giaconia et al. (1995) found that adolescents who reported a history of rape were seven times more likely to meet diagnostic criteria for PTSD than adolescents who experienced all other traumas (e.g., physical assault, witnessing violence, sudden injury, etc.) combined. On the other hand, in a study that examined non-PTSD mental health variables, sexual violence was associated with internalizing problems, whereas exposure to non-sexual violence was associated with criminal behavior (Brown et al., 1999). These findings are also consistent with studies examining

sex differences in trauma responses, where girls have been found to report more crying behavior and PTSD symptomology and boys have reported more externalizing symptoms, such as violent behavior (Flannery et al., 1998). Conceptually, the higher rates of exposure to sexual violence might account for some of the sex differences in rates of PTSD among youth exposed to family, community, and war violence.

In brief, the few studies that have examined the ecological context of violence exposure have indicated that girls are more likely to be exposed to violence within the family (e.g., interpersonal family violence, sexual abuse), whereas boys are more likely to be exposed to violence within the community (Flannery et al., 2001). Studies also show that sexual and interpersonal victimization are related to higher rates of PTSD than are other forms of trauma exposure (Breslau & Davis, 1992; Giaconia et al., 1995). In addition, studies show that girls experience higher levels of PTSD symptoms (Cauffman et al., 1998, Flannery et al., 1998) and lower levels of violent behavior (Flannery et al., 1998) than do boys. Thus, studies examining children's response to violence exposure should consider sex as a covariate.

### *Summary*

In conclusion, a vast number of youth in the United States experience traumatic events including exposure to family, community, and political violence. Within the last decade the effects of youth violence exposure have received increased epidemiological and clinical attention. However, youth violence exposure remains a largely under studied area or research, with most studies focusing on prevalences and bivariate relationships. In addition, the literature is highly reliant on information from referred samples (e.g., sheltered, incarcerated, clinic patients). Nonetheless, violence-exposed youth have been

shown to exhibit symptoms of PTSD, aggressive cognitions, aggressive behaviors, and other maladaptive responses. Social cognitive theories suggest that post-trauma changes in emotional and cognitive processes may mediate the relationship between violence exposure and violent behaviors. Socio-ecological theory suggests that several individual and contextual factors may also serve as moderators in the exposure-perpetration relationship (Dishion & Patterson, 1997). Indeed, an examination of sex differences in trauma exposure and trauma response indicates that differential contexts of exposure may in fact be associated with differential trauma responses for girls and boys. Thus, the present study examined the roles of context, PTSD symptoms, aggressive cognitions, and sex in the relation between violence exposure and aggression in youth.

### The Present Study

Utilizing a social-cognitive framework, the current study examined the possible mediating role of PTSD symptoms and aggressive cognitions in the well-established relationship between violent trauma exposure and violent behaviors. The study also examined sex, age, and ethnicity as covariates, and the context of violence exposure (e.g., home, community, war) as a potential moderator in the violence exposure-violent behavior relationship. In addition to the investigation of the potential mediating roles of PTSD symptoms and aggressive cognitions, secondary analyses explored the role of depressive symptoms which are commonly associated with violent trauma and abuse, especially for girls (Flannery et al., 1998).

By examining these multivariate relationships in a non-referred sample of early adolescents, the present study aimed to organize the youth violence exposure literature and extend clinical understanding of the complex cognitive and emotional processes associated with aggressive behaviors in youth.

Figure 1 illustrates the conceptual model that guided the study. In this model, the latent construct of Violence Exposure is purported to have a significant positive relationship with the latent constructs of PTSD Symptoms, Aggressive Cognitions, and Aggression. In addition, Aggression is expected to be directly predicted by PTSD Symptoms and Aggressive Cognition, with both predictors mediating the direct relationship between Violence Exposure and Aggression. As indicated in the literature review, the arousal symptoms associated with PTSD might be interpreted as related to provocation by external sources; thus, the model also posits that there is a direct path between PTSD Symptoms and Aggressive Cognitions.

The conceptual model (Figure 1) depicts the following hypothesized bivariate and multivariate relationships:

*Primary Hypotheses: Test of Mediators*

*Hypothesis 1.* The latent constructs of PTSD Symptoms and Aggressive Cognitions would both independently and collectively serve as partial or full mediators in the relationship between violent trauma exposure and violent behaviors.

*Hypothesis 2.* In addition, due to the presence of the arousal component of PTSD and the potential for aggressive interpretations of such aroused states, it was hypothesized that a direct causal path exists between PTSD symptoms and Aggressive Cognitions.

*Secondary Hypotheses*

*Hypothesis 3.* There would be a significant interaction between sex and ecological context, with girls reporting higher levels of in-home exposure to violence, boys reporting higher levels of community exposure to violence, and boys and girls reporting equal levels of exposure to war violence.

*Hypothesis 4.* Independent of the socio-ecological context of violence exposure, exposed children would experience posttraumatic stress symptoms at a rate that exceeds that of the general youth population (6.3%; Giaconia, et al., 1995).

*Hypothesis 5.* The level of trauma symptomology would vary according to the ecological context in which violence exposure occurs. Exposure to violence and victimization within the family home would be related to higher levels of PTSD symptoms than exposure and victimization that occurs outside of the family home. However, trauma symptomology would be comparable for youth exposed to community

violence and youth exposed to war violence. Differences in the strength of the relationship between the different ecological contexts of violence and symptomology were expected to remain significant even after controlling for sex differences.

*Hypothesis 6.* Youth who experience violence within the home would show more symptoms of Depression and Hopelessness than youth exposed to violence outside of the family home. On the other hand, youth who experience violence outside of the home were expected to manifest more externalizing symptoms and exhibit more aggressive cognitions.



## METHODS

### *Recruitment*

Recruitment school districts were selected based primarily on two demographic factors, 1) the incidence of crime and violent victimization in the surrounding communities, and 2) the enrollment of refugee youth who were likely to have been exposed to war violence. Ten superintendents from Midwest school districts were contacted by telephone to request the districts' participation in the Youth Experiences Project. Of the 10 districts contacted by telephone, 7 districts agreed to review a written proposal outlining methods and measures for the study, and 2 school districts subsequently agreed to participate in the study. Each district required that the individual school principals provide their own consent for their school's participation. Of the two school districts, approval for the study was provided by two middle school principals (one principal from each district) and recruitment materials were then distributed to all 7<sup>th</sup> and 8<sup>th</sup> grade students from the approved schools. In addition to school recruitment, extensive efforts were made to recruit refugee participants through community agencies. These efforts were not successful, but agencies offered support (e.g., translation) and encouragement for the completion of the study.

### *Participants*

One of the participating middle schools had 229 seventh graders and 230 eighth graders but did not have students identified as refugees from political conflict. Of the 459 eligible students, 77 (16.8%) consents and assents were received. The other participating middle school had a total of 265 seventh and eighth graders, approximately 75 of whom

were identified as youth refugees from the Bosnian war. Of the eligible students, 47 consents and assents were received (17.7%), of which only 4 consents were in Bosnian.

The participating sample consisted of 124 seventh (63.4%) and eighth (36.6%) grade students from two Midwest schools located within working class, urban communities. The mean age of the sample was 13.1 years ( $\sigma = .81$ ) and there were an equal number of boys and girls. However, one war-exposed male participant endorsed zeros for every item on 7 of 9 scales; due to concerns with invalidity, his data were excluded from further analyses, leaving a sample size of 123. There was a 64.5% return rate for teacher questionnaires ( $n = 80$ ) with significantly more questionnaires being returned for girls (57.5%) than for boys (42.5%) ( $t = 7.64, p < .0001$ ). There were no other significant differences in demographics for students with returned teacher questionnaires and students without. The self-identified ethnicity of the sample was 73% Caucasian, 11.5% African American, 4.9% Latino, 2.5% Native American, 1.6% Asian/Asian American, and 6.6% other or unspecified ethnicity. The participating sample was more ethnically diverse than the student body of each school. Student demographics show that each school had 77.5 or 81.1 percent Caucasian students, in comparison to the 73% who participated in this study.

### *Procedure*

Recruitment packets describing the purpose of the study and the study procedures were sent home to parents/guardians. Parents or guardians were asked to read the study description (see Recruitment Letter, Appendix A.1) and then complete the informed consent (Appendix A.2) indicating whether they DO or DO NOT consent to their child's participation in the study. Parents were asked to return consent forms in enclosed

envelopes regardless of agreement or disagreement for participation in the study. All recruitment and consent materials were reviewed and approved by Campus Institutional Review Board.

*Translation.* All recruitment materials distributed to the families of Bosnian youth were professionally translated into Bosnian by the translation department of a resettlement agency. The materials were first translated by one professional translator then edited by a second professional translator, and finally the edited materials were re-read and finalized by the first translator. According to the principal of the school district with 75 Bosnian youth, all of the youth had been primarily educated in the United States following the end of the Bosnian war in 1995 and were considered proficient in both written and spoken English. Therefore, it was deemed that study questionnaires did not require translation.

*Data collection.* All data were collected during group administration sessions held at the participants' schools during school hours. Each session contained small groups of 5 to 20 students, with the primary investigator (PI) and 1-2 trained research assistant available during each session. At the beginning of each assessment session, the PI checked the list of students with signed consent forms to confirm that all students entering the assessment room had received proper informed consent from a parent or guardian. After confirming consent for each student present, the PI read the youth assent form (Appendix A.3) aloud, gave students the chance to ask questions, and asked them to sign the form if they agreed to participate in the study. All eligible students provided informed assent for participation.

Second, students received packets containing all study measures that had previously been assigned participant identification codes. Prior to completing self-report measures, the students finalized teacher-report measure packets. This step was taken to maintain participant anonymity by insuring that student names did not appear on any questionnaires. Students filled in their own name and the name of a teacher who knows them well on the Teacher Questionnaire Coversheet (Appendix A.4), which asked teachers to complete the attached questionnaire regarding the named student. Students then enclosed the completed coversheet in an envelope that contained two teacher-report behavioral questionnaires (see Measures below) labeled with the student's identification code and wrote the selected teacher's name on the outside of the envelope. Finally, research assistants collected the envelopes for distribution to teachers.

Third, students were briefed that the questions asked in the project would be unusual as compared to questions generally asked in school (Appendix A.5) and were again given an opportunity to ask questions regarding the study. Fourth, the PI or a research assistant read aloud instructions and items for each measure while students followed along and answered on their own forms. Students preferring to work ahead of the group were allowed to do so. The investigator and research assistants circulated among students to answer questions, insure that students were keeping their responses private, and provide separate instructions for students who worked at a pace that was faster or slower than that of the larger group.

Measures were administered in four different orders (see Appendix B.1) with Trauma exposure and PTSD measures remaining in consecutive order. Order of administration analyses showed that administration order was only significant for

symptom measures [PTSD-I,  $F(3) = 3.44$ ,  $p < .02$ ; CDI-S,  $F(3) = 2.95$ ,  $p < .04$ ]. Further examination of differences in PTSD and Depressive symptoms by order of administration indicated that youth exposed to war were more likely to have completed measures in order A and B and were also more likely to experience more trauma related symptoms.

As each student completed his/her questionnaire booklet, a research assistant checked the booklet for completeness and asked the student if he/she had questions about the study. Students then received a packet of information containing 1) a thank you letter including debriefing information, 2) a list of community resources specializing in low or no-cost therapeutic services for trauma survivors, 3) copies of consent and assent forms, and 4) 2 movie passes to a local theatre.

### *Measures*

#### *Demographic*

Students completed a brief demographic form identifying age, date of birth, date of examination, grade, school, and ethnicity (i.e., Caucasian, African American, Latino/Hispanic, Native American, Asian/Asian American, Other) (see Appendix B.2).

#### *Exposure to Traumatic Experiences*

*Community and home violence.* The **Screen for Adolescent Violence Exposure (SAVE; Hastings & Kelley, 1997; Appendix B.3)** is a 32-item empirically developed measure of youth exposure to indirect and direct violence in their home, neighborhood, and school. Each item is rated on a 5-point Likert scale ranging from 0 (never) to 4 (always) to indicate the frequency of occurrence of experiences such as, “I hear gun shots,” “Grownups hit me,” and “I have seen someone get shot.”

The validation study included 1,250 6th through 12th grade inner city youth (Hastings & Kelley, 1997). Three factors (i.e., Traumatic Violence, Indirect Violence, Physical and Verbal Abuse) were derived for each of the violence exposure settings included in the measure (i.e., home, school, neighborhood). In the validation study, coefficient alphas for total exposure within each setting were above .90, and coefficient alphas for the three exposure factors within each setting ranged from .58 (physical and verbal abuse at school) to .91 (indirect violence exposure in the neighborhood). Test-retest reliability (across 2 weeks) for violence composite at school, in the neighborhood, and at home were .91, .92, and .92, respectively. Low exposure and high exposure groups were distinguished by the measure and there was a significant positive correlation between child-reported neighborhood exposure and independent local crime data.

For the present study, violence exposures occurring in neighborhoods and schools were combined to measure community violence, resulting in three factors across two exposure contexts (i.e., home, community). Coefficient alphas for the present study were .88 and .91 for home and community violence exposure, respectively. Subscale alphas were all within adequate to excellent ranges (i.e.,  $\alpha = .62$  to  $\alpha = .89$ ).

*War violence.* The **War Experience Questionnaire** (WEQ; Husain & Holcomb, 1994; see Appendix B.4) is an unpublished measure developed for the purpose of gathering information regarding children's exposure to war events during the Bosnian war. The questionnaire consists of 14 multi-part items that ask about demographics, current living arrangements, and events and fears experienced during the war.

A previous study utilizing the WEQ found that theoretically derived factors (i.e., Witnessing, Traumatic Losses, Victimization) were all significant predictors of trauma

symptoms (Allwood, Bell & Husain, 2004). However, as expected with dichotomous reporting of many different forms of exposure, the internal consistency of the composite and subscales of the WEQ were below acceptable ranges (e.g.,  $\alpha = .14$  for victimization;  $\alpha = .45$  for witnessing).

For the purpose of the current study, the measure was revised to assess experiences that have been reported by children from many different war zones (e.g., Kosovo, Rwanda, Kuwait, Bosnia) and to capture experiences related to encampment as refugees. For example, items regarding being beaten up and seeing others beaten up while living in a refugee camp were added. However, to focus on war experiences versus responses, items that specifically asked about fears experienced during the war were eliminated. Thus, the War Experience Questionnaire-Revised (WEQ-R) consists of 8 multi-part self-report items that assess direct and indirect exposure to violence during war and war-related refugee camp experiences. For the current study, only 6 (5 Bosnian and 1 African) youth completed the WEQ-R; thus, psychometric properties for the WEQ-R are not available, and data from the WEQ-R are utilized for descriptive purposes only.

#### *Violent and Aggressive Behavior*

The measures of overt violence and aggression were selected to capture a wide variety of violent and delinquent behaviors as reported by both adult informants and youth participants.

The **Self-Reported Delinquency** scale (SRD; Elliott, Huizinga & Ageton, 1985; Appendix B.5) is a 45-item youth-report measure of delinquent behaviors across six domains, (i.e., property offenses, status offenses, illegal service, drug use, disorderly conduct, offenses against people). Items include assessment of violent behaviors, such as

“attacked someone with the idea of seriously hurting or killing him/her,” and “thrown objects at cars or people.” This measure was used in the National Youth Survey longitudinal study of delinquent behaviors, where over 1700 youth were surveyed at seven annual time points from 1976 to 1983. Respondents endorse all behaviors that they engaged in within the past year, resulting in a binary “yes” or “no” response for each behavior. A composite of all delinquent acts range from 0 to 45, and subscale scores range from up to 3 for Illegal Service to 13 for Property Offenses. A validation study involving 177 participants showed a 21-35 day test-retest reliability of .75 for general delinquency (Huizinga & Elliott, 1986). Self-reported delinquency has been found to have a moderate correlation with official past arrest records (Huizinga & Elliott, 1986) and to be predictive of future arrests (Jolliffe et. al., 2003).

For the present study, a 5-point scale was used to endorse the frequency of each behavior in the past year (0 = “not at all”, 4 = “10 or more”). The potential maximums for subscale scores ranged from 15 (Illegal Service) to 52 (Property Offense), with a potential composite score of 180. Of primary interest in the current study, the 9-item Offenses/Aggression against People subscale had a maximum score of 36. This modified frequency scale yielded excellent internal consistencies in the current study. The composite coefficient alpha was .92 and coefficient alphas for Property Offenses, Status Offenses, Disorderly Conduct and Offenses Against People were .89, .63, .70, and .67, respectively. The internal consistencies for Illegal Service and Illegal Drug Use were not calculated due to the low rate of occurrence for this sample.

The **New York Teacher Rating Scale** (NYTRS; Miller et al., 1995; Appendix B.6) is a 36-item teacher-report measure of defiant, aggressive, and delinquent behaviors



in youth, including 7 items addressing positive peer relations (e.g., “Is liked by peers”), and 2 items addressing school functioning (“How much of an academic problem does the child have at this time”). The 27 problem behavior items include a range of antisocial behaviors that closely corresponds to the criteria for Conduct Disorder (e.g., “loses temper,” “truants,” “has used a knife or other weapon in a fight”). Teachers rate the presence of each behavior in their students on a scale from 0 (“not at all”) to 3 (“very much”).

The initial reliability study of 1339 children ages 6 to 18 from Westchester County and Staten Island, New York yielded four factors (Defiance, Physical Aggression, Delinquent Aggression, Peer Relations) and two composite scales (Antisocial Behavior, Disruptive Behavior). The maximum scores for the Defiance, Physical Aggression and Delinquent Aggression factor scales are 42, 15 and 12, respectively. The total problem behaviors score for the NYTRS range from 0 to 81.

Content validity for delinquent behavior in youth is shown in the nature of the items surveyed (e.g., physical fights, use of weapons) and the inclusion of items that form the DSM-IV criteria for Conduct Disorder (APA, 1994). As measures of internal consistency, the coefficient alphas in the validation study ranged from .73 (Delinquent Aggression) to .96 (Defiance) with the composite Antisocial Behavior ( $\alpha=.80$ ) and Disruptive Behavior scales ( $\alpha=.95$ ) yielding coefficient alphas within acceptable ranges. The 5-week test-retest reliability for each subscale and composite ranged from .62 (Physical Aggression) and .87 (Peer Relations). Similar to the initial reliability study, the coefficient alphas for the present study were within excellent ranges with  $\alpha = .94$  for the

full measure,  $\alpha = .91$  for Defiance and  $\alpha = .81$  Physical Aggression. Coefficient alpha for Delinquent Aggression was not calculated due to the low endorsement of these behaviors.

The **Child Behavior Checklist-Teacher Report Form** (TRF; Achenbach, 1991) is a widely used measure of adaptive and problem behaviors in the classroom. Teachers complete demographic and academic information and then rate 113 behavioral descriptions on a 3-point Likert scale (0= “not at all true,” 2=“very true”). The 113 behavioral descriptions consist of items such as “argues a lot,” “can’t sit still, restless, or hyperactive,” and “fears going to school.”

The CBCL-Teacher Report Form (TRF) is normed for school age children up to 18 years old and recent findings regarding psychometric properties are reported in the 1991 manual (Achenbach, 1991). Principle component analysis of the TRF indicated two broadband scales of Internalizing and Externalizing behaviors and eight subscales; Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior. The 1991 profile manual report a 15 day test-retest reliability of .82 to .96 for the subscales and interrater reliability of .30 to .68 (Achenbach, 1991). The composite test-retest and interrater reliabilities were .95 and .60, respectively (Achenbach, 1991). Of particular interest for the proposed study are the Aggressive Behavior and Delinquent Behavior subscales which together comprise the Externalizing broadband scale. The test-retest reliability for the Externalizing scale is .92, and the teacher-teacher aide agreement is .69. In the present study the coefficient alphas for the broadband Externalizing and the Aggressive and Delinquent Behaviors subscales were .91, .90 and .63, respectively. Internal consistencies of delinquent behavior scales are often low due to the various types

of rule violations measured. Similar alpha coefficients have been found in previous studies (Achenbach, 1991).

*Potential Mediators between Exposure and Aggression*

*Trauma symptoms.* The **UCLA PTSD Index (PTSD-I;** Rodriguez, Steinberg & Pynoos, 1999; Steinberg, Brymer, Decker & Pynoos, 2004; Appendix B.7) is a 49-item measure of trauma exposure and response. The first 13 items provide information about a variety of traumatic experiences (e.g., accidents, disasters, medical treatments) and item 14 asks the respondent to select the experience that bothers him/her most and to rate how bothersome the event was for them (1- a little, 2- somewhat, 3- a lot). Respondents then answer 13 acute-response questions that assess response at the time of the traumatic event, intended to establish if the respondent reacted to the event with fear, helplessness, or horror, as specified in the DSM-IV PTSD criteria (APA, 1994). Finally, 22 questions assess the presence of DSM-IV symptoms and other clinically derived symptoms that are known to be associated with trauma response in children (e.g., “I have arguments or physical fights”). For the purpose of this study, the PTSD-I was modified in the following ways. First, respondents were asked to select the most bothersome experience based on their reports on any of the three trauma exposure scales (i.e., PTSD-I, SAVE, WEQ-R). Second, the 13 acute-response questions were eliminated due to time constraints.

The UCLA PTSD Index has been selected as the primary PTSD screening measure for the National Child Traumatic Stress Network (NCTSN). NCTSN consists of more than 50 national sites actively engaged in data collection and treatment development for child trauma victims. The PTSD-I is also utilized in the Child and Adolescent Trauma Treatment Service Program established by New York State Office of

Mental Health to provide services for youth affected by the terrorist attacks of September 11, 2001. Early evaluation of the PTSD-I showed that the greatest sensitivity and specificity for detecting PTSD was a cut-off score of 38 or greater (Steinberg et al., 2004). Psychometric properties for this measure are still under review and the current study will contribute to the pool of data collected to examine the properties.

Although psychometric properties are not yet available, an earlier version, the PTSD Reaction Index (PTSD-RI) has been cited as one of the two most widely used scales for the assessment of PTSD in children (Vogel & Vernberg, 1993). In a study of children exposed to a sniper shooting, Pynoos, et al. (1987) reported a 94% interrater reliability (Cohen's kappa = .88) and the PTSD-RI was found to have a high correlation with interviewer diagnosis of PTSD in adults and children (.95 and .91, respectively). In the present study, the alpha coefficient for the modified PTSD-I was .94, indicating excellent internal consistency.

The **Emotional Numbing Scale** (ENS; Luterek, Plumb, Tull, Roemer & Orsillo, 2002; Appendix B.8) is a 32-item, 3-factor measure of emotional numbing; a component of PTSD. The Numbing to Positive Emotions factor consists of 14-items (e.g., "I feel happy when things turn out better than I expect"), Numbing to Sadness and Fear consists of 12-items (e.g., "I feel sad when someone does something to hurt me"), and the Numbing to Anger factor consists of 6-items (e.g., "I get angry when someone treats me badly"). In the reliability study, the ENS had excellent internal consistency as indicated by a coefficient alpha of .93. The three factors (Numbing to Positive Emotions, Numbing to Sadness and Fear, and Numbing to Anger) also had good internal consistencies, with coefficient alphas of .87, .89, and .84, respectively.

Given the wording of each item, ENS is largely a measure of emotional experience (e.g., “I feel happy...”). Thus to capture the numbing of emotional experiences, for this study the items on ENS were reversed scored (except for item 6 which was originally reversed scored). Similar to the reliability study, coefficient alpha for the modified ENS used in the present study was .93 for the entire measure, and alphas ranged from .81 to .91 for subscale scores.

*Depression.* Because depression is commonly associated with stress and trauma, the present study included youth reports of depressive symptoms and hopelessness.

The **Children’s Depression Inventory-Short Form** (CDI-S; Kovacs, 1992) is a 10-item abbreviated version of the CDI, a self-rated measure of current depressive symptomology. Each item consists of 3 statements (e.g., “I am sad once in a while,” “I am sad many times,” “I am sad all the time”). The child is asked to endorse the statement that best describes how he or she felt in the past two weeks. Statements receive a score of 0, 1, or 2, depending on the severity level that the item represents. Of the 10 items, 5 are reversed scored.

The 10-item CDI-S correlates highly with the full 27-item inventory ( $r = .89$ ), and the coefficient alpha for the 10-items is acceptable ( $\alpha = .80$ ). Although there is a paucity of information regarding the psychometric properties of the CDI-S, the properties of the full inventory have been investigated in a series of studies of clinical and non-clinical children (Saylor, Finch, Spirito & Bennett, 1984). The 1-week test-retest reliabilities for non-clinical and clinical children were .38 and .87, respectively. Likewise, split-half (even-odd) reliabilities for non-clinical and clinical children were .61 and .74, respectively. In previous studies, the CDI-S demonstrated strong internal consistencies

with the Kuder-Richardson alpha for non-clinical and clinical samples of children being .94 and .80, respectively. The internal consistency for the present study was  $\alpha = .86$ .

The **Hopelessness Scale for Children** (HSC; Kazdin, Rodgers & Colbus, 1986; Appendix B.9) assessed children's negative expectations towards the future, with items such as "I don't think I will have any real fun when I grow up." The HSC includes 17 "yes/no" items that are combined to form a composite score ranging from 0 – 17, with 0 indicating low hopelessness. Eight of the 17 items are positively worded and are reversed scored.

A validation study of this measure was conducted with a sample of 262 (200 boys, 62 girls) 6 to 13 year-old children treated at an inpatient psychiatric facility. Concurrent validity has been established with scores on the HSC being positively correlated with depression and negatively correlated with self-esteem, and social behavior (Kazdin et al., 1986). The validation study indicated that the scale has excellent psychometric properties, with an internal consistency of  $\alpha = .97$ , and a Spearman-Brown split-half reliability of .96. Internal consistency in the present study was lower but remained within acceptable range,  $\alpha = .79$ .

*Aggressive cognitions.* Aggressive cognitions were assessed with two measures of violence acceptance. The **Attitudes Towards Violence Scale** (ATVS; Funk et al., 1999; Appendix B.10) is a 15-item, two factor scale of adolescents' attitudes about use of violence. The Culture of Violence factor consists of 8 items that reflect core values, such as "I could see myself joining a gang," and "It's okay to use violence to get what you want." The 6-item Reactive Violence factor reflects a willingness to use violence in response to perceived threats, and includes items, such as "If a person hits you, you

should hit them back,” and “It’s okay to do whatever it takes to protect myself.” The items are rated on a 5-point scale (0= strongly disagree, 4= strongly agree). In earlier studies higher levels of pro-violence attitudes were found for males and for youth who self-reported a history of violent victimization (Funk et al., 1999).

The initial reliability study included 157 junior high and 254 high school students, and follow-up studies were conducted with over 1293 junior high and high school students. The two factors, Culture of Violence and Reactive Violence, yielded coefficient alphas of .75 and .80, respectively, and the composite scale yielded an alpha of .86. Coefficient alphas for the current study were .78 for the composite and .75 and .79 for Reactive Violence and Culture of Violence subscales.

The **Acceptance of Couple Violence** scale (ACV; Foshee, Fothergill & Stuart, 1992; Appendix B.11) is an 11-item measure of attitudes related to the use of violence within male-female romantic relationships. Items (e.g., “A boy angry enough to hit his girlfriend must love her very much”) are rated on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree) and summed to form a composite scale and three theoretically-derived subscales (attitudes towards male-to-female violence, female-to-male violence, and general dating violence). The internal consistencies for each scale in a previous study of 8th and 9th grade students were .74, .71, and .73, respectively (Foshee et al., 1992). Follow-up studies of dating violence have shown that violence accepting attitudes predicted dating violence perpetration by males (Foshee, Linder, MacDougall & Bangdiwala, 2001). In the current study, the internal consistency was .83 for the composite scale and .79, .77 and .75, respectively for male-on-female, female-on-male, and general dating violence.

In order to achieve uniformity in scaling of both aggressive cognitions measures (ATVS and ACV), the measures were rated on a scale of 0 (strong disagree) to 3 (strongly agree).



## *RESULTS*

Preliminary analyses were conducted to examine the properties of each scale and relevant subscales. First, preliminary analyses included an examination of stem-and-leaf and normality plots, as well as an examination of skewness and kurtosis. Second, the means, standard deviations, range and internal consistency of all measures were examined. Third, zero-order correlations were calculated for all measures to determine if the links between the constructs met the assumptions necessary for use in a mediation model (see Baron & Kenney, 1986). Fourth, secondary analyses examined hypothesized bivariate relationships and potential differences in sequelae across different contexts of violence exposure. Finally, primary analyses utilizing structural equation modeling (SEM) were conducted to examine the proposed mediation model and to further investigate sex differences in the structure of the data.

### *Preliminary Analyses*

Preliminary analyses included examination of the distributional properties of each measure to assure that the measures met the assumption of normality necessary for further analyses. Examination of the univariate plots indicated that there was one extreme score (more than 2 standard deviations above the next highest score) in each of three measures (i.e., Home Violence, Acceptance of Couples Violence, Self-Reported Delinquency). For further analyses each of the three extreme scores was truncated to equal the next highest score. Similarly, subscales that showed unacceptable skewness or kurtosis (i.e., Home Traumatic Violence, Community Traumatic Violence, Aggression on People, Disorderly Conduct, Male-on-Female Violence) were truncated to meet

assumptions of normality. After the univariate outliers were truncated, the skewness and kurtosis of each variable fell within the acceptable ranges (Curran, Finch & West, 1996).

### *Descriptive Statistics for Predictors*

*Community and home violence.* As shown in Table 1, on average, youth experienced 18 incidents of community violence (scaled for frequency) and 6.3 incidents of home violence (scaled for frequency). Not only were youth in this sample exposed to more community violence than home violence overall (see Table 1), chi-square analyses indicated that this pattern extended to most types of violence (e.g., witnessing hitting) (see Table 2). For example, approximately 59% reported having seen a grownup hit a child in their neighborhood, as compared to 23% who witnessed this behavior at home [ $\chi^2(1) = 68.03, p < .0001$ ]. Similarly, almost 70% of the sample reported witnessing someone getting beaten up in the neighborhood, and 22% reported seeing such aggression at home [ $\chi^2(1) = 126.52, p < .0001$ ].

As in other studies, youth were more likely to hear about violent behavior than to witness or be victimized by violence (Allwood, Bell, Husain & Ekong, 2004; Nofziger & Kurtz, 2005). Table 6 show that mean exposure to indirect violence (community  $\mu = 13.5$ ; home  $\mu = 4.4$ ) was much higher than mean exposure to physical abuse (community  $\mu = 2.8$ ; home  $\mu = 1.4$ ) and traumatic violence (community  $\mu = 1.7$ ; home  $\mu = .62$ ). Nonetheless, some youth in our sample reported having been attacked with a knife in their neighborhood (2.4%) or at home (1.6%), or having been shot at in their neighborhood (4.1%) or at home (3.3%). Youth in our sample also reported witnessing killings in their neighborhood (4.1%) and in their home (1.6%) (not including being witness to killings in war zones).

*War violence.* In addition to the community and home violence shown above, 9% ( $n = 12$ ) of our sample was exposed to war violence at an early age. Of the 12 war-exposed youth, 6 (5 from Bosnia, 1 from an African country) completed the War Experiences Questionnaire-Revised (WEQ-R), and of the 6, 5 provided valid responses. This small sample averaged 6.4 incidents of war violence (range = 2 – 10). All 5 had a family member who died during the war, and 2 of the 5 were witness to the killing. War-exposed youth were also witness to close range shootings ( $n = 2$ ), to people being wounded ( $n = 3$ ), to beatings ( $n = 3$ ), to homes being burned ( $n = 2$ ) and to other atrocities of war. Given the low rate of war experience for the entire sample, war experiences were not used in SEM models but were analyzed exploratively using OLS methods.

*Other potentially traumatic events.* As shown in Table 3, youth in this study were exposed not only to violent events, but also to other potentially traumatic events such as the death or injury of a loved one. In our study, some youth experienced death or injury of a loved one (56.1%), disasters (41.8%), accidents (14.8%), and frightening medical procedures (22.8%). In addition, almost 7% reported having unwanted sexual contact with someone much older.

#### *Compounded Trauma for War-Exposed Youth*

Further analyses indicated that all war-exposed youth were exposed to potentially traumatic experiences that were additive to their war experiences. For example, of the 12 youth exposed to war, 2 had unwanted sexual contact, 2 had been in an accident, 4 had a frightening medical procedure, 4 saw dead bodies, 4 had been in a disaster situation, and 6 had experienced an “other” unspecified event. In addition, all war exposed youth

experienced community violence ( $\mu = 19.0$ ,  $\sigma = 10.9$ ), and 8 experienced in-home violence ( $\mu = 4.7$ ,  $\sigma = 5.7$ ). See Table 13 in Appendix C for war sample versus full sample trauma exposure and adjustment indices.

#### Descriptive Statistics of *Potential Mediators*

*Trauma symptoms.* The mean number of PTSD symptoms as measured by the PTSD-I scale was 21.2 ( $\sigma = 17.1$ ). The authors of the measure and the National Child Traumatic Stress Network recommend a cut-off of 38 or higher for the best estimation of clinically significant PTSD Symptoms (Steinberg, et al., 2004). Thus, on average, youth in our study were far below threshold for clinical significance. However, based on an “ever” vs. “never” dichotomized scale, the data indicate that most of our sample experienced at least one trauma symptom. For example, 79.7% endorsed watching for danger (the most frequent symptoms) and 69.9% endorsed feeling grouchy or easily angered in the past month. In addition, more than half (52%) of participants reported having bad dreams in the past month, with 15.8% reporting a high frequency (“often,” “almost always”) of bad dreams. Almost a third (31%) reported that they did not think they would live a long life and almost 54% reported getting into frequent arguments and fights. PTSD symptoms did not covary with sex, age, or ethnicity.

The sample had a mean emotional numbing score (i.e., ENS-M) of 41.8 ( $\sigma = 20.9$ ). The mean rating of 1.3 for the 32 items indicates that on average participants were “rarely” unable to express each emotion queried. The mean rating for Numbing of Pleasure (.92) was lower than that of Numbing of Sadness/Fear (1.6) and Numbing of Anger (1.6), indicating that sampled youth were least likely to numb positive feelings. Regression analyses showed sex differences for ENS-M scores [ $t(1) = 3.31$ ,  $p < .001$ ]

with boys showing more Numbing of Sadness and Fear [ $t(1) = 4.90, p < .0001$ ] than girls. Emotional numbing symptoms did not differ for either age or ethnicity.

*Depressive symptoms.* Mean depressive symptoms as measured by both CDI-S and Hopelessness (HSC) were both 3.2. Psychometric properties of the HSC, including sample means, are not available for non-referred youth; however, a mean of 5.0 has been reported for psychiatrically hospitalized youth (Kashani, Suarez, Allan & Reid, 1997). For the CDI-S a mean of 3.2 corresponds with a T-score of 49 for both boys and girls ages 13 to 17. Thus, this sample had low levels of depressive symptoms as compared to the normative group and low levels of hopelessness as compared to psychiatrically hospitalized youth. For example, only 4% of participants reported that he/she felt like crying daily, and on the HSC only 6.7% of participants reported that all they saw in their future was bad things and not good things. Dissatisfaction with physical appearances was the most frequently endorsed depressive item, with almost 50% endorsing bad things about their looks. Neither sex, age, nor ethnicity was significantly associated with depressive symptoms and hopelessness.

*Aggressive cognitions.* Acceptance of violence, both general (ATVS) and couple's (ACV) violence, means were respectively, 13.0 and 3.2. In the reliability study of ATVS (Funk et al., 1999) the mean Culture of Violence and Reactive Violence scores were respectively 2.29 ( $\sigma = .59$ ) and 3.15 ( $\sigma = .77$ ) (rated 1 = "strongly disagree" to 5 = "strongly agree"). The mean Culture of Violence and Reactive Violence scores in the current study were respectively 4.59 ( $\sigma = 3.25$ ) and 8.33 ( $\sigma = 4.79$ ) (rated 0 = "strongly disagree" to 3 = "strongly agree"). ATVS mean differences across samples indicate that this sample endorsed higher levels of pro-violence attitudes than the reliability sample of

more than 1200 students. In our sample, almost 11% thought it was “good to have a gun” and 28% thought it was good to carry a weapon in a dangerous neighborhood. On the ACV, 10% indicated that sometimes violence is the only way to express oneself and 13.8% indicated that people who use violence get respect.

Interestingly, sex differences were found for both ATVS [ $t(1) = 3.86, p < .0001$ ] and ACV [ $t(1) = 2.81, p < .006$ ]. Boys endorsed higher pro-violence attitudes than girls on all five subscales of ATVS and ACV (t-values ranged from 1.93,  $p < .06$  for Male-on-Female Violence to 3.89,  $p < .0001$  for Culture of Violence). Neither age nor ethnicity was a significant predictor of aggressive cognitions scales or subscales.

#### *Descriptive Statistics for Criterion Variables*

*Aggressive and delinquent behaviors.* Teacher’s reports of behavioral adjustment showed an average of 4.2 and 3.7 adjustment problems as measured by the TRF Externalizing and NYTRS scales, respectively, whereas youth self reported an average of 8.5 delinquent acts, including substance use (see Table 1). Participants reported that they engaged in many different types of rule/law violations in the past year. As shown in Table 4, almost 41% had hit another student, over 10% had hit a parent on at least one occasion, and almost a third (32%) of the sample purposefully damaged or destroyed property in the past year. Regarding substance use, over 25% had tried alcohol, 9% used marijuana, and 1.6% ( $n = 2$ ) used methamphetamines at least once. Overall, 27.4% reported trying one or more forms of alcohol or illicit substances in the past year.

Teachers reported fewer occurrences of rule violations than did their students. According to TRF ratings of students, only 1.4% destroyed property belonging to others, and 4.2% had many fights. Similarly, teacher’s NYTRS responses indicated that only

2.7% of students had physical fights with peers and/or destroyed or defaced property. Not only were teacher ratings of rule violations lower than youth self-reported violations, teachers reported fewer rule violations than those found in previous samples. For our sample, the mean Aggressive and Delinquent Behaviors as measured by the TRF were .86 and 3.56, respectively (Table 6), whereas the normative sample means for these TRF subscales were 1.15 and 4.46 (Achenbach, 1991). On the NYTRS, which as compared to the TRF measures more crime-related offenses (e.g., possession of weapons, sexual offense), Defiance, Physical Aggression, and Delinquent Aggression means were 3.11 ( $\sigma = 5.18$ ), .13 ( $\sigma = .62$ ), and .01 ( $\sigma = .11$ ), respectively. Comparatively, mean rates of Physical and Delinquent Aggression in the current study were essentially the same as those found for non-conduct disordered youth in the validation study (.14 – Physical Aggression; .01 - Delinquent Aggression). However, the mean rate of Defiance in our sample exceeds the rates found for both non-conduct disordered ( $\mu = .38$ ,  $\sigma = .6$ ) and conduct disordered youth ( $\mu = 1.75$ ,  $\sigma = .8$ ) in the validation study.

*Covariates of aggression and delinquency.* The total number of self-reported delinquent acts differed by sex [ $t(1) = 2.27$ ,  $p < .02$ ] and by age [ $t(1) = 2.33$ ,  $p < .02$ ] with boys and older youth reporting more violations. Sex differences were largely accounted for by differences in Property Offenses [ $t(1) = 2.21$ ,  $p < .03$ ] and Aggression on People [ $t(1) = 2.74$ ,  $p < .007$ ]. The age difference was largely accounted for by differences in Disorderly Conduct [ $t(1) = 2.40$ ,  $p < .02$ ] and Status Offenses [ $t(1) = 2.44$ ,  $p < .02$ ]. Similarly, teachers reported more Delinquent Behavior [ $t(1) = 2.54$ ,  $p < .01$ ] and more Defiance for boys [ $t(1) = 1.96$ ,  $p < .05$ ]. For this sample, aggressive and delinquent behaviors did not covary by ethnicity.

*Correlations among Measures*

To assess the extent of intercorrelation among measures and subscales, zero order correlations were computed. Bonferroni corrections were applied to the correlations to control for possible Type I errors. The correction for analyses of all measures required a p-value of .005 for significance and corrections for subscale analyses required a p-value of .002. Given the potential for low power in the study and possible Type II errors, all non-significant p-values of .05 or less are shown as trends towards significance. As indicated in Table 5, several measures were intercorrelated. Community violence exposure was significantly related to home violence, and both measures of violence were positively related to PTSD symptoms as well as to aggressive cognitions (i.e., ATVS, ACV). As expected, PTSD symptoms had a high positive correlation with self-reported depressive symptoms (i.e., CDI-S scores), and both PTSD and depressive symptoms were positively related to feelings of hopelessness (i.e., HSC) but not to emotional numbing (i.e., ENS-M).

Behavioral maladjustment was measured in several ways, with self-report and teacher-report measures yielding different findings. For example, self-reported delinquency was positively related to violence exposure, aggressive cognitions, and to PTSD and depressive symptoms. However, behavioral maladjustment as measured by teacher-report scales (i.e., TRF, NYTRS) showed no relationship to self-reported adjustment, with the exception of the positive relationship seen between externalizing symptoms and emotional numbing symptoms.

Table 7 shows that as expected, subscales within measures were highly related to each other. Moreover, all types of violence exposure except exposure to at-home



Traumatic Violence were positively related to all three PTSD symptom clusters. Violence exposure was also related to self-reported Disorderly Conduct and Property and Status Offenses, which in turn were related to the Arousal symptoms of PTSD, but not to the Re-experiencing and Numbing/Avoidance symptoms. Numbing of Sadness and Fears (e.g., ENS-M subscale) were positively related to or showed a positive trend with all types of in-home violence (i.e., traumatic violence, indirect violence, physical abuse) and to 4 out of 5 acceptance of violence subscales (i.e., female-on-male violence, general couple's violence, reactive violence, culture of violence). Numbing of Sadness and Fears also showed positive trends with the commission of Property Offenses, Aggression on People, and teacher-reported Aggressive and Delinquent Behaviors. Interestingly, ENS-M subscales were not significantly related to PTSD symptoms as proposed and were therefore excluded from further analysis. Remaining subscales that were assessed for inclusion in structural equation models are listed in Table 8.

### *Primary Analyses*

#### *Statistical Analyses*

The SAS statistical software's CALIS procedure, and Smallwater's AMOS software (Arbuckle, 1999) were utilized for SEM analyses. The maximum likelihood method of parameter estimation was used to reproduce the variance-covariance matrix of the data. Due to the extent of missing data (e.g., 35% missing teacher forms, 10.5% incomplete Aggressive Cognition measures due to school time constraints), missing data were not imputed. Instead, means and intercepts were estimated in AMOS as is the standard practice for managing missing data in AMOS.

Several data analysis procedures were conducted to assure that the final model provided the closest approximation of the observed variance-covariance matrix. Goodness of fit indices (i.e., normed fit index, Tucker-Lewis index, Root Mean Square Error of Approximation) were examined to test for acceptable fit of each model to the observed data and to determine if modifications were needed. The Normed Fit Index (NFI) and Tucker Lewis Index (TLI), also known as the Non-Normed Fit Index (NNFI), usually ranges from 0.0 to 1.0, with .90 or above indicating an acceptable fit of the data. Similarly, the Root Mean Square Error of Approximation (RMSEA) ranges from 0.0 to 1.0. However, lower coefficients are indicative of more acceptable fit with coefficients at or below .08 being acceptable and coefficients below .05 indicating good fit (Loehlin, 1998). For non-nested models, the Akaike's Information Criterion (AIC) fit index was compared to determine the most parsimonious model with best model fit. Smaller AIC values indicate a more parsimonious model fit. Parsimony is particularly important for achieving the highest power possible given the sample size is fewer than the recommended 200 participants (Hatcher, 1994). Next, to determine if model modifications were needed, the Wald test and Lagrange multiplier test modification indices were generated in SAS and examined to identify parameters that provided a poor fit to the data. Identified parameters were modified to provide the best fit; however, every effort was made to retain the conceptual model shown in Figure 1. Of note, modification indices are not provided in AMOS when missing data are present; thus Proc Calis was used to generate modification indices.

### *Measurement Models*

Figure 1 illustrates the conceptual mediation model, whereas Figure 2 illustrates the revised mediation model that is based on both conceptualization and on preliminary analyses. Confirmatory Factor Analyses were conducted for all latent constructs proposed in Figure 2 to determine if each indicator provided a good estimate of the latent construct.

*Measurement model of factors.* A priori, it was anticipated that family, community, and war violence might not have acceptable convergent validity to serve as effect variables or indicators for the latent construct of Violence Exposure. Moreover, as indicated in Table 7, the mediators and criterion variables are differentially related to Home and Community Violence Exposure. In addition, due to the low rate of occurrence in the sample, the War Violence manifest variable is absent from the model. Indeed, efforts to derive a 6-indicator (Traumatic Violence, Indirect Violence, and Physical Abuse, each at Home or Community) model of Violence Exposure resulted in a very poor fit ( $\chi^2(9) = 116.68$ ,  $p < .0001$ , NFI = .84, TLI = .65, RMSEA = .31). Despite the poor fit of the 6-indicator model, each indicator was significantly related to the Violence Exposure construct ( $\beta s > .62$ ,  $p < .0001$ ). For a better fit of the measurement model for Violence Exposure, 2 separate factors, Community Violence and Home Violence were derived, each with 3-indicators resulting in two separate saturated models. Because saturated models have no degrees of freedom (e.g., no paths are free to vary) and in essence result in a perfect fit (e.g., NFI = 1.0, RMSEA = .00), fit statistics could not be calculated.

The saturated, 3-indicator (i.e., Re-experiencing, Numbing/Avoidance, Arousal) measurement model of latent PTSD Symptoms was assessed and then utilized in the

larger measurement and structural models in place of the manifest PTSD Symptoms illustrated in the conceptual model (Figure 1). Emotional numbing symptoms as measured by ENS-M were not included as indicators of latent PTSD Symptoms because preliminary analyses indicated that no significant relationship existed between the ENS-M scale or subscales and PTSD components. Of note, the authors of the ENS also found non-significant relationships between ENS and PTSD components and are not utilizing the measure at this time (personal communication with third author, Matthew Tull, April 2005).

Confirmatory Factor Analyses (CFA) were also performed to assess the factor structure of the other latent variables (i.e., Aggressive Cognitions, Aggression). First, to assess the structure of Aggressive Cognitions a 5-indicator (i.e., Reactive Violence, Culture of Violence, Acceptance of Male to Female Violence, Acceptance of Female to Male Violence, Acceptance of General Couple's Violence) confirmatory model was generated. Each of the 5 factors were significantly related to the Aggressive Cognitions construct at the  $p < .0001$  level, with factor loadings ranging from .56 (Reactive Aggressive Cognitions) to .78 (Acceptance of Male-to-Female Violence) but the model fit was poor as indicated by the RMSEA above .10 ( $\chi^2 (5) = 24.97, p < .0001$ ; NFI = .96; TLI = .89 RSMEA = .18). Based on the LaGrange multiplier modification indices, covariance paths were fitted between two sets of error terms (i.e., Reactive Violence and Culture of Violence residuals, Reactive Violence and General Acceptance of Couple's Violence residuals), resulting in a greatly improved model fit ( $\chi^2 (3) = 3.65, p < .30$ , NFI = .99, TLI = .99, RSMEA = .04).

Second, a CFA of the Aggression construct was fitted. An item level examination of the Property Offense items showed that this subscale was largely a measure of stolen property, with only 3 items addressing destructive behavior. Similarly, Disorderly Conduct items included only 2 aggressive acts (i.e., thrown objects at cars or people, carried a hidden weapon). The 2 aggressive Disorderly Conduct items and the 3 property destruction items were combined with the only endorsed Illegal Service item (sexual relations against the other person's will) to form a 6-item self-reported indicator of "Other Aggressive Acts." To examine the structure of the Aggression factor, 4 potential indicators (i.e., self-reported Aggression towards People and Other Aggressive Acts, teacher-reported Physical Aggression and Aggressive Behaviors) were fitted to a latent variable (Aggression). Of the 4 indicators that were entered, teacher-reported Aggressive Behavior (TRF subscale) was not significantly related to the factor ( $\beta = .21, p < .08$ ); thus, Aggressive Behavior was removed and an alternate, fully saturated, 3-indicator Aggression factor was examined and utilized in subsequent models.

*Full measurement model.* Finally, as a result of the CFAs of each multi-indicator factor, the proposed model (Figure 2) was revised to reflect a 3-indicator Aggression factor after the elimination of teacher-reported aggression (Aggr). The factor loadings for all final indicators are listed in Table 9. To further examine whether each indicator adequately measures the assigned latent construct, a CFA of the measurement model was tested in which all factors were allowed to correlate freely with all other latent factors, as recommended by Hatcher (1994). This measurement model showed a poor fit ( $\chi^2 (109) = 322.94, p < .0001$ ; NFI = .87; TLI = .87; RMSEA = .13). However, all covariances in the model were significant at the  $p < .003$  to  $p < .0001$  level, indicating that all latent

variables in the model were significantly related and were appropriate for use in a mediational model. To improve model fit for the measurement model, three pairs of covariates for the error terms were modeled based on theoretical assumptions (e.g., same reporter and same measure errors should covary) and by examination of the Lagrange and Wald test modification indices generated in Proc Calis. The revised measurement model showed a marginally acceptable fit ( $\chi^2(106) = 212.91, p < .0001$ ; NFI = .91; TLI = .93; RMSEA = .09; RMSEA Confidence Interval = .07 to .11) (Figure 16, Appendix D).

### *Proposed Mediational Model*

*Hypothesis 1.* The latent constructs of PTSD Symptoms and Aggressive Cognitions were both expected to independently and collectively serve as partial or full mediators in the relationship between violent trauma exposure and violent behaviors.

As demonstrated by the positive associations in the measurement model, the three conditions needed to test the proposed mediational effects of PTSD symptoms and Aggressive Cognitions were met: 1) the predictors, Home and Community Violence, were related to the criterion, Aggression; 2) each of the mediators, PTSD symptoms and Aggressive Cognitions, were also be related to the criterion variable, Aggression; and 3) each of the two mediators were related to the predictor variables, Home Violence and Community Violence (Baron & Kenny, 1986).

To examine these relationships in the context of the full model, three separate sets of structural models were examined. The first set of models tested the direct effect between the predictor and the criterion for each predictor variable and found that both Community and Home Violence were directly related to Aggression in the sample. Path coefficients for the direct relationships were respectively,  $\beta = .54$  ( $p < .0001$ ) and  $\beta = .62$

( $p < .0001$ ) for Community and Home Violence with Aggression. Acceptable model fits for these models were achieved by modeling covariances between traumatic violence and indirect violence error terms for both Community (CTrV and CInV) and Home (HTrV and HInV) Violence.

The second pair of models tested the potential mediational role of PTSD symptoms in the predictor-criterion relationship. In addition, Sobel's test of mediated effects was calculated to assess the significance of the indirect effect (Sobel, 1982). Figures 3 and 4 include 2 sets of correlated error terms (TrV with InV and CritA with CritB) to optimize model fit. Figure 3 shows that PTSD symptoms significantly mediated the relationship between Community Violence and Aggression with the direct path coefficient being reduced from .54 ( $p < .0001$ ) to .37 ( $p < .002$ ) [Sobel  $t(1) = 2.43$ ,  $p < .02$ ], whereas Figure 4 shows that PTSD symptoms did not significantly mediate the Home Violence and Aggression relationship, although direct path coefficient decreased from .62 ( $p < .0001$ ) to .57 ( $p < .0001$ ), [Sobel  $t(1) = 1.91$ ,  $p < .06$ ].

The third pair of models, each with 4 correlated error terms, tested the mediational role of Aggressive Cognitions (Figures 5 & 6). Aggressive Cognitions fully mediated the relationship between Community Violence and Aggression ( $\beta = .03$ ,  $p < .80$ ), and partially mediated the relationship between Home Violence and Aggression ( $\beta = .33$ ,  $p < .04$ ). Path coefficient decreases for Community and Home Violence ( $\Delta = -.51$ ,  $\Delta = -.29$ , respectively) were significant according to Sobel t-tests [ $t(1) = 2.92$ ,  $p < .003$ ;  $t(1) = 2.15$ ,  $p < .03$ ].

The overall fit of each model was examined using goodness of fit indices and the Chi-square statistic (Table 10). In sum, Aggressive Cognitions was the strongest mediator

of the direct path between both Community Violence and Home Violence and Aggression (Figures 5 & 6). Unexpectedly, the PTSD Symptoms construct was not a significant mediator between Home Violence and Aggression. Nonetheless, PTSD symptoms were a significant mediator in the relationship between Community Violence and Aggression, lending support to the hypothesis that post-trauma distress as well as aggressive cognitions serve as significant mediators in the cycle of violence exposure and violent perpetration.

#### *Full Mediation Model*

The proposed structural model represents an extension of the mediational model presented above. The structural model addresses the potential role of context of exposure by joining both Community Violence and Home Violence together in one mediational model utilizing both PTSD Symptoms and Aggressive Cognitions as potential mediators. Again, the direct paths (i.e., dotted lines) between violence exposure variables and Aggression as well as indirect paths with PTSD symptoms and Aggressive Cognitions as mediating variables were fitted. The structural model (Figure 7) with seven error covariates showed an acceptable fit ( $\chi^2(103) = 186.32, p < .0001; NFI = .92, TLI = .95, RMSEA = .08$ ). However, an examination of path coefficients in the full structural model (Figure 7) indicated that the direct path between Home Violence and PTSD Symptoms and the direct path between Community Violence and Aggressive Cognitions were not significant ( $\beta = .04, p < .82$ ) and ( $\beta = .29, p < .12$ ), respectively. Model modifications reflecting the removal of four non-significant paths (dashed paths) from the structural model essentially maintained the same model fit ( $\chi^2(107) = 190.36, p < .0001; NFI = .92; TLI = .95; RMSEA = .08$ ), but the revised model resulted in non-significant direct paths



between Violence Exposure and Aggression (Community Violence,  $\beta = -.29$ ,  $p < .07$ ; Home Violence,  $\beta = .30$ ,  $p < .10$ ). Again, the two nonsignificant paths (dotted paths) were dropped and with 109 degrees of freedom,  $\chi^2 = 193.68$  ( $p < .0001$ ) but all other fit indices remained unchanged as compared to the model with 107 degrees of freedom. The Lagrange multiplier and Wald tests were examined using Proc Calis in SAS; however, the recommended path modifications (i.e., dropping AggPers error term, dropping PhysAgg indicator of Aggression) did not result in a better model fit.

In sum, the structural model (Figure 7) shows that when the correlated path between Community and Home Violence is fitted, the relationship between Community Violence and Aggression is fully mediated by PTSD symptoms, whereas the relationship between Home Violence and Aggression is fully mediated by Aggressive Cognitions. Next, we examine the relationship between the two mediators to determine if a direct path between mediators exists and whether fitting this path is likely to improve the fit of the full structural model.

#### *The Relations between Both Mediators*

*Hypothesis 2.* Due to the presence of the arousal component of PTSD and the potential for aggressive interpretations of such aroused states, it was hypothesized a priori that a direct path exists between PTSD symptoms and Aggressive Cognitions. In addition, the presence of a direct path between trauma symptoms and aggressive cognitions could also provide a post hoc explanation of the failure to find an additive mediating effect in full structural model.

Examining the bivariate relationship between the latent constructs of PTSD symptoms and Aggressive Cognitions we found a significant positive relationship ( $\beta =$

.41,  $p < .001$ ) and an excellent model fit [ $\chi^2(15) = 16.32$ ,  $p < .36$ ; NFI = .99; TLI = 1.0; RMSEA = .02; Figure 8]. On the other hand, efforts to fit a model examining the manifest arousal component of PTSD (Criterion D) with latent Aggressive Cognitions resulted in a significant direct path ( $\beta = .71$ ,  $p < .0001$ ) but a very poor fit (RMSEA = .40). However, Pearson correlations show that even after the conservative Bonferroni correction, arousal symptoms were in fact significantly related to the acceptance of female-on-male violence ( $r = .33$ ,  $p < .0003$ ) and a positive attitude towards a culture of violence (e.g., gang violence) ( $r = .41$ ,  $p < .0001$ ). Arousal symptoms of PTSD were also marginally related to acceptance of male-on-female violence and a positive attitude towards reactive violence ( $r_s = .26$ ,  $p < .006$ ) (see Table 7). Thus, one might conclude that as predicted, the arousal symptoms of PTSD are positively related to aggressive attitudes; however, all components of PTSD together serve as a better predictor of the Aggressive Cognitions construct.

Based on our hypothesis, a direct path between PTSD Symptoms and Aggressive Cognitions was added to the model depicted in Figure 7. The new model (Figure 9) required the elimination of the direct PTSD Symptoms to Aggression path, but the model fit ( $\chi^2(109) = 194.61$ ,  $p < .0001$ ; NFI = .92; TLI = .95; RMSEA = .08) remained essentially unchanged as compared to the final Figure 7 model. Thus, the model in Figure 7 (as depicted by the solid lines) was retained and used for further comparisons. For comparison, the fit indices of all models nested within the full model are provided in Table 11.

*Alternate Models*

*Home violence as a precipitator.* To determine if the proposed model provided the best model fit, several alternate models were tested. First, given the relationship between Home Violence and Aggressive Cognitions in the full model, it was posited that violence outside of the home might occur secondary to at-home violence exposure and acceptance of violence. Therefore, the correlational path between Home Violence and Community Violence was eliminated and a direct path from Aggressive Cognitions to Community Violence was fitted. Conceptually, youth who are exposed to violence at home might be more apt to develop pro-violent attitudes and therefore might be less likely to avoid community situations that lead to violence exposure (e.g., gang related violence). Figure 10 depicts a model in which Home Violence is indirectly associated Aggression through direct relations with Aggressive Cognitions and Community Violence. The fit indices ( $\chi^2 (108) = 191.68$ , NFI = .92, TLI = .95, RMSEA = .08) are essentially the same as the proposed model (Figure 7) with  $\chi^2$  reduction of 2.00 with a decrease of 1 degree of freedom. Dropping the direct path between Home Violence and Community Violence (dashed line) from the alternate model (Figure 10) resulted in fit indices ( $\chi^2 (108) = 210.51$ , NFI = .91, TLI = .94, RMSEA = .09) that were poorer than those found for the previous models (see Figure 11, Appendix D). Similarly, a poor fit ( $\chi^2 (110) = 243.37$ , NFI = .90, TLI = .92, RMSEA = .10) was found for the model in which the indirect paths between Home Violence and Aggression are mediated only through the direct relationship of Aggressive Cognitions and Community Violence (see Figure 12, Appendix D). Of note, when the direct path between PTSD Symptoms and Aggression is removed, the relation between Community Violence and Aggression is positive, whereas

that same relationship is negative for all models with direct PTSD Symptoms to Aggression paths.

In sum, the Figure 7 illustrates the best model fit. As proposed, PTSD symptoms and Aggressive Cognitions serve as significant mediators in the relationship between violence exposure and perpetration of violence in youth. Furthermore, the mediation effects differ across context of exposure. Aggression related to Home Violence exposure is mediated by pro-violence attitudes but not post-trauma symptoms, and Aggression related to Community Violence exposure is mediated by post-trauma symptoms but not by pro-violence attitudes. However, as illustrated in Figure 10, exposure to Community Violence might in fact be a downstream variable to Home Violence and Aggressive Cognitions.

#### *Model Variance by Sex*

Multi-group modeling was conducted to assess if the path coefficients of the final structural model (Figure 7) were invariant across sex. SEM showed that for girls, none of the 5 indicators of Aggressive Cognitions were significant predictors of the factor. Thus, Aggressive Cognitions was not a meaningful construct for girls and therefore, was not significantly related to Home Violence exposure or to Aggression. On the other hand, PTSD symptoms was a more robust predictor of Aggression for girls ( $\beta = .59, p < .0001$ ) than for the full sample model ( $\beta = .19, p < .02$ ). For boys, all 5 indicators of Aggressive Cognitions were significant and Aggressive Cognitions were significantly related to Home Violence ( $\beta = .67, p < .0001$ ) and Aggression ( $\beta = .58, p < .001$ ). However, PTSD symptoms was not a significant predictor of Aggression for boys, but did show a positive

trend ( $\beta = .19, p < .07$ ). Figures 13 and 14 (Appendix D) illustrate the parameter coefficients found for girls and for boys, respectively.

Due to the small sample of only 62 girls and 61 boys, hierarchical regression analysis was conducted to further assess model invariance. When Community Violence and Home Violence were used as predictors of the Aggression composite (i.e., composite of Aggression on People and Other Aggression), Community Violence was positively related to Aggression in girls [ $t(1) = 2.10, p < .04$ ], but surprisingly, Home Violence was not [ $t(1) = -.31, ns$ ]. The first regression model using both contexts of violence as predictors of Aggression in girls was significant [ $F(2, 52) = 3.11, p < .05$ ] and accounted for 11% of the variance. When the composites of both mediators, PTSD symptoms and Aggressive Cognitions, were added to the regression model, PTSD symptoms was the only significant predictor of Aggression in girls [ $t(1) = 2.96, p < .005$ ]. The overall model was significant and accounted for 33% of the variance in Aggression for girls [ $F(4, 52) = 5.65, p < .0008$ ].

In contrast, hierarchical regression analyses showed that for boys when violence exposure variables were entered as predictors of aggression, Home Violence and not Community Violence was a significant predictor of Aggression [ $t(1) = 2.10, p < .04$ ;  $t(1) = 1.65, ns$ ; respectively], with the overall model accounting for 35% of the variance [ $F(2, 49) = 12.54, p < .0001$ ]. When mediator variables were added to the model, Aggressive Cognitions and not PTSD were significant predictors of Aggression in boys [ $t(1) = 1.99, p < .05$ ;  $t(1) = 1.50, ns$ ; respectively] and the overall model accounted for 44% of the variance in Aggression for boys [ $F(4, 49) = 8.79, p < .0001$ ].

In sum, hierarchical regression analyses confirmed that the mediational model presented in Figure 7 varies across sex, with Aggression in girls being linked to Community Violence and PTSD symptoms and Aggression in boys being linked more strongly to Home Violence and Aggressive Cognitions. In addition, hierarchical regression analyses indicate that PTSD symptoms fully mediate the relationship between community violence and aggression in girls, whereas aggressive cognitions fully mediate the relationship between home violence and aggression in boys.

### Secondary Analyses

Next, secondary analyses examine hypothesized bivariate relationships.

#### *Sex Differences in Violence Exposure*

*Hypothesis 3.* Based on previous findings that girls are more likely to be exposed to interpersonal violence at home, whereas boys are more likely to be exposed to violence outside of their home, it was hypothesized that there would be a significant interaction between sex and ecological context, with girls reporting higher levels of in-home exposure to violence, and boys reporting higher levels of community exposure to violence.

Descriptive statistics of all predictor measures were compared for boys and girls (see Table 12). Contrary to hypothesis, on a macro level, t-test analysis showed there was no significant sex difference in exposure to home violence [ $t(1) = 1.60$ , ns]. However, unexpectedly there was a trend towards more boys than girls being exposed to traumatic violence at home [ $t(1) = 1.78$ ,  $p < .08$ ]. This trend did not hold true for exposure to home indirect violence or physical and verbal abuse [ $t(1) = 1.25$ , ns,  $t(1) = 1.34$ , ns, respectively]. For community violence, there was a trend in the expected direction, with

boys experiencing more community violence [ $t(1) = 1.74, p < .08$ ] than girls. This trend was accounted for by significant sex differences in community exposure to physical and verbal abuse [ $t(1) = 2.53, p < .01$ ] and traumatic violence [ $t(1) = 3.30, p < .001$ ], but not indirect violence [ $t(1) = .64, ns$ ].

### *Violence Exposure and PTSD*

*Hypothesis 4. It was further hypothesized that independent of the socio-ecological context of violence exposure, exposed-children will experience posttraumatic stress symptoms at a rate that exceeds that of the general youth population (6.3%; Giaconia, et al., 1995).*

To meet Criterion B, C, or D of the PTSD construct (APA, 1994), participants had to endorse the appropriate number of items as occurring “often,” or “almost always” in the past month. Criterion B requires the endorsement of at least one Re-experiencing symptom, whereas Criterion C requires at least 3 Numbing/Avoidance symptoms and Criterion D requires 2 or more Arousal symptoms. More than 28% of participants respectively met Criterion B and Criterion C, whereas almost 44% of participants met Criterion D. Overall, 16.3% ( $n = 20$ ) of the sample met all three symptom criteria of the DSM-IV PTSD construct (APA, 1994). Comparatively, when the recommended cut-off score of 38 and higher was utilized, approximately 14.5% ( $n = 18$ ) of the sample had clinically significant PTSD symptoms.

Although 14.5% and 16.3% are merely estimates of youth who meet symptom criteria, one can speculate that the rate of PTSD symptoms in this violence-exposed sample exceeds the 2.8% to 10.3% rates of diagnosis found in the general youth population (Giaconia, et al., 1995; Kessler, et. al., 1994; Kilpatrick, et. al., 2003). Of

note, only 4 youth in our sample reported experiencing no exposure to community, home or war violence. For un-exposed youth, PTSD scores (i.e., 0, 2, 3, and 16) were well below both the sample mean of 21 and the recommended clinical cut-off of 38.

*Hypothesis 5.* Exposure to violence and victimization within the home will be related to higher levels of PTSD symptoms than exposure and victimization that occurs outside of the family home. Differences in the strength of the relationship between the different ecological contexts of violence and trauma symptomology are expected to remain significant even after controlling for sex differences.

Both SEM and multiple regression analysis showed that contrary to hypothesis, community violence was a better predictor of PTSD symptoms as compared to home and war violence. In fact, as seen in the full structural model, after controlling for community violence, home violence was not a significant predictor of PTSD symptoms. However, multiple regression analyses show that both community violence and war violence were significant predictors of PTSD symptoms [ $t(1) = 3.17, p < .002$ ] and [ $t(1) = 2.10, p < .04$ ], respectively.

Post hoc analyses included the addition of higher order quadratic terms to multiple regression analyses. These analyses indicated that home violence but not community violence had a significant curvilinear relationship with PTSD symptoms [ $t(1) = 2.75, p < .007$ ;  $t(1) = -2.53, p < .01$ ; linear and curvilinear, respectively]. Moderate levels of home violence exposure were associated with high levels of PTSD symptoms, whereas both low and high levels of home violence exposure were associated with lower levels of PTSD.



As discussed in the literature review, studies have shown differential rates of PTSD symptoms for boys and girls. To control for potential sex differences in the data, a third multiple regression analysis controlled for sex. Community and Home Violence remained significant predictors of PTSD after controlling for sex [Community,  $t(1) = 3.37$ ,  $p < .001$ ; linear Home Violence,  $t(1) = 2.76$ ,  $p < .007$ ; quadratic Home Violence  $t(1) = -2.51$ ,  $p < .01$ ] and War Violence was a marginal predictor of PTSD after controlling for sex [ $t(1) = 1.85$ ,  $p < .06$ ].

Overall, 27% of the variance in PTSD symptoms was accounted for by violence exposure alone (i.e., war, community, home violence), whereas less than 6% of the variance was attributed to demographics (i.e., sex, age, ethnicity).

#### *Aggressive and Depressive Cognitions*

*Hypothesis 6.* Youth who experience violence within the home will experience more depressive symptoms, and a stronger negative internal attributional style (e.g., hopelessness) than youth exposed to violence outside of the family home. On the other hand, youth who experience violence outside of the home (e.g., community and war violence) are expected to manifest more externalizing symptoms and show a stronger aggressive cognitive style.

A series of linear regression analyses with Aggressive Cognitions (ACV and ATVS composite), Depressive Symptoms (CDI-S), and Hopelessness (HSC) indicate that in contrast to hypothesis, in-home exposure to violence was more strongly related to aggressive cognitions ( $\beta = .51$ ,  $p < .0001$ ) than to depression ( $\beta = .21$ ,  $p < .02$ ) and hopelessness ( $\beta = .11$ , ns). Post hoc analysis with the inclusion of the quadratic term for home violence showed a curvilinear relationship between home violence and depression

( $\beta = .77, p < .003$ ;  $\beta = -.59, p < .02$ , respectively, for linear and curvilinear terms). Thus, exposure to home violence does in fact have a stronger relationship with depressive symptoms/cognitions, albeit a curvilinear one in which only moderate levels of home violence exposure are associated with high levels of depression. As predicted, community violence exposure was more strongly related to aggressive cognitions ( $\beta = .43, p < .0001$ ) than to depressive cognitions ( $\beta = .29, p < .001$ ) and hopelessness ( $\beta = .22, p < .03$ ), and re-analyses with the inclusion of the quadratic term indicated that there were no significant curvilinear relationships between community violence and either aggressive or depressive cognitions.

Given the high correlation between Community and Home Violence exposure ( $r = .69, p < .0001$ ), multiple regression analyses controlling for the alternate type of violence exposure were examined. After controlling for Community Violence, Home Violence remained significantly related to both Aggressive Cognitions ( $\beta = .42, p < .0005$ ) and Depressive Cognitions ( $\beta = .56, p < .04$ ;  $\beta = -.57, p < .02$ ; linear and quadratic terms, respectively). Conversely, after controlling for Home Violence, Community Violence was significantly related Depressive Cognitions ( $\beta = .27, p < .03$ ) and Hopelessness ( $\beta = .25, p < .05$ ) but not to Aggressive Cognitions ( $\beta = .14, ns$ ). Thus, in contrast to hypothesis, exposure to violence outside of the home was more strongly related to negative internal attributions (i.e., Depressive Cognitions, Hopelessness) than to external attributions (i.e., Aggressive Cognitions), whereas in-home exposure to violence was related to both types of cognitions.

Given the relationship between predictors and depressive symptoms, as well as the high correlation between PTSD symptoms and depressive symptoms, a two-indicator

(i.e., CDI-S HSC) factor of Depressive and Hopelessness was added to the full structural model depicted in Figure 15 (Appendix D) to examine if the inclusion of depressive symptoms would account for additional variance in the model and improve the model fit. In Figure 13 the Depression and Hopelessness factor serves as an intervening variable between PTSD symptoms and Aggressive Cognitions ( $\chi^2 (141) = 242.81$ ; NFI= .91; TLI= .94; RMSEA= .08). As a measure of the most parsimonious fit the Akaike Information Criterion (AIC) index was examined for models depicted in Figures 7 and 15. The structural model without Depression and Hopelessness proved to be a more parsimonious model (AIC (109) = 315.68) than the structural model with Depression and Hopelessness (AIC (141) = 378.82). Of note, inclusion of the quadratic term to illustrate the curvilinear relationship between Home Violence with PTSD symptoms and Depression/ Hopelessness resulted in a poor model fit.

## DISCUSSION

Our study utilized a social-cognitive framework to examine the role of posttraumatic stress symptoms and aggressive cognitions in youth reports of violent experiences and violent behaviors. In doing so, this study joins the growing literature that focuses on mental health symptoms, particularly traumatic stress symptoms, in relation to delinquency in youth (Abram et al., 2004; Schwab-Stone et al., 1999). Social learning and social cognitive theories of violence posit that violent and aggressive behaviors that are modeled by others are likely to be incorporated into one's behavioral repertoire if they serve an instrumental function (Bandura, 1973). Widom (1989) and others have empirically demonstrated this exposure-perpetration cycle. In addition, factors such as anger expression (Wolf & Foshee, 2003) and cognitive biases (Halliday-Boykins & Graham, 2000; Schwartz & Proctor, 2000) have been forwarded as potential social-cognitive mechanisms of violence transmission.

This study replicates and extends the findings of earlier studies, and in doing so incorporates several unique aspects in the investigation. One, to date, there are no known studies that examine the intervening roles of symptoms and violence-beliefs within multiple contexts of violence exposure and aggressive behaviors. Two, the sampling of ethnically diverse, early adolescent youth from working class communities might capture a more normative behavioral pattern as compared to incarcerated youth or older African American adolescents sampled in earlier studies (Fitzpatrick & Boldizar, 1993; Halliday-Boykins & Graham, 2000). Three, at the mean age of 13 it is unlikely that the participants in this study exhibit extreme levels of aggression and deviant behaviors that may be more

reflective of stable characteristics versus behavior that might be more malleable to environmental factors (such as violence exposure).

The primary strength of this study is that the data add not only to the evidence of the existence of the violence exposure-behavior relationship, but also supports the existence of mediating factors. Youth in our study were exposed to violence within their home and their communities, and were also participants in violent and delinquent acts. Many youth in our study expressed pro-violence cognitions and more than 14% experienced clinically significant PTSD symptoms. As proposed, pro-violence cognitions and trauma symptoms were significant mediators in the cycle of violence, although the degree of mediation varied by sex and by the context of violence exposure.

#### *Community and Home Violence Exposure*

It was hypothesized that as previously found by Flannery et al. (2001), girls would experience more violence within the family home as compared to boys. This hypothesis was not supported by our data; however, this null finding might reflect true differences between Flannery's sample of incarcerated girls and our community sample. Overall, our sample of primarily Caucasian, school-attending youth who reside in working class, urban communities had substantial rates of violence exposure, albeit, the rates were much lower than those found in some previous studies of inner city youth (Fitzpatrick & Boldizar, 1993; Hill, Levermore, Twaite & Jones, 1996; Lipschitz, Rasmusson, Anvan, Cromwell & Southwick, 2000). We found lower estimates of at-home hitting (e.g., by an age-mate, 24.4%; by a grown-up, 2.5%) as compared to Singer et al.'s (1995) multi-site study where 28%-55% of their sample had been hit, punched, or slapped at home. Our rates were also lower than those found for 3rd through 8th grade

primarily Caucasian, rural youth where more than 45% had been punched, hit, or slapped at home (Slovak & Singer, 2002). Similarly, our 5.7% rate of witnessing shootings in the community was substantially lower than the 25% to 67% found in previous studies examining small city and urban youth (Jenkins & Bell, 1994; Richters & Martinez, 1993; Singer et al., 1995).

The lower violence exposure and victimization rate in this sample underscores the importance of neighborhood factors and the role that communities might play in the protection against violence exposure. Neighborhood level components of violence exposure have been demonstrated in previous studies (Dubow, Edwards & Ippolito, 1997; Halliday-Boykins & Graham, 2001). However, neighborhood risk factors might have been confounded with levels of neighborhood violence (e.g., level of neighborhood deviance; Halliday-Boykins & Graham's, 2001) in these studies. Future studies may be necessary to ascertain which neighborhood factors (e.g., neighborhood SES, homogeneity of ethnic groups, neighborhood identity, availability of community activities) are most deleterious and most protective in the cycle of violence. Based on the available literature, explanation regarding the lower level of violence exposure in our sample is left to speculation. Nonetheless, despite the lower levels of exposure, violence exposure was predictive of violent behaviors in our sample.

#### *Cycle of Violence: Relation of Violence Exposure to Violent Behavior*

Exposure to violent trauma has been associated with weapon carrying, gang activity, incarceration, school suspensions, and other conduct problems (Jenkins & Bell, 1994, Lipschitz et al., 2001; Steiner et al., 1997; Widom, 1989). This cycle of violence has been examined by many researchers from many theoretical perspectives. The

literature is rife with genetic (Caspi et al., 2002; DiLalla & Gottesman, 1991), environmental (Nofziger & Kurtz, 2005), and cognitive (Crick & Dodge, 1994; Halliday-Boykin & Graham, 2001) explanatory models of the violence cycle. Although etiological factors cannot be clarified within the scope of the present study, our data are consistent with the “cycle of violence” phenomenon and extends the findings beyond the family violence literature.

#### *Community and Home Violence*

Our community sample of youth was exposed to multiple types of violence across multiple contexts. Youth who were exposed to high levels of violence in their homes were more likely to endorse higher levels of aggression and delinquency as compared to youth with lower levels of exposure. Similarly, youth exposed to high levels of violence in their neighborhoods were also more likely to endorse higher levels of aggressive and delinquent behaviors. Our study found that exposure to home and community violence together accounted for approximately 24% of the variance in self-reported aggression on people as well as 24% of the variance in all self-reported delinquency. These findings are consistent with previous findings that exposure accounted for 22% to 47% of the variance in violent behavior (Brown et al., 1999; Durant et al., 1994; Singer et al., 1995).

#### *War Violence*

War violence exposure was limited in our sample and did not significantly contribute to the variance in self-reported aggression or delinquency. Not surprisingly, this first attempt at gathering data regarding multi-context violence exposure was not successful in recruiting a meaningful number of war-exposed youth. Although the

association between war violence exposure and aggressive behaviors is unknown, a glimpse at the few war-traumatized youth in this sample provided some relevant data about their war experiences. The same or similar experiences occurring within the context of community or home violence have been linked to severe maladjustment. Thus, future studies will continue to examine whether the same effects occur within the context of war violence.

Our small sample of war-exposed youth reported experiencing war-time deaths of close family members and in some instances being witness to family member's killings. They also reported being witness to close range shootings, beatings, house burnings, and to seeing dead bodies. It is arguably the case that these recalled events from more than 9 years prior could have been placed or enhanced by adult "war stories" or by distorted memories. However, it is also arguable that some life-experiences, such as traumatic loss and witnessing murder are indelible (as posited by van der Kolk, van der Hart & Burbridge, 1995) and may be timelessly stored in memory (e.g., visually, verbally, viscerally) regardless of age of experience. Our findings regarding trauma symptomology in war-exposed youth suggest that regardless of the mechanism of exposure, the associated trauma symptoms are substantial. Furthermore, our mediational model suggests that trauma symptoms might be a risk factor for aggressive behaviors in youth.

#### *Mediation of Violence Reenactment*

##### *Role of Trauma Symptoms*

*Violence exposure and PTSD symptoms.* Although firm diagnostic information is not available, screening information indicated that about 14%-16% of youth in our study experienced clinically significant PTSD symptoms. Exposure to war was particularly



associated with high levels of PTSD symptoms. The mean PTSD symptom for the war sample ( $n = 11$ ;  $\mu = 30.64$ ,  $\sigma = 22.96$ ) was near equal to the third quartile for the general sample. Similar findings among larger samples of refugee youth (Arroyo & Eth, 1985; Kinzie et al., 1989) and immigrant youth (Jaycox et al., 2002) are reported elsewhere.

Of note, war-exposed youth were also exposed to non-war related violence in their communities or home. Thus, not surprisingly, youth who experienced violence across multiple contexts (war, community and home) were more likely to exhibit clinically significant levels of PTSD symptoms. Almost 30% of the variance in PTSD symptoms was accounted for by violence exposure alone (i.e., war, community, home violence), and all potentially traumatic events (e.g., violence, sexual contact, disasters, death/injury of loved one, medical procedure, etc.) accounted for almost 41% of the variance in PTSD symptoms above and beyond demographics.

As hypothesized, PTSD symptoms were not only related to violence exposure but were also related to delinquency and aggression. Our data show that demographics (i.e., age, ethnicity, sex) accounted for almost 10% of the variance in self-reported delinquency and 8% of the variance in self-reported aggression on people, whereas PTSD symptoms accounted for an additional 14% of the variance in self-reported delinquency and an additional 17% of the variance in self-reported aggression on people.

*Mediation effects of PTSD symptoms.* Moreover, as predicted, PTSD symptoms significantly mediated the relationship between violence exposure and violent behaviors. However, inconsistent with predictions, when the context of violence exposure was examined, PTSD symptoms only mediated the exposure-behavior relationship for

community violence but not for home violence. PTSD symptoms were also a stronger mediator of the exposure-behavior relationship for girls than for boys.

Failure to find a mediating effect of PTSD symptoms with home violence might in part be due to the non-linear relationship between home violence and PTSD symptoms. This violation of the assumption of normality affects the predictive power of home violence, as well as the overall model fit. Despite this caveat, the curvilinear relationship presents an interesting finding regarding youth response to home violence exposure. Two preliminary explanations might account for this non-linear relationship. One, low to moderate levels of exposure to home violence might be positively associated with internalizing symptoms (e.g., depression, anxiety, PTSD), whereas higher levels of home violence might be positively related to externalizing symptoms (e.g., aggression, conduct problems) and negatively related to internalizing symptoms. An alternate explanation is that exposure to high levels of home violence might be an artifact of more high frequency, low impact exposures (HF-LI; e.g., screamed at “all the time” = 4) as compared to lower frequency high impact exposures (LF-HI; “rarely” witness shootings = 1). Although HF-LI exposures are likely to yield higher home violence scores, these occurrences are less likely to be associated with PTSD and depressive symptoms as compared to LF-HI exposures. In other words, the most impactful instances of at-home violence exposure might be accounted for at the low to moderate levels of exposure and are likely to have a positive linear relationship with PTSD.

*Depression and hopelessness in relation to violence exposure.* We found that youth exposure to violence and other potentially traumatic events were not only related to trauma symptoms but were also significantly related to feelings of depression and

hopelessness, although to a lesser extent. Structural modeling showed that depression and hopelessness were linked to both PTSD symptoms and aggressive cognitions through a direct path *from* PTSD symptoms and a direct path *to* aggressive cognitions. However, with both trauma symptoms and aggressive cognitions in the model, depression and hopelessness were not directly related to either violence exposure or aggression. Thus, although violence exposure accounted for 15% of the variance in self-reported depression and 14% of the variance in feelings of hopelessness, structural analyses suggests that much of this variance might be shared with trauma symptoms and aggressive cognitions.

#### *Role of Cognitions*

Similar to Funk et al. (1999) we found that violence exposure was related to pro-violence attitudes in our sample. Moreover, our findings regarding the role of cognitions are consistent with Bandura (1973), Dodge et al. (1990) and Patterson's (1982) premise that alteration of cognitive processes might occur as a result of violence exposure. The differential relation of pro-violence attitudes with home versus community violence is particularly supportive of the socio-cognitive model. Both OLS and structural models indicate that youth exposed to violence at home might be more likely to accept violence as a viable strategy for interacting with peers.

*Mediating effects of aggressive cognitions.* Within violent households youth might be exposed to a culture of violence wherein family beliefs support the use of violence, and family behaviors may even serve as a training camp for violence through modeling or other learning processes (Patterson, Dishion & Banks, 1984). In support of this theory, structural models illustrate that after controlling for home violence, exposure to community violence was no longer related to aggressive cognitions. Thus, the violence

exposure relationship with aggressive cognitions was unique to home exposure.

Moreover, our structural models show that aggressive cognitions fully mediated the relationship between home violence and aggression indicating that cognitive processes that develop or sustain within violent households may play a key role in the transmission of violence across generations. However, multi-group modeling demonstrated that the mediational effect of aggressive cognitions was only supported for boys. As expected, boys were also more likely to be exposed to community violence and more likely to exhibit aggressive behaviors.

*Gender-balanced approach to aggression.* More research is needed to examine the links between exposure to aggression and commission of aggression in girls. The inclusion of assessments of relational aggression, as well as cognitive processes associated with relational aggression, is necessary for future studies. Previous studies have consistently demonstrated that aggressive behaviors in girls are displayed differently from the overt, physical aggression examined within this study. Girls have been shown to express aggression in ways that are likely to damage relationships (e.g., spreading a rumor) versus present a physical threat (Crick & Bigbee, 1998). In fact, Crick and Rose (2000) propose that studies of aggression should include relational aggression in order to have a more gender-balanced approach. Without inclusion of measures of what is more typical female expression of aggression, one could falsely conclude that girls do not engage in aggressive acts.

#### *Clinical Implications*

One of the primary aims of this study was to increase our understanding regarding how to enhance current interventions in the cycle of youth violence exposure and

violence perpetration. Our findings indicate that violent behaviors in youth are associated not only with violence exposure, but also with trauma symptoms and with cognitive distortions regarding the effectiveness of violence. These findings are relevant for the assessment and treatment of youth referred due to exposure to violence as well as for referred youth who exhibit violent behaviors. Violence-exposed youth should be screened for both trauma symptoms and trauma-related cognitions, including pro-violence attitudes. Similarly, youth who exhibit violent behaviors should be screened for trauma exposure, trauma symptoms, and pro-violence attitudes. Our findings show that boys might be more likely to endorse pro-violence cognitions as compared to their female counterparts, whereas girls might endorse higher levels of trauma symptoms than boys. When indicated, trauma treatment could help to alleviate both symptoms and cognitive biases that are associated with aggression in youth, thereby reducing the likelihood of aggressive behaviors.

#### *Cognitive Processing in Trauma Treatment*

Although the DSM-IV PTSD construct was not intended to capture symptomology associated with diffuse or compounded stress and trauma in youth, it is clear that like exposure to single-type or single-event traumas, youth who experience compounded trauma and violence, often experience significant trauma symptoms. Despite the similarities in symptom presentation, clinical interventions aimed at treating compounded violence exposure might be qualitatively different from interventions focused on alleviating symptoms associated with single-type or single-event traumas.

One aspect of trauma treatment that require adaptation for violence-exposed youth, especially boys and youth exposed at home, is the inclusion of cognitive

processing and psychoeducation modules that address aggressive cognitions including possible hostile attentional biases. For example, our findings regarding the links between at-home exposure to violence and aggressive cognitions, suggest that cognitive processing of family beliefs and family loyalty related to use of violence might be an essential treatment component.

Overall, our sample of pre- and early- adolescents, pro-violence attitudes accounted for 24 % of the variance in aggressive behaviors after controlling for demographics. Twenty-eight percent of youth in our sample endorsed positive attitudes towards having weapons and almost 14% indicated that people who use violence get respect. Such attitudes require education regarding the wide-spread harm associated with violence, as well as education regarding alternative strategies for protection and respect.

#### *Trauma Information in Community Interventions*

Although the integration of educational and cognitive strategies into child/adolescent trauma treatment is essential, individual and family clinical interventions cannot be the only course of treatment. The prevalences of violence exposure and violent peer interaction indicate that interventions aimed at countering the effects of violence exposure must be able to address the epidemic nature of the problem and must take a primary epidemiological approach in its delivery, as well as a secondary clinical approach.

To illustrate the pervasiveness of aggression in youth peer interactions, studies now show prevalence of adolescent dating violence as high as 25% (Foshee et al., 1996). To address dating violence as well as other forms of youth aggression, both primary and secondary interventions are necessary and primary interventions must be packaged for

delivery to groups of children and adolescents, as well as to adult caretakers and educators. Similar to the integration of education and other cognitive strategies in clinical interventions, it is necessary to include information regarding the effects of trauma in community approaches. Epidemiological approaches would also benefit from further understanding of neighborhood protective factors that help to account for differences in the prevalence of violence exposure. These protective factors could then be developed or enhanced in neighborhoods that are deemed at greater risk. The development of neighborhood interventions is particularly important given that families within at-risk communities are likely to have limited resources and limited access to mental health care.

#### *Limitations*

Despite the strengths of this study, there are several aspects of this study that limit generalizability. The most notable caveat is the non-random recruitment of students and the virtual absence of a subsample of refugee participants. Although efforts were made to randomly recruit middle and high school students from school districts with a sizable refugee population, the sample was in fact composed of a self-selected sample from two self-selected middle schools with few refugee students. Thus, although almost 100% of the sample reported at least one type of violence exposure and over 14% reported significant symptoms of PTSD, it is likely that both exposure and symptoms are lower for this self-selected sample as compared to random sampling in larger urban areas.

Although sampling concerns exist, it is notable that this self-selected sample still reported experiences of violence in their communities and in their home. It is even more notable that war-exposed youth were sampled within districts that reported having almost none, or very few students who were refugees. Therefore, the sampling limitations

highlight the fact that violence exposure and the presence of refugee youth are not limited to large urban school districts but extends to smaller districts in or adjacent to large urban communities.

It is also likely that sample size resulted in low power in statistical analyses and reduced the significance of parameter coefficients and the robustness of model fit indices. Precautions to reduce Type II errors were balanced with the need to prevent Type I errors. P-values close to .05 were reported as trends and RMSEA indices with .08 within the confidence interval were reported as acceptable model fits.

In addition, this cross-sectional study is unable to establish temporal sequencing of events. Although structural models imply causal relationships and temporal ordering, it is not known if violence exposure occurred before the presence of violent behaviors. Similarly, it is unknown if trauma symptoms and aggressive cognitions emerged after violence exposure but before violent behaviors.

Another limitation of this study is the reliance on self-reported experiences, symptoms, and behaviors. Although teacher report of participant adjustment was provided for most of the sample, there are many student experiences and behaviors to which teachers are not privy and are therefore unable to report. However, any effort to obtain parental reports of experiences and behaviors of participants and might have led to lower participation rates due to the sensitive questions regarding violence exposure and commission. Although this limitation is noteworthy, it is unlikely that the data was negatively affected by adolescent self-report. Previous studies have shown that parents are not reliable reporters of their children's trauma experiences (Hill & Jones, 1997). Studies have also shown low to moderate the concordance rates between parental report



and child-report of internalizing symptoms (Cantwell, Lewinsohn, Rohde & Seeley, 1997; Mesman & Koot, 2000). Low concordance has also been shown for teacher versus child-report (Mesman & Koot, 2000) and is also illustrated in this study. Thus, despite the potential limitations, youth-report is likely the most reliable source for violence exposure experiences, symptoms, cognitions, and violent behavior participation.

Finally, demographic information in this study is limited to sex, grade, school and ethnicity. Socioeconomic status of participants was not obtained, thus it is unknown whether socioeconomic factors (e.g., parental education) play a role in the mediation of violent behaviors.

#### *Future Studies*

This and previous studies have shown multigenerational patterns of violence, however the mechanism of transmission remains unclear. Future studies should continue to examine which variables are most salient in the transmission of violence and should continue efforts to parse out the portion of violent behavior that may be lessened by environmental and cognitive-behavioral interventions.

One, perhaps the most important challenge in this line of research is the development of longitudinal studies. Future studies should try to establish temporal precedence between violence exposure and violent behaviors. Previous studies have shown that violence exposure in childhood is associated with violent crimes and arrests in adulthood (Widom, 1989). However, given the time lag between exposure and behavior, as well as the known methodological problems with retrospective studies, longitudinal examinations in this area are still needed to demonstrate that violence exposure precedes youth violent behaviors, as well as precedes trauma symptoms and aggressive cognitions.

Alternate models suggest that a biologically aggressive child could interact with their environment in a way that leads to subsequent exposure to violence. Thus, the establishment of temporal sequencing is necessary in the assessment of the developmental course of aggressive behaviors and also necessary for the advancement of the most effective interventions.

Two, although there is an association between in-home violence and youth acceptance of violence, it remains unclear if youth acceptance of violence is correlated with parents' view of violence or if there is a more causal relationship. In one study of hostile attributional bias in mothers and their children, MacBrayer, Milich and Hundley (2003) found that mothers' attributional biases were significantly related attributional biases of their aggressive daughters but not of their aggressive sons. Thus, future studies are needed to directly examine the association between parent and child attributional biases and acceptance and use of violence. A greater understanding of this association may help to advance the social-cognitive theory of aggression transmission, and may also help to determine the utility of parents' participation in trauma-focused group or individual therapies. Future studies should also examine other parental components, including parent's symptoms of PTSD that might contribute to secondary traumatization.

Three, future studies should also focus more specifically on the roles of arousal and numbing symptoms of PTSD. Previous studies have shown a link between both arousal and numbing symptoms with externalizing behaviors, such as aggression and delinquency (Allwood et al., 2000). Conceptually, the detachment and disengagement associated with numbing symptoms might be associated with similar symptoms (e.g., lack of empathy) found in conduct disordered youth. Similarly, arousal symptoms (e.g.,

hypervigilance for environmental threat) might be associated with impulsivity and other features of youth conduct problems. This study also demonstrated a significant positive relationship between arousal and aggressive cognitions.

Finally, future research should attempt to not only examine self reported symptoms but should also add physiological measures of stress hormones (e.g., cortisol) to further assess if and how stress responses and trauma symptoms are associated with problems of conduct and aggression in youth. Thus far, low salivary cortisol levels in adolescents have been associated with aggressive behaviors and with teacher reports of conduct problems (McBurnett, Lahey, Rathouz & Loeber, 2000; Oosterlaan, Geurts, Knol & Sergeant, 2005). In addition, cortisol has been associated with the dysregulation of the arousal system that is commonly associated with PTSD as well as with syndromes generally found in childhood, such as Attention Deficit Hyperactivity Disorder, and Conduct Disorder (see Lipschitz, Morgan & Southwick, 2002 for review).

### *Conclusion*

In conclusion, this study of 123 pre- and early-adolescent youth from Midwest urban communities offers evidence of intervening factors in the cycle of violence exposure-violence perpetration. This study demonstrated that violence exposure was significantly related to PTSD symptoms, aggressive cognitions, and aggressive and delinquent behaviors in youth. PTSD symptoms and aggressive cognitions were both significant mediators in the cycle of violence but had differential effects across each violence context. Findings also indicate that the relation of trauma symptoms and aggressive cognitions to violence exposure differed for boys and girls, and suggest that interventions in the exposure-perpetration cycle require adaptable components. By

extending the violence literature to include multiple contexts of exposure as well as potential mediators we hope to spark further psychological research aimed at the identification of violence perpetuating factors that may respond to clinical and community interventions.

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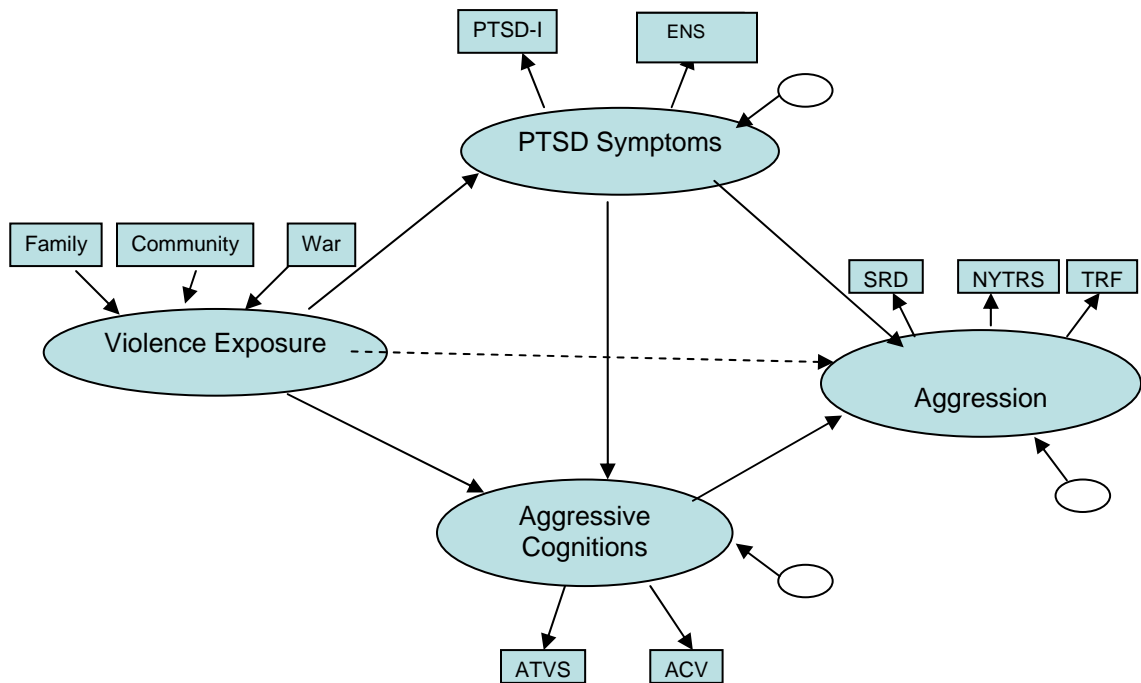
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Figure 1: Conceptual Model



Note. PTSD-I = UCLA PTSD Index; ENS-M= Emotional Numbing Scale-Modified; SRD = Self Reported Delinquency; NYTRS = New York Teacher Rating Scale; TRF = Teacher Report Form; ATVS = Attitude Towards Violence Scale; ACV = Acceptance of Couple’s Violence; HSC = Hopelessness Scale for Children.

Table 1

*Means, Standard Deviations and Range of Measures*

Measure	$\alpha$	n	Mean	sd	Range
<b>SAVE</b>					
<b>Community Violence</b> <sup>a</sup>	.91	123	18.14	13.23	0 – 64
<b>Home Violence</b> <sup>a</sup>	.88	123	6.38	7.56	0 – 31 <sup>b</sup>
<b>WEQ-R</b>	--	5 <sup>c</sup>	5.5	3.39	1 – 10
<b>PTSD-I</b> <sup>a</sup>	.94	123	21.33	17.09	0 – 65
<b>CDI-S</b>	.86	121	2.81	3.41	0 – 18
<b>HSC</b>	.79	105	3.11	3.00	0 – 16
<b>ENS-M</b>	.93	109	41.78	20.88	6– 109
<b>ATVS</b>	.83	110	15.68	6.82	5– 45
<b>ACV</b>	.87	110	3.25	4.08	0 – 20 <sup>d</sup>
<b>SRD</b> <sup>a</sup>	.92	123	8.59	10.41	0 – 50 <sup>e</sup>
<b>TRF Externalizing</b>	.91	79	4.16	6.49	0 – 33
<b>NYTRS Problem Behavior</b>	.91	80	3.66	6.39	0 – 35

*Note.* SAVE = Screen of Adolescent Violence Exposure; WEQ-R = War Experiences Questionnaire-Revised; PTSD-I = UCLA PTSD Reaction Index; HSC = Hopelessness Scale for Children; ENS-M = Emotional Numbing Scale - Modified; ATVS = Attitude Towards Violence Scale; ACV = Acceptance of Couple's Violence; SRD = Self-Reported Delinquency; TRF = Teacher Report Form; NYTRS = New York Teacher Rating Scale.

<sup>a</sup> mean frequency of occurrence; <sup>b</sup> range = 0-50 before truncation; <sup>c</sup> 5 valid responses to the WEQ-R, 6 completed the WEQ-R; <sup>d</sup> range = 0-28 before truncating; <sup>e</sup> range = 0-79 before truncating.

Table 2

Violence Exposure Frequency Dichotomized by Never vs. Other Groups

Items	Neighborhood Exposure	Home Exposure
1. I have seen someone carry a gun	32.0 <sup>c</sup>	17.9
2. I have seen the police arrest someone	75.4 <sup>d</sup>	18.7
3. I have seen a kid hit a grownup	53.7 <sup>d</sup>	13.0
4. I have seen a grownup hit a kid	59.3 <sup>d</sup>	23.0
5. I have heard about someone getting shot	45.9 <sup>d</sup>	18.7
6. I have seen someone carry a knife	59.8 <sup>d</sup>	25.2
7. I have seen people scream at each other	88.5 <sup>d</sup>	61.8
8. I have seen someone get beat up	68.9 <sup>d</sup>	22.0
9. I have heard about someone getting killed	49.6 <sup>d</sup>	13.8
10. I have heard about someone getting attacked by a knife	37.7 <sup>d</sup>	6.5
11. I have heard about someone getting beat up	71.5 <sup>d</sup>	26.0
12. I hear gun shots	33.9 <sup>d</sup>	8.1
13. I have run for cover when someone started shooting	10.6 <sup>c</sup>	2.4
14. I have heard of someone carrying a gun	37.7 <sup>d</sup>	13.0
15. Someone has pulled a gun on me	6.6 <sup>b</sup>	0.8
16. I have seen someone get killed	4.1	1.6
17. Someone has pulled a knife on me	6.5	4.1
18. I have had shots fired at me	4.1	3.3
19. I have seen someone get shot	5.7	2.4
20. I have been shot	0.0	0.0
21. I have seen someone pull a gun on someone else	8.9 <sup>b</sup>	2.4
22. I have seen someone pull a knife on someone else	17.9 <sup>d</sup>	4.1
23. I have been badly hurt	23.6 <sup>a</sup>	14.6
24. I have seen someone get attacked with a knife	9.0 <sup>b</sup>	2.5
25. I have seen someone get hurt badly	36.9 <sup>d</sup>	13.0
26. Grownups beat me up	4.1	3.3
27. Someone my age has threatened to beat me up	62.3 <sup>d</sup>	21.1
28. Grownups hit me	7.3 <sup>a</sup>	2.5
29. Grownups threaten to beat me up	10.6 <sup>a</sup>	4.9
30. Someone my age hits me	42.6 <sup>d</sup>	24.4
31. Grownups scream at me	40.6	32.8
32. I have been attacked with a knife	2.4	1.6

<sup>a</sup> p < .05, <sup>b</sup> p < .01, <sup>c</sup> p < .001, <sup>d</sup> p < .0001

Table 3

Percent Experiencing Traumatic Events Measured by the UCLA PTSD Index

<b>Traumatic Events</b>	<b>Percentage</b>
Death/Injury of a Loved One	56.1
Disaster	41.8
Medical Treatment	22.8
Accident	14.8
War	9.0
Seeing Dead Bodies	8.2
Unwanted Sexual Contact	6.6
Earthquake	2.5
Other Events	39.0



Table 4

Percent of Self-Reported Delinquency Dichotomized by Never vs. Ever

Items	Ever
1. damaged/destroyed property belonging to parents or other family members	31.7
2. damaged/destroyed property belonging to a school	15.3
3. damaged/destroyed other property that did not belong to you	21.0
4. stolen (or tried to steal) a motor vehicle, such as a car or motorcycle	1.6
5. stolen (or tried to steal) something worth more than \$50	4.8
6. knowingly bought, sold or held stolen goods (or tried to do any of these things)	8.2
7. thrown objects (such as rocks, snowballs, or bottles) at cars or people	51.2
8. run away from home	13.7
9. lied about your age to gain entrance or to purchase something	27.6
10. carried a hidden weapon other than a plain pocket knife	5.7
11. stolen (or tried to steal) things worth \$5 or less	27.6
12. attacked someone with the idea of seriously hurting or killing him/her	8.9
13. excluded item	---
14. been involved in gang fights	4.8
15. sold marijuana or hashish (“pot,” “[weed],” “hash”)	1.6
16. cheated on school tests	47.2
17. hitchhiked where it was illegal to do so	2.4
18. stolen money or other things from parents or other family members	21.0
19. hit (or threatened to hit) a teacher or other adult at school	2.4
20. hit (or threatened to hit) one of your parents	10.5
21. hit (or threatened to hit) other students	41.5
22. been loud, rowdy, or unruly in a public place (disorderly conduct)	45.2
23. sold hard drugs, such as heroin, cocaine, or LSD	0.0
24. taken a vehicle for a ride (drive) without the owner’s permission	5.6
25. had (or tried to have) sexual relations with someone against their will	1.6

Table 4 continued

Table 4 (cont.)

Percent of Self-Reported Delinquency Dichotomized by Never vs. Ever

Items	Ever
26. used force (strong-arm methods) to get money or things from other students	3.2
27. used force to get money or other things from a teacher or other adult at school	0.8
28. used force to get money or other things from other people (not students or teachers)	2.4
29. avoided paying for such things as movies, bus rides, and food	20.3
30. been drunk in a public place	7.3
31. stolen (or tried to steal) things worth between \$5 and \$50	16.3
32. stolen (or tried to steal) something at school	13.0
33. broken into a building or vehicle (or tried to break in) to steal or just look around	7.3
34. begged for money or things from strangers	11.4
35. skipped classes without an excuse	14.5
36. failed to return extra change that a cashier gave you by mistake	28.7
37. been suspended from school	16.4
38. made obscene telephone calls, such as calling someone and saying dirty things	28.2
39. alcoholic beverages (beer, wine, hard liquor)	25.8
40. marijuana—hashish (“weed,” “grass,” “pot,” “hash”)	8.9
41. hallucinogens (“Mushrooms” “LSD,” “Mescaline,” “Acid”)	0.0
42. methamphetamines (“Meth,” “Ice” or amphetamines (“Uppers,” “Speed,” “Whites”)	1.6
43. barbiturates (“Downers,” “Reds”)	0.0
44. heroin (“Horse,” “Smack”)	0.0
45. cocaine (“Crack,” “Coke”)	0.0

Table 5

Intercorrelations of Measures

Measures	1	2	3	4	5	6	7	8	9	10	11
<b>1. Community Violence</b>	---										
<b>2. Home Violence</b>	.69***	---									
<b>3. PTSD-I</b>	.44***	.35***	---								
<b>4. CDI-S</b>	.29**	.21 <sup>t</sup>	.64***	---							
<b>5. HSC</b>	.22 <sup>t</sup>	---	.44***	.61***	---						
<b>6. ENS-M</b>	---	.24 <sup>t</sup>	---	---	---	---					
<b>7. ATVS</b>	.42***	.46***	.16 <sup>t</sup>	---	---	.25 <sup>t</sup>	---				
<b>8. ACV</b>	.30***	.36***	.20*	---	.21 <sup>t</sup>	.31**	.50***	---			
<b>9. SRD</b>	.46***	.44***	.33**	.32***	---	---	.57***	.33**	---		
<b>10. TRF Externalizing</b>	---	---	---	---	---	.31 <sup>t</sup>	---	---	---	---	
<b>11. NYTRS (Maladjustment)</b>	---	---	---	---	---	---	---	---	---	.91***	---

*Note: PTSD-I = UCLA PTSD Reaction Index; HSC = Hopelessness Scale for Children; ENS-M = Emotional Numbing Scale - Modified; ATVS = Attitude Towards Violence Scale; ACV = Acceptance of Couple's Violence; SRD = Self-Reported Delinquency; TRF = Teacher Report Form; NYTRS = New York Teacher Rating Scale.*

<sup>t</sup>= p < .05, \* p < .005, \*\* p < .001, \*\*\* p < .0001; Bonferroni Correction applied

Table 6

Means, Standard Deviations and Range of Subscales

<b>Measure</b>	<b><math>\alpha</math></b>	<b>n</b>	<b>Mean</b>	<b>sd</b>	<b>Range</b>
<b><u>COMMUNITY VIOLENCE</u></b>					
Traumatic Violence	.78	123	1.67	2.52	0 – 10 <sup>a</sup>
Indirect Violence	.89	123	13.54	9.35	0 – 48
Physical Abuse	.79	123	2.85	3.19	0 – 17
<b><u>HOME VIOLENCE</u></b>					
Traumatic Violence	.88	123	.62	1.77	0 – 10 <sup>b</sup>
Indirect Violence	.84	123	4.39	5.25	0 – 26
Physical Abuse	.62	123	1.43	2.25	0 – 11
<b><u>PTSD SYMPTOMS</u></b>					
Reexperiencing	.88	123	4.98	4.96	0 – 19
Numbing & Avoidance	.82	123	7.15	6.80	0 – 28
Arousal	.73	123	7.63	5.26	0 – 21
<b><u>EMOTIONAL NUMBING</u></b>					
Numbing of Anger	.86	102	9.37	5.28	0 – 23
Numbing of Sadness & Fear	.91	100	20.93	11.01	0 – 49
Numbing of Pleasure	.87	100	11.06	7.82	0 – 37
<b><u>AGGRESSIVE COGNITIONS</u></b>					
Reactive Violence	.75	110	8.33	4.29	1 – 22
Culture of Violence	.79	110	4.59	3.25	1 - 19
Male on Female Violence	.79	110	.36	.81	0 – 3 <sup>c</sup>
Female on Male Violence	.77	110	1.25	1.85	0 – 9
General Couple's Violence	.75	109	1.65	2.29	0 – 10

Table 6 continued

Table 6 (cont.)

Means, Standard Deviations and Range of Subscales

Measure	$\alpha$	n	Mean	sd	Range
<b><u>SELF-REPORTED DELINQUENCY</u></b>					
Property Offenses	.89	121	2.62	4.80	0 – 29
Disorderly Conduct	.70	117	2.70	3.42	0 – 12 <sup>d</sup>
Status Offenses	.63	119	1.97	2.41	0 – 15
Illegal Service	---	123	.04	.24	0 – 2
Aggression on Person	.67	119	1.44	2.10	0 – 10 <sup>e</sup>
Drug Use (Methamphetamine)	---	123	.02	.20	0 – 2
<b><u>TEACHER RATING FORM</u></b>					
Aggression	.90	80	3.56	5.78	0 – 25
Delinquent Behavior	.61	79	.86	1.53	0 – 8
<b><u>NYTRS (PROBLEM BEHAVIORS)</u></b>					
Defiance	.91	80	3.11	5.18	0 – 27
Physical Aggression	.81	80	.13	.62	0 – 5
Delinquent Aggression	---	80	.01	.11	0 - 1

Note: <sup>a</sup> range = 0 – 20 before truncating; <sup>b</sup> range = 0 – 22 before truncating; <sup>c</sup> range = 0 – 9 before truncating; <sup>d</sup> range = 0 – 20 before truncating; <sup>e</sup> range = 0 – 15 before truncating. PTSD-I = UCLA PTSD Index; ENS = Emotional Numbing Scale; SRD = Self-Reported Delinquency; TRF = Teacher Report Form; NYTRS = New York Teacher Rating Scale.

Table 7

Intercorrelations of Subscales

<i>Measures</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
<b><u>COMMUNITY VIOLENCE</u></b>																									
1. Traumatic Violence	---																								
2. Indirect Violence	.55 <sup>b</sup>	---																							
3. Physical Abuse	.34 <sup>b</sup>	.60 <sup>b</sup>	---																						
<b><u>HOME VIOLENCE</u></b>																									
4. Traumatic Violence	.65 <sup>b</sup>	.38 <sup>b</sup>	---	---																					
5. Indirect Violence	.50 <sup>b</sup>	.58 <sup>b</sup>	.45 <sup>b</sup>	.60 <sup>b</sup>	---																				
6. Physical Abuse	.25 <sup>t</sup>	.43 <sup>b</sup>	.72 <sup>b</sup>	.35 <sup>b</sup>	.45 <sup>b</sup>	---																			
<b><u>PTSD SYMPTOMS</u></b>																									
7. Reexperiencing	.29 <sup>a</sup>	.37 <sup>b</sup>	.33 <sup>a</sup>	---	.23 <sup>t</sup>	.27 <sup>a</sup>	---																		
8. Numbing / Avoidance	.22 <sup>t</sup>	.35 <sup>a</sup>	.36 <sup>b</sup>	---	.29 <sup>a</sup>	.33 <sup>a</sup>	.75 <sup>b</sup>	---																	
9. Arousal	.26 <sup>t</sup>	.43 <sup>b</sup>	.46 <sup>b</sup>	.23 <sup>t</sup>	.30 <sup>a</sup>	.39 <sup>b</sup>	.74 <sup>b</sup>	.76 <sup>b</sup>	---																
<b><u>EMOTIONAL NUMBING</u></b>																									
10. Numbing of Anger	---	---	---	.20 <sup>t</sup>	---	---	-.21 <sup>t</sup>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11. Numbing of Sad/Fear	---	---	---	.36 <sup>a</sup>	.21 <sup>t</sup>	.21 <sup>t</sup>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12. Numbing of Pleasure	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b><u>ACCEPTANCE OF VIOLENCE</u></b>																									
13. Male to Female	---	---	---	---	---	.19 <sup>t</sup>	---	---	.26 <sup>t</sup>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14. Female to Male	.23 <sup>t</sup>	.32 <sup>a</sup>	.31 <sup>a</sup>	.29 <sup>a</sup>	.20 <sup>t</sup>	.38 <sup>b</sup>	.21 <sup>t</sup>	.22 <sup>t</sup>	.33	.21 <sup>t</sup>	.22 <sup>t</sup>	---	.62 <sup>b</sup>	---	---	---	---	---	---	---	---	---	---	---	---
15. General Couple's	.19 <sup>t</sup>	---	---	.32 <sup>a</sup>	.32 <sup>a</sup>	---	---	---	---	---	---	---	.26 <sup>t</sup>	.20 <sup>t</sup>	.46 <sup>b</sup>	.56 <sup>b</sup>	---	---	---	---	---	---	---	---	---
16. Reactive Violence	.31 <sup>a</sup>	.33 <sup>a</sup>	.40 <sup>b</sup>	.32 <sup>a</sup>	.38 <sup>b</sup>	.44 <sup>b</sup>	---	---	.33 <sup>a</sup>	---	.21 <sup>t</sup>	---	.33 <sup>a</sup>	.37 <sup>b</sup>	.40 <sup>b</sup>	---	---	---	---	---	---	---	---	---	---
17. Culture of Violence	.37 <sup>b</sup>	.41 <sup>b</sup>	.50 <sup>b</sup>	.32 <sup>a</sup>	.37 <sup>b</sup>	.48 <sup>b</sup>	.24 <sup>t</sup>	.19 <sup>t</sup>	.43 <sup>b</sup>	---	.33 <sup>a</sup>	---	.53 <sup>b</sup>	.47 <sup>b</sup>	.33 <sup>a</sup>	.57 <sup>b</sup>	---	---	---	---	---	---	---	---	---
<b><u>SELF-REPORTED DELINQUENCY</u></b>																									
18. Property Offenses	.26 <sup>t</sup>	.35 <sup>b</sup>	.37 <sup>b</sup>	.36 <sup>b</sup>	.26 <sup>t</sup>	.47 <sup>b</sup>	---	---	.40 <sup>b</sup>	---	.20 <sup>t</sup>	---	.30 <sup>a</sup>	.35 <sup>a</sup>	.26 <sup>t</sup>	.44 <sup>b</sup>	.52 <sup>b</sup>	---	---	---	---	---	---	---	---
19. Disorderly Conduct	.29 <sup>a</sup>	.37 <sup>b</sup>	.41 <sup>b</sup>	.20 <sup>t</sup>	.35 <sup>b</sup>	.40 <sup>b</sup>	---	---	.37 <sup>b</sup>	-.23 <sup>t</sup>	---	---	---	---	---	.48 <sup>b</sup>	.39 <sup>b</sup>	.77 <sup>b</sup>	---	---	---	---	---	---	---
20. Status Offenses	.34 <sup>a</sup>	.33 <sup>a</sup>	.36 <sup>b</sup>	.29 <sup>a</sup>	.19 <sup>t</sup>	.44 <sup>b</sup>	.18 <sup>t</sup>	---	.38 <sup>b</sup>	-.25 <sup>t</sup>	---	---	---	.22 <sup>t</sup>	---	.41 <sup>b</sup>	.38 <sup>b</sup>	.72 <sup>b</sup>	.77 <sup>b</sup>	---	---	---	---	---	---
21. Aggression to Person	.34 <sup>a</sup>	.34 <sup>a</sup>	.42 <sup>b</sup>	.35 <sup>b</sup>	.33 <sup>a</sup>	.56 <sup>b</sup>	.37 <sup>b</sup>	.24 <sup>t</sup>	.49 <sup>b</sup>	---	.28 <sup>t</sup>	---	.39 <sup>b</sup>	.45 <sup>b</sup>	.30 <sup>a</sup>	.45 <sup>b</sup>	.59 <sup>b</sup>	.78 <sup>b</sup>	.72 <sup>b</sup>	.66 <sup>b</sup>	---	---	---	---	---
<b><u>TEACHER REPORT</u></b>																									
22. Aggression	---	---	---	---	---	---	---	---	---	---	---	---	.25 <sup>t</sup>	.26 <sup>t</sup>	-.28 <sup>t</sup>	---	---	---	---	---	---	---	---	---	---
23. Delinquent Behavior	---	---	---	---	---	---	---	---	---	---	---	---	.28 <sup>t</sup>	.37 <sup>b</sup>	---	---	---	---	---	---	---	---	---	---	.70 <sup>b</sup>
24. Physical Aggression	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Note. Teacher-reported Defiance was not significantly related to other subscales. Bonferroni correction requires  $p < .002$  for significance.

<sup>a</sup>  $p < .002$ , <sup>b</sup>  $p < .0001$ , <sup>t</sup> indicates  $p < .05 > .002$

Table 8: Proposed Indicators for Latent Factors

Latent Factor	Proposed Indicators & Effect Variables
<b><u>Exposure to Violence</u></b>	
Home Violence	Screen for Adolescent Violence Exposure (SAVE) Home Traumatic Violence Home Indirect Violence Home Physical Abuse
Community Violence	Screen for Adolescent Violence Exposure (SAVE) Community Traumatic Violence Community Indirect Violence Community Physical Abuse
War Violence	War Exposure Questionnaire-Revised (WEQ-R)
<b><u>Posttraumatic Stress Symptoms</u></b>	
	UCLA PTSD Index (PTSD-I) Reexperiencing Symptoms Numbing and Avoidance Symptoms Arousal Symptoms
<b><u>Depressive Symptoms</u></b>	
	Children's Depression Inventory – Short Form (CDI-S) Hopelessness Scale for Children (HSC)
<b><u>Aggressive Cognitions</u></b>	
	Attitudes Toward Violence Scale (ATVS) Reactive Violence Culture of Violence
	Acceptance of Couple Violence (ACV) Male-to-Female Violence Female-to-Male Violence General Acceptance of Violence
<b><u>Aggressive and Delinquent Behaviors</u></b>	
	Self-Reported Delinquency (SRD) Aggression towards Person Property Offenses Status Offenses Disorderly Conduct
	New York Teacher Report Scale (NYTRS) Physical Aggression
	Teacher Report Form (TRF) Aggressive Behaviors Delinquent Behaviors

Table 9

Final Measurement Model Indicators and Factor Loadings of Latent Factors

Latent Factor	Indicators	Factor Loadings
<b>Community Violence</b>	Community Traumatic Violence (CTrV)	.66
	Community Indirect Violence (CInV)	.86
	Community Physical Abuse (CPA)	.70
<b>Home Violence</b>	Home Traumatic Violence (HTrV)	.66
	Home Indirect Violence (HInV)	.80
	Home Physical Abuse (HPA)	.64
<b>PTSD Symptoms</b>	Reexperiencing Symptoms (CritB)	.85
	Numbing and Avoidance Symptoms (CritC)	.86
	Arousal Symptoms (CritD)	.89
<b>Aggressive Cognitions</b>	Reactive Violence (Reactive)	.65
	Culture of Violence (CultViol)	.87
	Male-to-Female Violence (MaleV)	.57
	Female-to-Male Violence (FemaleV)	.42
	General Acceptance of Violence (GenACV)	.63
<b>Aggression</b>	Aggression on People (AggPers)	1.09
	Other Aggression (OthAgg)	.71
	Physical Aggression (PhysAgg)	.28



Figure 2: Revised Conceptual Model

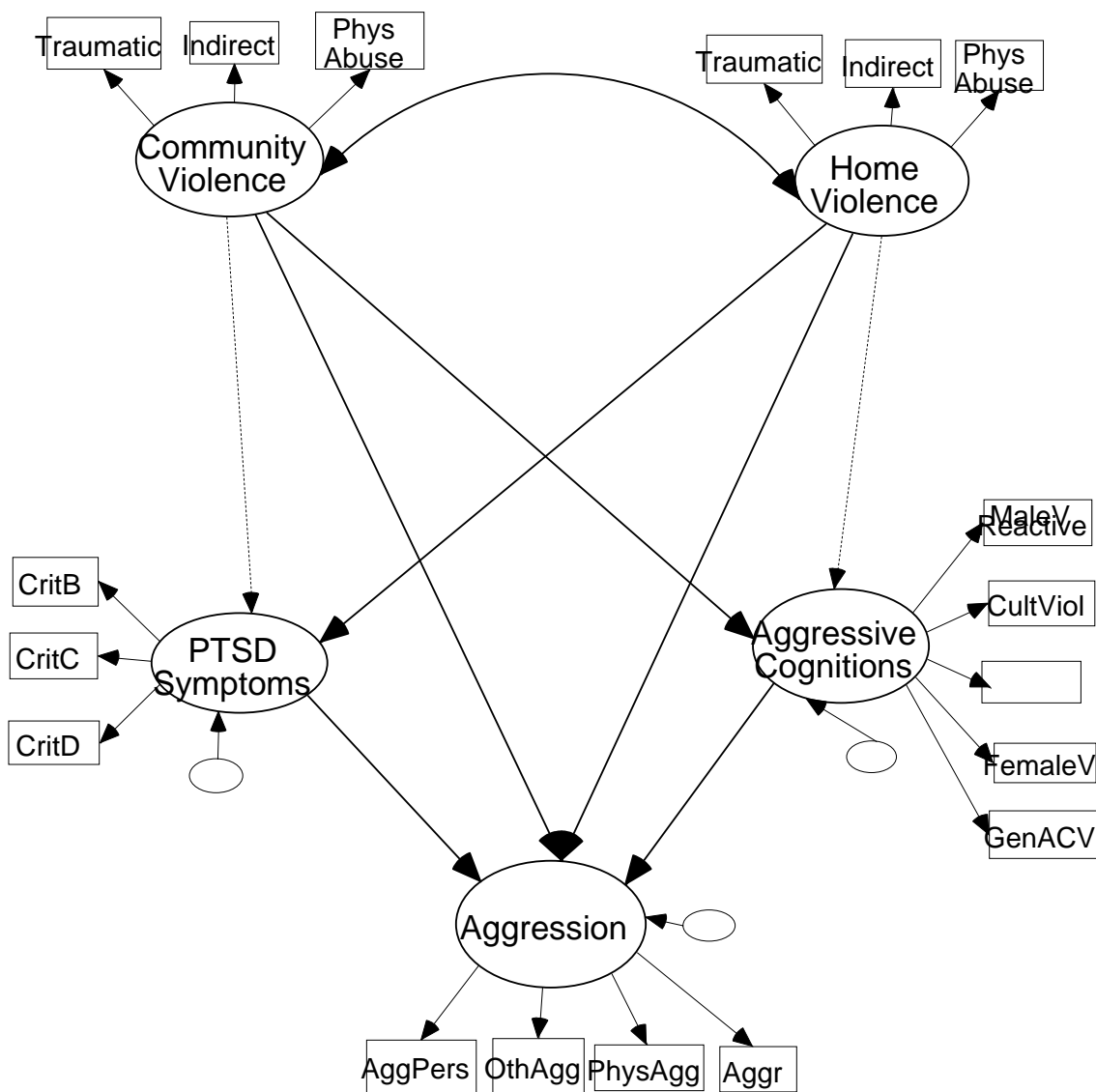
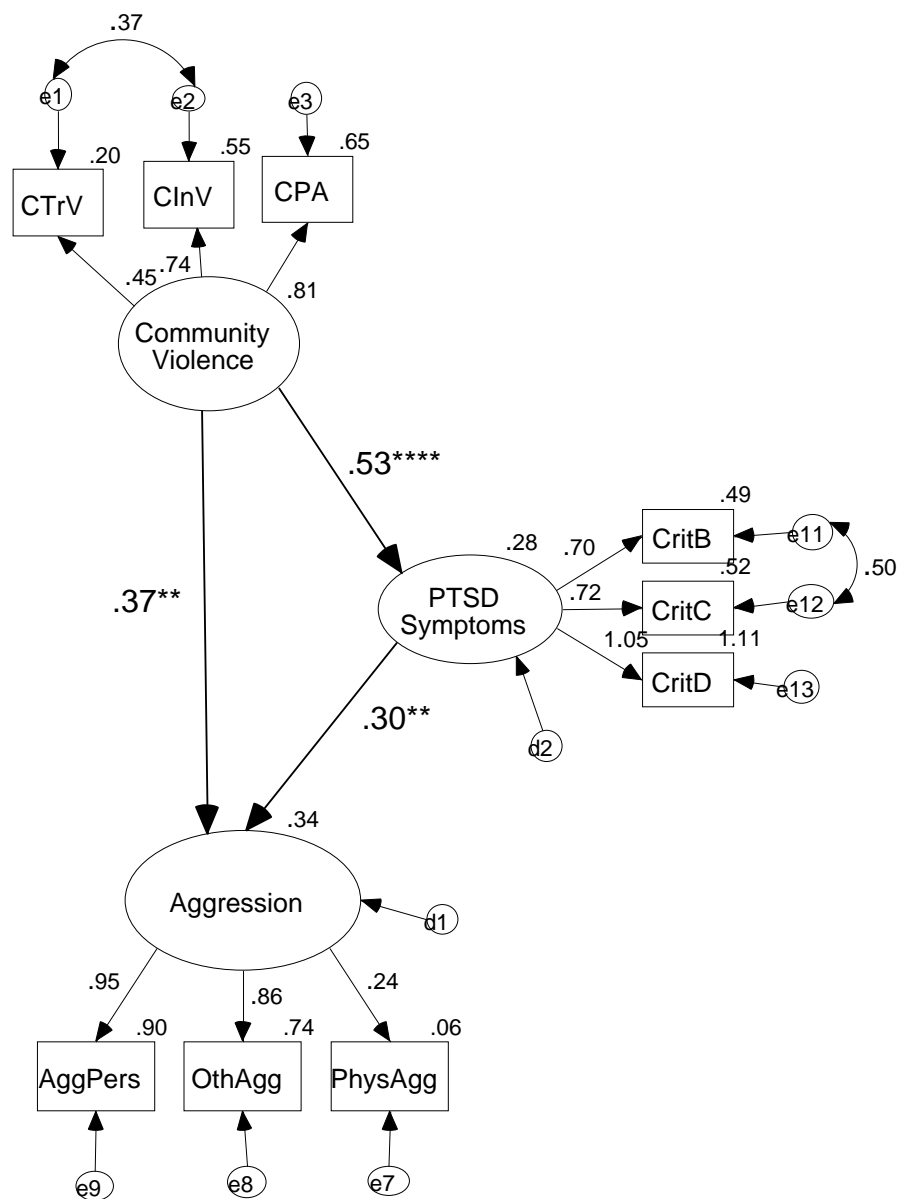
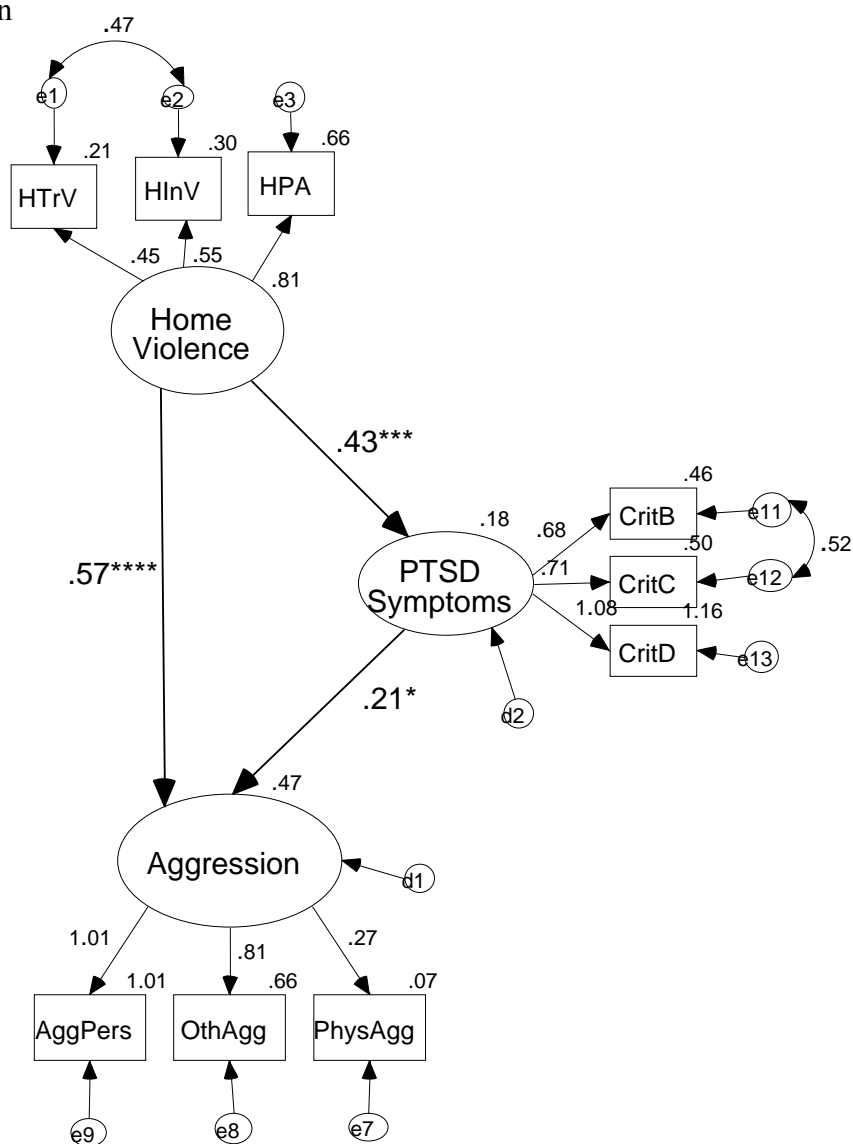


Figure 3:  
PTSD as a Mediator of the Relation between Community Violence and Aggression



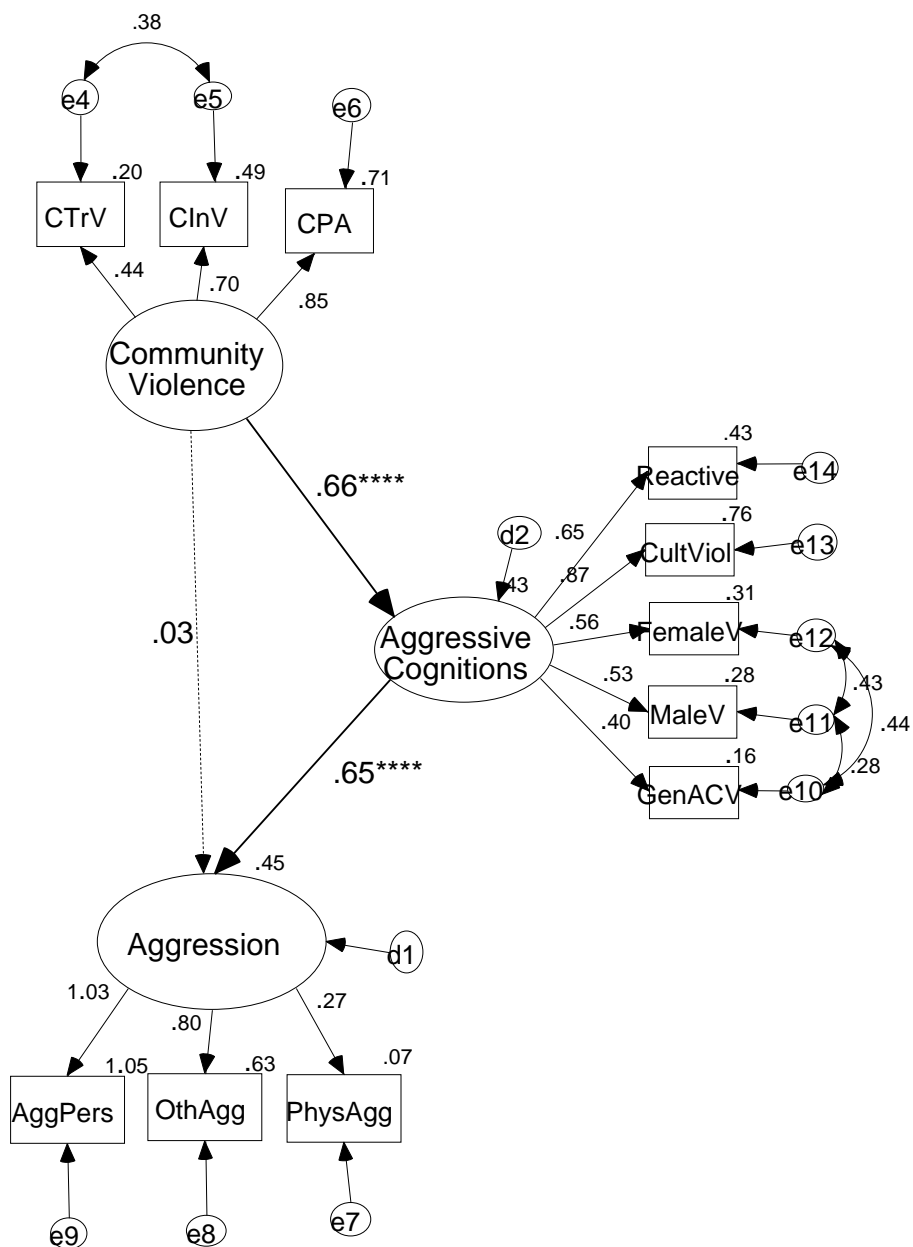
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$

Figure 4:  
PTSD as a Mediator in the Relation between Home Violence and Aggression



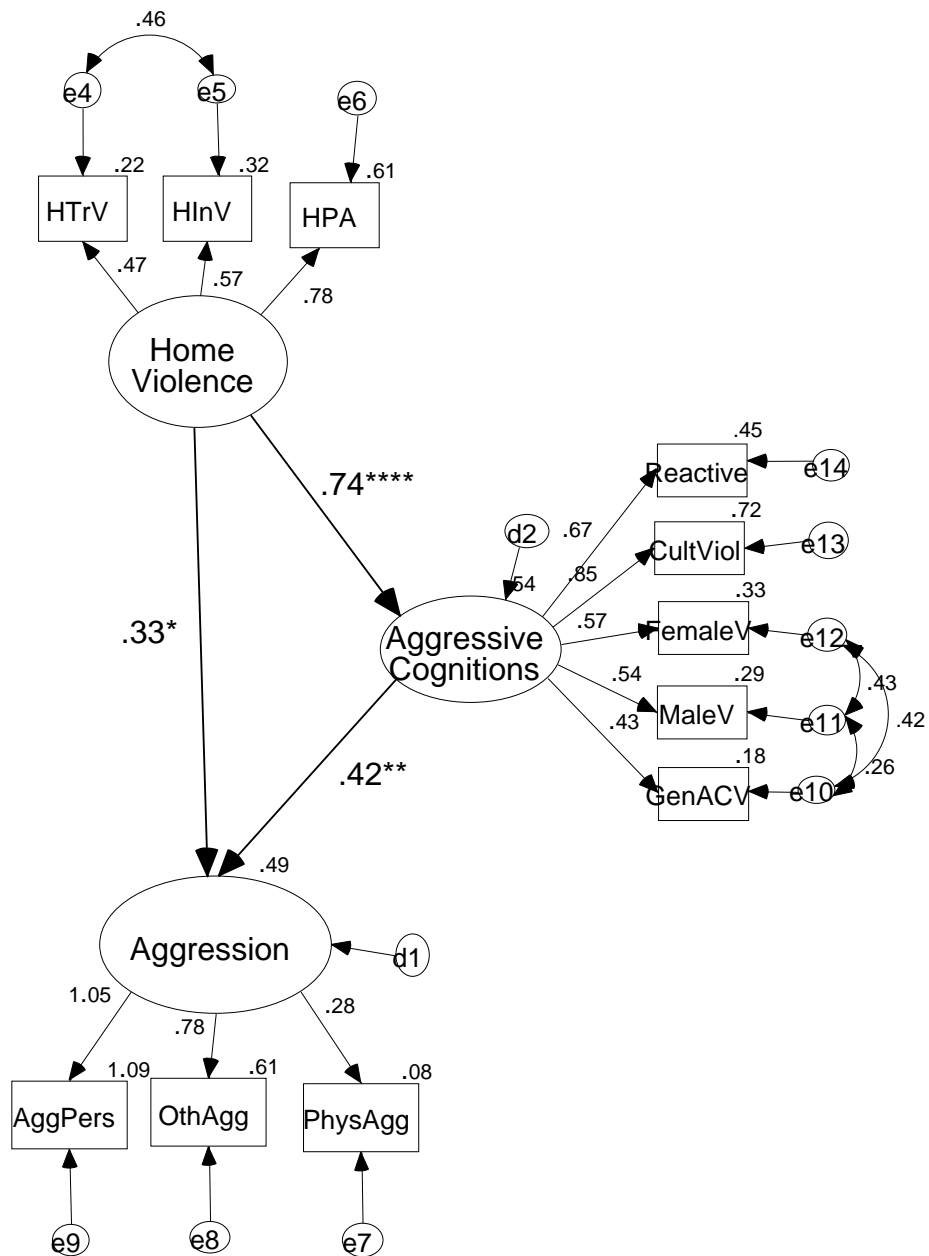
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$

Figure 5:  
Aggressive Cognitions as Mediator in the Relation between the  
Community Violence and Aggression



\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$

Figure 6:  
Aggressive Cognitions as a Mediator in the Relation between Home Violence and Aggression



\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$

Table 10

Fit Indices of Mediational Model of Violence Exposure and Aggression

Model	$\beta$ of direct path	Df	$\chi^2$	$\chi^2/df$	NFI	TLI	RMSEA
<b>Community Violence</b>	.54****	7	9.78	1.40	.98	.99	.00
<b>Home Violence</b>	.62****	7	7.84	1.12	.98	1.0	.03
<b>PTSD Mediator</b>							
<b>Figure 3</b>	.37**	22	29.00	1.32	.98	.99	.05
<b>Figure 4</b>	.57****	22	31.71	1.44	.97	.98	.06
<b>Cognitive Mediator</b>							
<b>Figure 5</b>	.03	37	51.42	1.39	.96	.98	.06
<b>Figure 6</b>	.33*	41	54.18	1.46	.95	.97	.06

Note. NFI = normed fit index; TLI = Tucker Lewis index; RMSEA = root-mean-square error of approximation;  $\beta$  = Beta of direct path from violence exposure to Aggression.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$

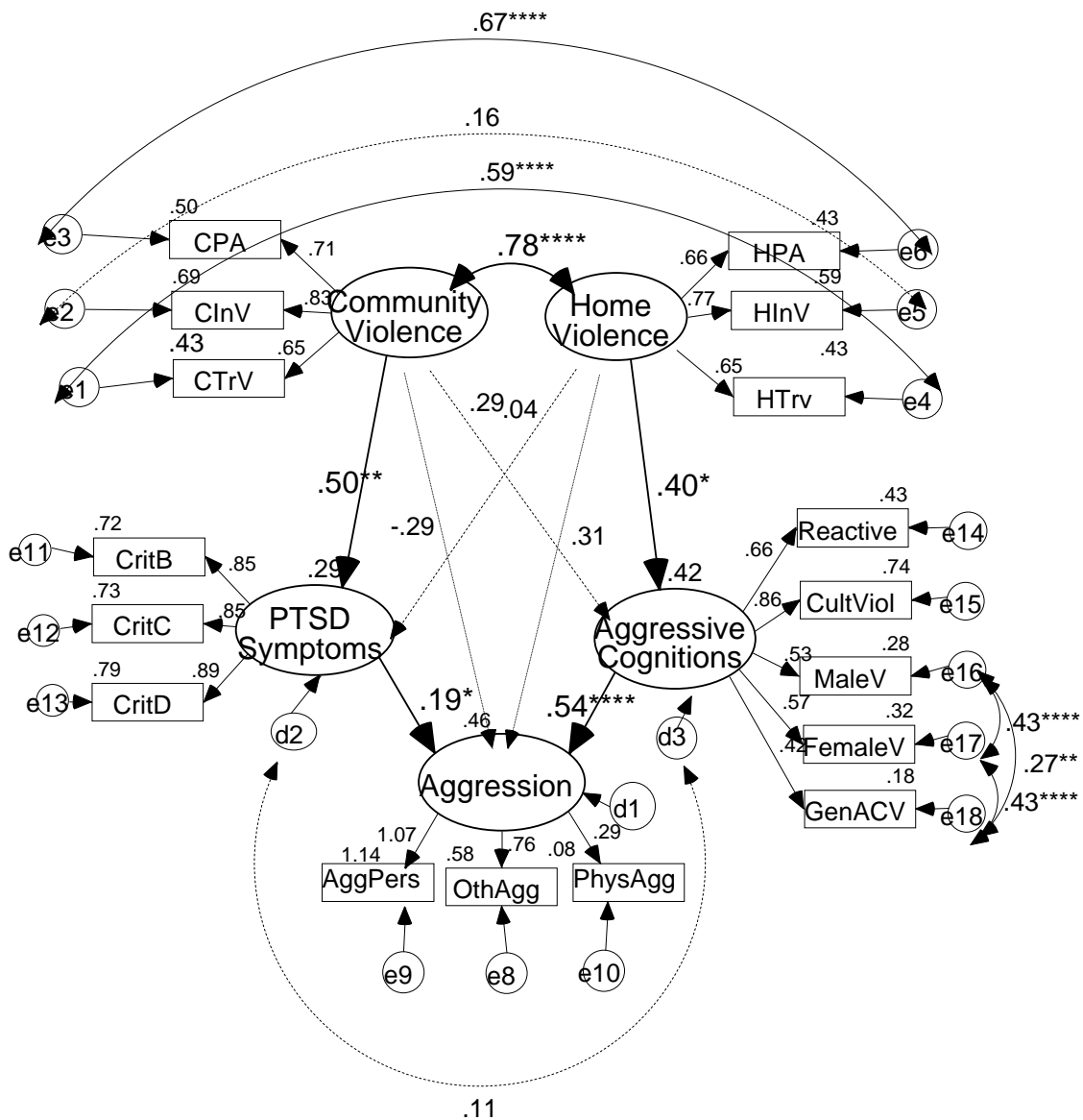
Table 11

Fit Indices of Full Mediation Models and Alternate Models of  
Violence Exposure and Aggression

<b>Model</b>	<b>df</b>	<b><math>\chi^2</math></b>	<b><math>\chi^2/df</math></b>	<b>NFI</b>	<b>TLI</b>	<b>RMSEA</b>
<b>Full Model</b>						
<b>Figure 7</b>	103	186.32	1.81	.92	.95	.08
<b>Removal of Dashed Paths</b>	107	190.36	1.78	.92	.95	.08
<b>Removal of Dotted Paths</b>	109	193.68	1.78	.92	.95	.08
<b>Figure 9 (Linked Mediators)</b>	109	194.61	1.79	.92	.95	.08
<b>Alternate Models</b>						
<b>Figure 10</b>	107	191.68	1.79	.92	.95	.08
<b>Figure 11</b>	108	210.51	1.95	.91	.94	.09
<b>Figure 12</b>	110	243.37	2.21	.90	.92	.10

Note. NFI = normed fit index; TLI = Tucker Lewis index; RMSEA = root-mean square error of approximation

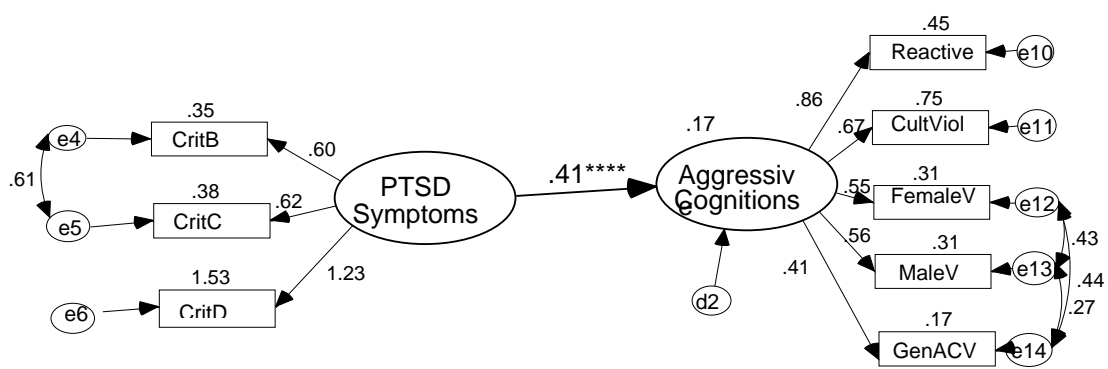
Figure 7:  
Full Model: PTSD Symptoms and Aggressive Cognitions as Mediators



\* p < .05, \*\* p < .01, \*\*\* p < .001, \*\*\*\* p < .0001

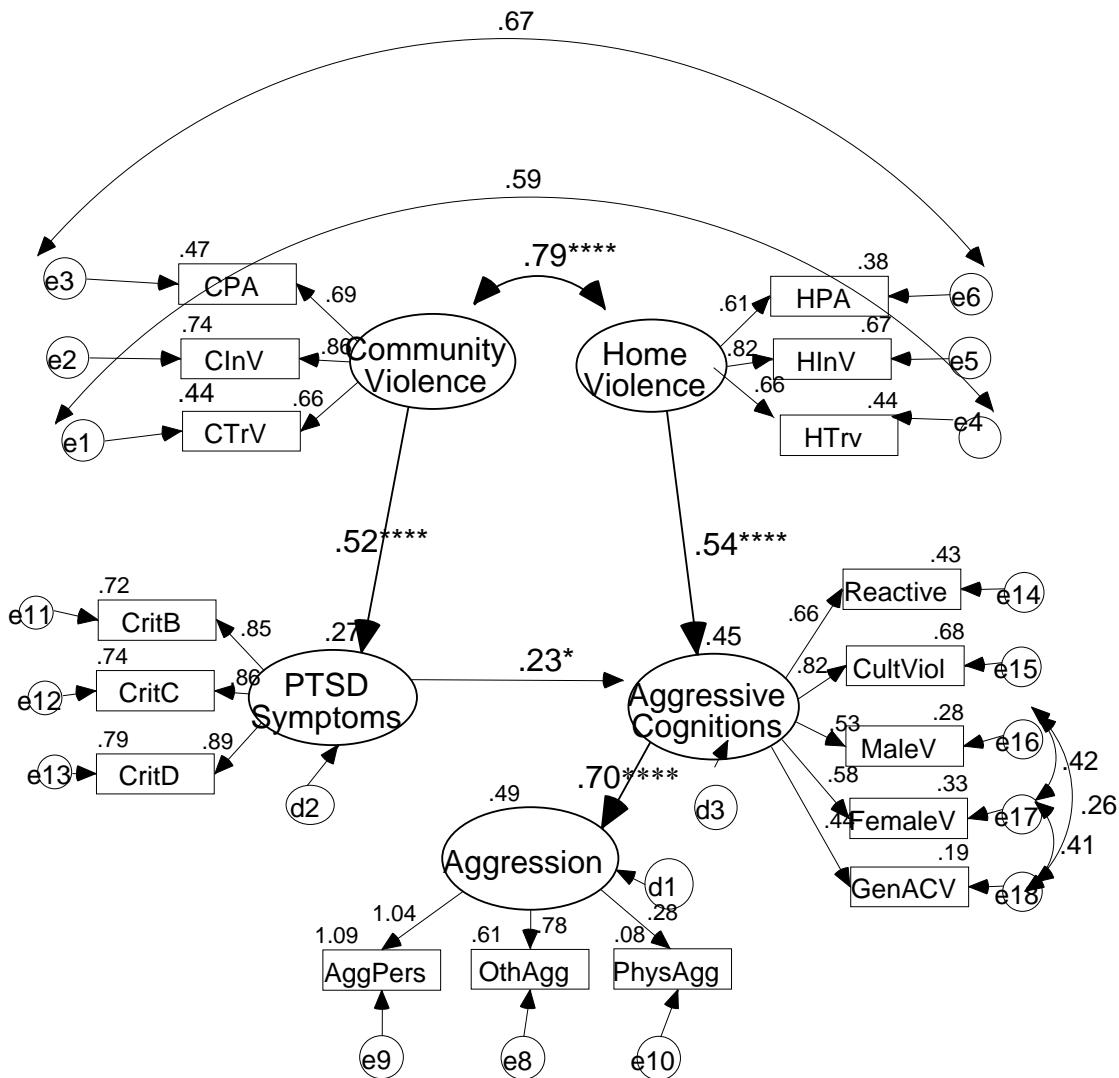


Figure 8:  
Model of Relations between PTSD and Aggressive Cognitions



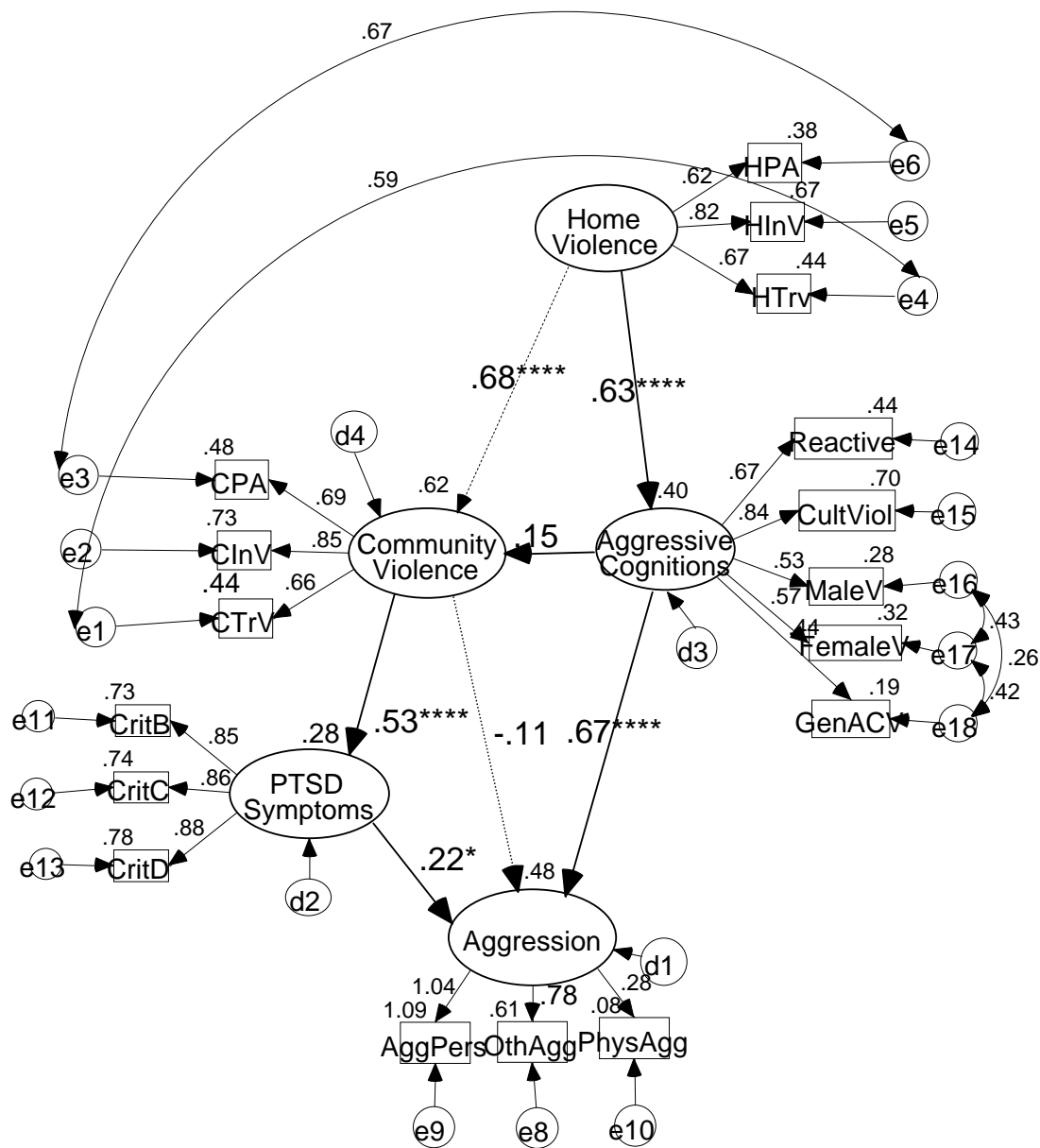
\*\*\*\*  $p < .0001$

Figure 9:  
Full Mediation Model with Direct Path between PTSD and Aggressive Cognitions



\* p < .05, \*\* p < .01, \*\*\* p < .001, \*\*\*\* p < .0001

Figure 10:  
Alternate Mediation Model with Home Violence as Precipitator



\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$

Table 12

Means, Standard Deviation, and Range by Sex

Measures	Mean	Girls		Mean	Boys	
		Sd	Range		Sd	Range
<b>Home Violence</b>	5.31	6.45	0 – 28	7.48	8.45	0 – 31
<b>HTrV<sup>a</sup></b>	.34	1.12	0 – 8	.84	1.96	0 - 8
<b>HInV</b>	3.81	4.69	0 – 20	4.98	5.73	0 - 26
<b>HPA</b>	1.16	1.99	0 – 9	1.70	2.48	0 - 11
<b>Community Violence</b>	16.10	11.83	0 – 64	20.12	14.31	0 - 52
<b>CTrV<sup>b</sup></b>	0.95	1.67	0 – 10	2.56***	3.63	0 – 10
<b>CInV</b>	13.0	9.21	0 – 48	14.08	9.54	0 - 38
<b>CPA</b>	2.15	2.80	0 – 15	3.57**	3.42	0 - 17
<b>War Exposure</b>	7.67	2.08	6 – 10	3.33	3.41	2 - 7

Note. HTrV = Home Traumatic Violence; HInV = Home Indirect Violence; HPA = Home Physical Abuse; CTrV = Community Traumatic Violence; CInV = Community Indirect Violence; CPA = Community Physical Abuse.

<sup>a</sup> Grand mean = 1.10, Range = 0 – 22 before truncated; <sup>b</sup> Grand mean = 2.39, Range = 0 – 20 before truncated.

\*\* p < .01, \*\*\* p < .001

**Appendix A**  
**Information Forms**

<b>A.1</b>	<b>.....Recruitment Letter</b>
<b>A.2</b>	<b>.....Parental Consent Form</b>
<b>A.3</b>	<b>.....Child Assent Form</b>
<b>A.4</b>	<b>.....Teacher Coversheet</b>
<b>A.5</b>	<b>.....Briefing Form</b>
<b>A.6</b>	<b>.....Teacher Consent Form</b>

May 11, 2004

Dear Parent or Guardian:

Many youth in today's society hear about, witness, or experience violence. Understanding what youth are experiencing and how they react to violence is an important step in helping them cope. Researchers at the University of Missouri-Columbia are examining the types of events that teenagers experience and how these experiences might affect their thoughts, feelings, and behaviors. The Youth Experiences Project (YEP) is sponsored by the University of Missouri-Columbia under the direction of Dr. Debora Bell and Maureen Allwood, M.A. of the Department of Psychological Sciences. YEP will evaluate middle and high school youth exposure and response to various life experiences, including witnessing, experiencing, or being otherwise involved in violent events.

With your signed permission and your child's agreement, your child will be scheduled to complete several surveys asking about exposure to violent events (e.g., getting into fights, seeing someone injured) and his/her thoughts and feelings about those experiences. Your child will also be asked about his/her behaviors, including any involvement in illegal or violent acts. The surveys will be completely anonymous and will be completed in small group sessions during school hours. With your permission, we'd also like to have your child's teacher answer some questions about your child's behaviors and adjustment in school. As a thank-you for participating, your child will receive two movie passes, and participating teachers will also receive a thank you gift.

Please indicate on the enclosed consent form whether you DO or DO NOT give permission for your child to participate in the Youth Experiences Project, and return it to your child's school or by mail in the enclosed stamped envelope. If you have any questions please call or email Ms. Allwood (573 882-6484; [maaf3f@mizzou.edu](mailto:maaf3f@mizzou.edu)) or Dr. Debora Bell (573 882-2254; [BellDeb@Missouri.edu](mailto:BellDeb@Missouri.edu)). You can also write to us at 210 McAlester Hall, Department of Psychological Sciences, University of Missouri-Columbia, Columbia, MO 65211. If you have questions about your rights as a research participant, you may contact the Campus Institutional Review Board at 483 McReynolds Hall, Columbia, MO 65211, phone: 573-882-9585, fax: 573-884-0663, e-mail: [umcresearchcirb@missouri.edu](mailto:umcresearchcirb@missouri.edu). You may also call the University of Missouri-Columbia operator at 1 (800) 225-6075 and ask for Dr. Debora Bell or for the Campus Institutional Review Board.

Thanks in advance for your consideration of this important project.

Respectfully Yours,

Maureen Allwood, M.A.  
Project Director

Debora Bell, Ph.D.  
Associate Chair of Clinical Science

**Youth Experiences Project  
Parent Consent Form**

Dear Parent or Guardian:

This letter requests your child's participation in the Youth Experiences Project (YEP). YEP is sponsored by the University of Missouri-Columbia under the direction of Debora Bell, Ph.D. and Maureen Allwood, M.A. of the department of Psychological Sciences.

Description: Unfortunately, too many youth in today's society witness or experience violence. Understanding what youth are experiencing and how they react is an important step in helping them cope. This study will evaluate youth exposure and response to various life experiences, including witnessing or experiencing violent events. If your son or daughter participates, he/she will complete several surveys asking about exposure to violent events in their neighborhood and at home (e.g., getting into fights, seeing someone injured, being threatened or harmed) and his/her thoughts and feelings about those experiences (e.g., "Were you scared that you would be hurt badly?" "It's okay to do whatever it takes to protect yourself"). Your child will also be asked about his/her behaviors, including any involvement in illegal or violent acts.

The study will take place in your child's school with the help of the primary investigator and trained research assistants. Your child's participation is expected to take about 45 minutes. In addition, we will ask your son or daughter's teacher to complete a questionnaire about his/her adjustment in school.

Information is Anonymous: The information provided by you and your son or daughter is anonymous. All survey materials are pre-coded with identification numbers and your child's name will not be on the forms. To maintain your child's anonymity he/she will select a teacher to complete the teacher forms and will place coded materials in a sealed envelope that will be delivered to the teacher. Although every effort will be made not to reveal your child's identity, in accordance with state law if your child approaches the research staff with information about being harmed in anyway, the research staff are required to file a report.

Potential Benefits and Concerns: This project will gather information about youths' experiences and how their experiences might affect their feelings, thoughts, behaviors, and their academic progress. This information is expected to help guide future efforts to enhance community safety and promote healthy coping strategies in youth. If your child participates in this project, he/she will be given two free movie passes as a small token of appreciation.

The risks involved in this project are not expected to be greater than those ordinarily encountered in daily life. However, students will be asked to recall experiences that they might find unpleasant (e.g., being exposed to violent situations). If a student seems upset by the sensitive nature of the questions, his/her concerns will be addressed by a trained research assistant and the student will be given the option of stopping his/her participation. In addition, a list of community resources will be provided for all participating students and you or your child may contact the school counselor, someone from the resource list, or the researchers with any concerns regarding your child's feelings or behaviors.

Participation is Voluntary: Participation in this project is completely voluntary. You and your son or daughter should discuss the possibility of his/her participation in this project and then sign

below indicating if you DO or DO NOT give your consent for participation. If you consent to your child's participation, please complete the enclosed in this information packet. After receiving your consent form, your son or daughter will be assigned a date to complete the questionnaires. At that time, your child will also be asked to give his/her agreement before participating. During the study, your child will be allowed to withdraw from the study at any time he/she chooses without any negative consequences. Your child will also be free to not answer particular questions if he/she wishes.

At the end of participation, your child will be given a sealed envelope with four enclosures: 1.) a copy of the consent form you signed, 2) a copy of the assent your child signed, 3) a list of community agencies that you or your child can contact with any concerns about your child's emotional or behavioral adjustment, 4) 2 movie passes to Crown Cinema.

Questions? If you have any questions of concerns, please call or email Ms. Allwood (573 882-6484; [maaf3f@mizzou.edu](mailto:maaf3f@mizzou.edu)) or Dr. Debora Bell (573 882-2254; [BellDeb@Missouri.edu](mailto:BellDeb@Missouri.edu)). You can also write to us at 210 McAlester Hall, Department of Psychological Sciences, University of Missouri-Columbia, Columbia, MO 65211. If you have questions about your rights as a research participant, you may contact the Campus Institutional Review Board at 483 McReynolds Hall, Columbia, MO 65211, phone: 573 882-9585, fax: 573-884-0663, e-mail: [umcresearchcirb@missouri.edu](mailto:umcresearchcirb@missouri.edu). You may also call the University of Missouri-Columbia operator toll free at 1 (800) 225-6075 and ask for Dr. Debora Bell or for the Campus Institutional Review Board.

Informed Consent must be documented by the use of a written consent form approved by the University Institutional Review Board, and signed by you or your legally authorized representative. Unless you sign below, your child cannot participate in this study.

**My signature below indicates that I have read and understand this consent form, have had a chance to ask questions, and give consent for my child to participate in the Youth Experiences Project. I will also receive a copy of this form for my records.**

**I CONSENT to my child's participation.**

\_\_\_\_\_  
Parent's Signature

\_\_\_\_\_  
Date

**My signature below indicates that I have read and understand this consent form, have had a chance to ask questions, and DO NOT give consent for my child to participate in the "Youth Experiences Project." I will also receive a copy of this form for my records.**

**I DO NOT consent to my child's participation.**

\_\_\_\_\_  
Parent's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_ I would like a written summary to be sent to me when the finished results of the project are available. Please include your address and phone number below if you are interested in receiving a summary.

Address & Phone Number:



## A.3

**Youth Experiences Project  
Assent Form**

I understand that I am asked to be in the “Youth Experiences Project” which is being run by Maureen Allwood and Dr. Debora Bell from the Department of Psychological Sciences at the University of Missouri-Columbia.

If I agree to be in this project I will be asked some questions about things that have happened to me. I will also be asked some questions about my thoughts, feelings and behaviors. For example, I will be asked about seeing or being in fights, and doing anything illegal. In the future, this project could help adults to better understand kids and how to be helpful to them. The project will take about 45 minutes, and I will get two free movie passes as a thank you gift. One of my teachers will also be asked to fill out two forms about my behaviors.

- I understand that my answers to the questions will be kept private. My name won't be on the forms, there will only be a code number. The people doing this project won't know which forms are mine. They won't share my answers with my teachers, parents, or anyone else. I don't have to tell anyone my answers if I don't want to either.
- I also understand that If I want to talk to someone about how I feel after the project, I can talk with my school counselor, with someone from the project, or with someone on the list that I will be given at the end.
- I understand that being in this project will not affect my grade in any classes.
- I understand that it is up to me to be in the project. If I don't want to be in it, that is alright. Also, if I don't want to answer some questions, that's alright too. I can stop being in the project any time I want to and I will still receive my thank you gift.

I have had a chance to ask questions I have about the project. I understand what I am asked to do and I want to be in the project. I will be given a copy of this form to keep.

If I have more questions about the project I can:

- email Ms. Allwood (573 882-6484; [maaf3f@mizzou.edu](mailto:maaf3f@mizzou.edu))
- email Dr. Debora Bell (573 882-2254; [BellDeb@Missouri.edu](mailto:BellDeb@Missouri.edu))
- write to them at 210 McAlester Hall, Department of Psychological Sciences, University of Missouri-Columbia, Columbia, MO 65211
- contact the Campus Institutional Review Board at 483 McReynolds Hall, Columbia, MO 65211, phone: 573-882-9585, fax: 573-884-0663, e-mail: [umcresearchcirb@missouri.edu](mailto:umcresearchcirb@missouri.edu)

If I can't make a long distance call I can:

- call the University of Missouri-Columbia operator toll free at 1 (800) 225-6075 and ask for Dr. Debora Bell or for the Campus Institutional Review Board.

Print Name : \_\_\_\_\_

Sign Name: \_\_\_\_\_

Signed:	Youth	Date
	Witness	Date

**Youth Experiences Project**

Dear \_\_\_\_\_ (e.g., Ms. Jones)

Your student, \_\_\_\_\_ (Student's name) has indicated that you know his/her behaviors and school performance well enough to complete the enclosed questionnaires. If you agree to participate, please sign the enclosed consent form, complete each questionnaire, and place the consent form and questionnaires in the enclosed stamped envelope. The questionnaires have been marked with an identification code; **please do not write student name on the questionnaires.** In addition, to maintain your student's anonymity please be sure to destroy this cover letter once you have completed the questionnaires (do **NOT** return it with the questionnaires). Once we have received the questionnaires and your signed consent, we will mail two movie passes to you as a small token of appreciation. We will also enclose a copy of your signed consent form. Please be sure to indicate under your signature if you would prefer to have the tickets mailed to an address other than that of the school.

Your time and assistance are greatly appreciated.

Sincerely,

Maureen Allwood, M.A.  
Project Director

Debora Bell, Ph.D.  
Associate Director of Clinical Science

## Youth Experiences Project

The questions that you will be asked today might not be like questions that you are usually asked. Those of us conducting the study believe that we cannot truly understand teenagers' experiences, thoughts, feelings and behaviors without asking directly.

Although the questions might be different than those you are used to, please answer all questions as **honestly** and **accurately** as you can. **There are no right or wrong answers**, and remember, your answers are private.

If you have questions about any item or about the instructions, please raise your hand and someone will come and help.

## Youth Experiences Project

Dear Educator:

This letter requests your help in the Youth Experiences Project (YEP). Your student named on the coversheet and his/her parents have consented to participating in this research project, and we are seeking teacher input for all participants. YEP is sponsored by the University of Missouri-Columbia under the direction of Debora Bell, Ph.D. and Maureen Allwood, M.A. from the department of Psychological Sciences.

Description: Unfortunately, too many youth in today's society witness or experience violence. Understanding what youth are experiencing and how they react is an important step in helping them cope. This study will evaluate youth exposure and response to various life experiences, including witnessing or experiencing violent events. Participation would require that you fill out questionnaires about this student's academic, emotional, and behavioral adjustment (Teacher Report Form and New York Teacher Rating Scale). These forms should take about 15 minutes to complete.

Information is Confidential: All information you provide is confidential and will be kept private. All materials are coded with identification numbers and researchers will not be able to match identification numbers to student names. In order to maintain students' anonymity we ask that you destroy the cover sheet enclosed in your packet of information and that you do **NOT** include student names on any forms. We recognize that you may be completing forms for several students, therefore, we ask that you complete each packet and place the questionnaires in the return envelope before beginning another student packet.

Potential Benefits and Concerns: The results of our project are expected to help our understanding of youths' experiences and how their experiences might affect their feelings, thoughts, and behaviors, including their academic progress. This information is expected to help guide future efforts to enhance child safety, trauma recovery, and academic performance. As a thank you for participating, we would like you to offer you two free movie passes to Crown Cinema. You will also have the opportunity to receive a written summary of project results when the project is completed. This project is not expected to involve risks greater than those ordinarily encountered in daily life.

Participation is Voluntary: Your participation in this project is completely voluntary. You can withdraw from the study at any time you choose without any negative consequences.

Questions? If you have any questions of concerns, please call or email Maureen Allwood (573 882-6484; [maaf3f@mizzou.edu](mailto:maaf3f@mizzou.edu)) or Dr. Debora Bell (573 882-2254; [BellDeb@Missouri.edu](mailto:BellDeb@Missouri.edu)). You can also write to them at 210 McAlester Hall, Department of Psychological Sciences, University of Missouri-Columbia, Columbia, MO 65211. If you have questions about your rights as a research participant, you may contact the Campus Institutional Review Board at 483 McReynolds Hall, Columbia, MO 65211, phone: 573 882-9585, fax: 573-884-0663, e-mail: [umcresearchcirb@missouri.edu](mailto:umcresearchcirb@missouri.edu). You may also call the University of Missouri-Columbia operator at 1 (800) 225-6075 and ask for Dr. Debora Bell or for the Campus Institutional Review Board.

Informed Consent must be documented by the use of a written consent form approved by the Campus Institutional Review Board, and signed by you or your legally authorized representative. Unless you sign below, you cannot participate in this study.

**My signature below indicates that I have read and understand this consent form, have had a chance to ask questions, and give consent for my participation in the Youth Experiences Project. I have also received a copy of this form for my records.**

---

Teacher's Signature

---

Print Name

---

Date

\_\_\_\_\_ I would like a written summary to be sent to me when the finished results of the project are available. Please include your address and phone number below if you are interested in receiving a summary.

Address & Phone Number:

**APPENDIX B****MEASURES**

- B.1 ..... Counter Balance Form**
- B.2 ..... Demographic Form**
- B.3 ..... Screen for Adolescent Violence Exposure**
- B.4 ..... War Experiences Questionnaire-Revised**
- B.5 ..... Self-Reported Delinquency**
- B.6 ..... New York Teacher Rating Scale**
- B.7 ..... UCLA PTSD Index**
- B.8 ..... Emotional Numbing Scale-Revised**
- B.9 ..... Hopelessness Scale for Children**
- B.10 ..... Attitudes Toward Violence Scale**
- B.11 ..... Acceptance of Couples Violence**

**B.1****Counter Balance Form**

<u>Order A</u> .....	<u>Order C</u>
Demographic Form .....	Demographic Form
Screen for Adolescent Violence Exposure.....	Emotional Numbing Scale-Revised
War Experiences Questionnaire-Revised *.....	Self-Reported Delinquency
UCLA PTSD Index .....	Hopelessness Scale for Children
Emotional Numbing Scale-Revised.....	Screen for Adolescent Violence Exposure
Hopelessness Scale for Children .....	War Experiences Questionnaire-Revised*
Attitudes Towards Violence Scale .....	UCLA PTSD Index
Acceptance of Couples Violence .....	Children's Depression Index-Short Form
Self-Reported Delinquency .....	Attitudes Towards Violence Scale
Children's Depression Index-Short Form .....	Acceptance of Couples Violence
 <u>Order B</u>	 <u>Order D</u>
Demographic Form .....	Demographic Form
Children's Depression Index-Short Form .....	Attitudes Towards Violence Scale
Attitudes Towards Violence Scale.....	Acceptance of Couples Violence
Acceptance of Couples Violence .....	Children's Depression Index-Short Form
Screen for Adolescent Violence Exposure.....	Screen for Adolescent Violence Exposure
War Experiences Questionnaire-Revised *.....	War Experiences Questionnaire-Revised*
UCLA PTSD Index.....	UCLA PTSD Index
Emotional Numbing Scale-Revised.....	Emotional Numbing Scale-Revised
Hopelessness Scale for Children.....	Hopelessness Scale for Children
Self-Reported Delinquency .....	Self-Reported Delinquency

\* Administered when applicable

ID#

\_\_\_\_\_

**Demographic Form**

Today's date: \_\_\_\_\_

Name of School: \_\_\_\_\_

Grade: \_\_\_\_\_

Child Information

Female \_\_\_\_\_ Male \_\_\_\_\_

Age: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

Race/Ethnicity:

_____ White	_____ Native American
_____ African American	_____ Asian/ Asian
American	_____ Other, specify
_____ Hispanic/Latino	
_____	



## B.3

## Screen for Adolescent Violence Exposure

We are interested in hearing about your experiences of bad things that you have seen, heard of, or that happened to you. Please read and answer the following statements about violent things that have happened at home, or in your neighborhood or school. For each statement, please circle the number that best describes *how often* these things have happened. For example, if you “have seen someone beaten up...at home” sometimes you would circle the number 2. **Remember seen means in-person, do NOT count things you have seen on television.**

At My Home ...	Never	Hardly Ever	Sometimes	Almost Always	Always
1. I have seen someone carry a gun	0	1	2	3	4
2. I have seen the police arrest someone	0	1	2	3	4
3. I have seen a kid hit a grownup	0	1	2	3	4
4. I have seen a grownup hit a kid	0	1	2	3	4
5. I have heard about someone getting shot	0	1	2	3	4
6. I have seen someone carry a knife	0	1	2	3	4
7. I have seen people scream at each other	0	1	2	3	4
8. I have seen someone get beat up	0	1	2	3	4
9. I have heard about someone getting killed	0	1	2	3	4
10. I have heard about someone getting attacked by a knife	0	1	2	3	4
11. I have heard about someone getting beat up	0	1	2	3	4
12. I hear gun shots	0	1	2	3	4
13. I have run for cover when someone started shooting	0	1	2	3	4
14. I have heard of someone carrying a gun	0	1	2	3	4
15. Someone has pulled a gun on me	0	1	2	3	4
16. I have seen someone get killed	0	1	2	3	4
17. Someone has pulled a knife on me	0	1	2	3	4
18. I have had shots fired at me	0	1	2	3	4
19. I have seen someone get shot	0	1	2	3	4
20. I have been shot	0	1	2	3	4
21. I have seen someone pull a gun on someone else	0	1	2	3	4
22. I have seen someone pull a knife on someone else	0	1	2	3	4
23. I have been badly hurt	0	1	2	3	4
24. I have seen someone get attacked with a knife	0	1	2	3	4
25. I have seen someone get hurt badly	0	1	2	3	4
26. Grownups beat me up	0	1	2	3	4
27. Someone my age has threatened to beat me up	0	1	2	3	4
28. Grownups hit me	0	1	2	3	4
29. Grownups threaten to beat me up	0	1	2	3	4
30. Someone my age hits me	0	1	2	3	4
31. Grownups scream at me	0	1	2	3	4
32. I have been attacked with a knife	0	1	2	3	4

<b>In My Neighborhood ... (this includes your school)</b>	<b>Never</b>	<b>Hardly Ever</b>	<b>Sometimes</b>	<b>Almost Always</b>	<b>Always</b>
1. I have seen someone carry a gun	0	1	2	3	4
2. I have seen the police arrest someone	0	1	2	3	4
3. I have seen a kid hit a grownup	0	1	2	3	4
4. I have seen a grownup hit a kid	0	1	2	3	4
5. I have heard about someone getting shot	0	1	2	3	4
6. I have seen someone carry a knife	0	1	2	3	4
7. I have seen people scream at each other	0	1	2	3	4
8. I have seen someone get beat up	0	1	2	3	4
9. I have heard about someone getting killed	0	1	2	3	4
10. I have heard about someone getting attacked by a knife	0	1	2	3	4
11. I have heard about someone getting beat up	0	1	2	3	4
12. I hear gun shots	0	1	2	3	4
13. I have run for cover when someone started shooting	0	1	2	3	4
14. I have heard of someone carrying a gun	0	1	2	3	4
15. Someone has pulled a gun on me	0	1	2	3	4
16. I have seen someone get killed	0	1	2	3	4
17. Someone has pulled a knife on me	0	1	2	3	4
18. I have had shots fired at me	0	1	2	3	4
19. I have seen someone get shot	0	1	2	3	4
20. I have been shot	0	1	2	3	4
21. I have seen someone pull a gun on someone else	0	1	2	3	4
22. I have seen someone pull a knife on someone else	0	1	2	3	4
23. I have been badly hurt	0	1	2	3	4
24. I have seen someone get attacked with a knife	0	1	2	3	4
25. I have seen someone get hurt badly	0	1	2	3	4
26. Grownups beat me up	0	1	2	3	4
27. Someone my age has threatened to beat me up	0	1	2	3	4
28. Grownups hit me	0	1	2	3	4
29. Grownups threaten to beat me up	0	1	2	3	4
30. Someone my age hits me	0	1	2	3	4
31. Grownups scream at me	0	1	2	3	4
32. I have been attacked with a knife	0	1	2	3	4

## B.4

## War Experiences Questionnaire-Revised

Have you ever lived in a country or region where there was war or armed conflict going on around you?

If yes, which region and country \_\_\_\_\_.

If no, please raise your hand for assistance.

1. Did you move from your home country because of the war? Yes \_\_\_\_ No \_\_\_\_  
If yes, where are you living?  
 with mother  
 with father  
 with mother and father  
 with relatives  
 with friends  
 other (please explain) \_\_\_\_\_
  
2. Did any of your family members die during the war? Yes \_\_\_\_ No \_\_\_\_  
If yes, relationship of family members?  
 mother  
 father  
 brother  
 sister  
 uncle/aunt  
 grandfather  
 cousin  
 other relative
  
- 2a. Please put a star (\*) next to family members whose death/killing you witnessed if any
  
3. Was a good friend of yours killed during the war? Yes \_\_\_\_ No \_\_\_\_
  
4. Was any of your family members wounded during the war? Yes \_\_\_\_ No \_\_\_\_  
If yes, your relation to the family member  
 mother  
 father  
 brother  
 sister  
 uncle/aunt  
 grandfather  
 cousin  
 other relative
  
- 4a. Please put a star (\*) next to family members who you witnessed being wounded if any

5. Were you physically wounded during the war? Yes \_\_\_\_ No \_\_\_\_  
 If yes, how severe was the wound?  
 not severe, it healed fast  
 severe, needed some time to get well  
 severe, I will always have some unpleasantness due to the wound  
 very severe, I will always have pain, I will not be able to function like before
6. Was anyone in your family raped during the war? Yes \_\_\_\_ No \_\_\_\_  
 If yes, describe the relationship of the family member.  
 mother  
 sister  
 relative  
 aunt  
 other
- 6a. Please put a star (\*) next to family members who you witnessed being raped if any
7. Did you experience any of the following during the war?  
 shooting close-up  
 sniper shooting  
 shot by a sniper  
 rape  
 saw others wounded in the war  
 saw others killed in the war  
 saw others raped in the war  
 saw people being beaten  
 saw people being stoned  
 saw family member killed  
 heard people scream for help  
 heard people being killed  
 saw homes burned down  
 was caught in a burning home  
 helped to carry the wounded or killed  
 someone threatened to kill you  
 were in a situation where you thought you would be killed  
 experienced serious absence of food and water  
 thought you'd die of coldness
8. Did you live in a refugee camp during or after the war? Yes \_\_\_\_ No \_\_\_\_  
 If yes, did you experience any of the following while living at the refugee camp?  
 being beaten up  
 saw others beaten up  
 being threatened with harm  
 rape/sexual abuse  
 saw others raped/sexually abused  
 saw others threatened with harm  
 extreme hunger  
 extreme cold

## B.5

## Self-Reported Delinquency Self-Reported Delinquency

This questionnaire contains a number of questions about your behavior in the last year. Please answer all of the questions as accurately as you can. Do not try to look good or bad. All the information you provide is **totally confidential** and will not be shown to your parents, teachers, or anyone else.

In the last year how many times have you:	Never	1-3	4-6	7-9	10 or More
1. purposely damaged or destroyed property belonging to your parents or other family members.	0	1	2	3	4
2. purposely damaged or destroyed property belonging to a school.	0	1	2	3	4
3. purposely damaged or destroyed other property that did not belong to you (not counting family or school property).	0	1	2	3	4
4. stolen (or tried to steal) a motor vehicle, such as a car or motorcycle.	0	1	2	3	4
5. stolen (or tried to steal) something worth more than \$50.	0	1	2	3	4
6. knowingly bought, sold or held stolen goods (or tried to do any of these things).	0	1	2	3	4
7. thrown objects (such as rocks, snowballs, or bottles) at cars or people.	0	1	2	3	4
8. run away from home.	0	1	2	3	4
9. lied about your age to gain entrance or to purchase something; for example, lying about your age to buy liquor or get into a movie.	0	1	2	3	4
10. carried a hidden weapon other than a plain pocket knife.	0	1	2	3	4
11. stolen (or tried to steal) things worth \$5 or less	0	1	2	3	4
12. attacked someone with the idea of seriously hurting or killing him/her.	0	1	2	3	4
14. been involved in gang fights.	0	1	2	3	4
15. sold marijuana or hashish ("pot," "[weed]," "hash").	0	1	2	3	4
16. cheated on school tests.	0	1	2	3	4
17. hitchhiked where it was illegal to do so.	0	1	2	3	4
18. stolen money or other things from your parents or other members of your family.	0	1	2	3	4
19. hit (or threatened to hit) a teacher or other adult at school	0	1	2	3	4
20. hit (or threatened to hit) one of your parents).	0	1	2	3	4
21. hit (or threatened to hit) other students.	0	1	2	3	4
22. been loud, rowdy, or unruly in a public place (disorderly conduct).	0	1	2	3	4
23. sold hard drugs, such as heroin, cocaine, or LSD.	0	1	2	3	4
24. taken a vehicle for a ride (drive) without the owner's permission.	0	1	2	3	4
25. had (or tried to have) sexual relations with someone against their will.	0	1	2	3	4
26. used force (strong-arm methods) to get money or things from other students.	0	1	2	3	4

<b>In the last year how many times have you:</b>	<b>Never</b>	<b>1-3</b>	<b>4-6</b>	<b>7-9</b>	<b>10 or More</b>
27. used force (strong-arm methods) to get money or other things from a teacher or other adult at school.	0	1	2	3	4
28. <b>used force (strong-arm methods) to get money or other things from other people (not students or teachers).</b>	0	1	2	3	4
29. avoiding paying for such things as movies, bus rides, and food.	0	1	2	3	4
30. <b>been drunk in a public place.</b>	0	1	2	3	4
31. stolen (or tried to steal) things worth between \$5 and \$50	0	1	2	3	4
32. stolen (or tried to steal) something at school, such as someone's coat from a classroom, locker, cafeteria, or a book for the library.	0	1	2	3	4
33. broken into a building or vehicle (or tried to break in) to steal something or just look around	0	1	2	3	4
34. <b>begged for money or things from strangers.</b>	0	1	2	3	4
35. skipped classes without an excuse.	0	1	2	3	4
36. <b>failed to return extra change that a cashier gave you by mistake.</b>	0	1	2	3	4
37. been suspended from school.	0	1	2	3	4
38. <b>made obscene telephone calls, such as calling someone and saying dirty things.</b>	0	1	2	3	4
<b>In the last year how many times have you <u>used</u>:</b>	<b>Never</b>	<b>1-3</b>	<b>4-6</b>	<b>7-9</b>	<b>10 or More</b>
39. alcoholic beverages (beer, wine, hard liquor).	0	1	2	3	4
40. marijuana—hashish (“weed,” “grass,” “pot,” “hash”).	0	1	2	3	4
41. hallucinogens (“Mushrooms” “LSD,” “Mescaline,” “Acid”).	0	1	2	3	4
42. methamphetamines (“Meth,” “Ice” or amphetamines (“Uppers,” “Speed,” “Whites”).	0	1	2	3	4
43. barbiturates (“Downers,” “Reds”).	0	1	2	3	4
44. heroin (“Horse,” “Smack”).	0	1	2	3	4
45. cocaine (“Crack,” “Coke”).	0	1	2	3	4

NEW YORK TEACHER RATING SCALE (NYTRS)  
FOR DISRUPTIVE AND ANTISOCIAL BEHAVIOR

**Please Rate the child on the items below, using the average child in a regular classroom as your basis for comparison. Rate the child's behavior over the previous four weeks.**

**Please answer all questions. For each item, indicate the degree of the problem. Not at all = 0; Just a little = 1; Pretty much = 2; Very much = 3.**

	<b>Not at All</b>	<b>Just a Little</b>	<b>Pretty Much</b>	<b>Very Much</b>
<b>1. Defiant</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>2. Angry</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>3. Argues, quarrels with teachers</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>4. Acts "smart" (impudent or sassy)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>5. Spiteful, vindictive</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>6. Loses temper</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>7. Disobedient, difficult to control</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>8. Tries to dominate others; bullies threatens</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>9. Easily annoyed by others</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>10. Blames others; denies own mistakes</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>11. Deliberately annoys others</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>12. Lies</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>13. Breaks school rules</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>14. Destroys or defaces property</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>15. Acts violently to other children or adults (hits, pushes, etc.)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>16. Starts physical fights</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>17. Gets involved in physical fights with peers</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>

NEW YORK TEACHER RATING SCALE (NYTRS)  
FOR DISRUPTIVE AND ANTISOCIAL BEHAVIOR

	<b>Not at All</b>	<b>Just a Little</b>	<b>Pretty Much</b>	<b>Very Much</b>
<b>18. Physically cruel</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>19. Assaults others</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>20. Carries a knife or other weapon</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>21. Has used a knife or other weapon, in a fight</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>22. Has mugged someone</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>23. Sexual misbehavior (not masturbation)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>24. Steals on the sly</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>25. Shakes down others for money or other belongings</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>26. Late to school or class</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>27. Truants</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>28. Others like to play with him/her</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>29. Peers seek his/her company</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>30. Is liked by peers</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>31. Helpful to others</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>32. Has at least one good friend</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>33. Is considerate with friends/ companions</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>34. Shows remorse when does something wrong</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>35. How much of conduct problem is the child at this time?</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>36. How much of an academic problem does the child have at this time?</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>



## B.7

## UCLA PTSD Index

Below is a list of a few more very scary, dangerous or violent things that sometimes happen to people. Some people have had these experiences, some people have not had these experiences. Please be honest in answering if the violent thing happened to you, or if it did not happen to you.

**FOR EACH QUESTION: Check "Yes" if this scary/bad thing HAPPENED TO YOU**  
**Check "No" if it DID NOT HAPPEN TO YOU**

1) Being in a big earthquake that badly damaged the building you were in.	Yes [ ]	No [ ]
2) Being in another kind of <b>disaster</b> , like a fire, tornado, flood or hurricane.	Yes [ ]	No [ ]
3) Being in a bad <b>accident</b> , like a <b>very serious</b> car accident.	Yes [ ]	No [ ]
4) Being in place where a <b>war</b> was going on around you.	Yes [ ]	No [ ]
5) Seeing a <b>dead body</b> in your town (do not include funerals).	Yes [ ]	No [ ]
6) Having an adult or someone much older touch your <b>private sexual body parts</b> when you did not want them to.	Yes [ ]	No [ ]
7) Hearing about the <b>violent death or serious injury</b> of a loved one.	Yes [ ]	No [ ]
8) Having <b>painful and scary medical treatment in a hospital</b> when you were very sick or badly injured.	Yes [ ]	No [ ]

9) <b>OTHER</b> than the situations described above, has <b>ANYTHING ELSE</b> ever happened to you that was <b>REALLY SCARY, DANGEROUS OR VIOLENT</b> ? Yes [ ] No [ ]
10) Based on all of the questions asked on the last 3 pages (including this one), please place a star (*) next to the event/situation that bothers you the most.
Please circle how much this event/situation bothers you. <b>1= bothers me a little      2=bothers me somewhat      3=bothers me a lot</b>

**FOR THE NEXT QUESTIONS, please CHECK [YES] or [NO] to answer HOW YOU FELT during or right after the bad thing happened that you just wrote about in Question 14.**

11) Were you scared that you would die?	Yes [ ]	No [ ]
12) Were you scared that you would be hurt badly?	Yes [ ]	No [ ]
13) Were you hurt badly?	Yes [ ]	No [ ]
14) Were you scared that someone else would die?	Yes [ ]	No [ ]
15) Were you scared that someone else would be hurt badly?	Yes [ ]	No [ ]
16) Was someone else hurt badly?	Yes [ ]	No [ ]
17) Did someone die?	Yes [ ]	No [ ]
18) Did you feel very scared, like this was one of your most scary experiences ever?	Yes [ ]	No [ ]
19) Did you feel that you could not stop what was happening or that you needed someone to help?	Yes [ ]	No [ ]
20) Did you feel that what you saw was disgusting or gross?	Yes [ ]	No [ ]
21) Did you run around or act like you were very upset?	Yes [ ]	No [ ]
22) Did you feel very confused?	Yes [ ]	No [ ]
23) Did you feel like what was happening did not seem real in some way, like it was going on in a movie instead of real life?	Yes [ ]	No [ ]

Here is a list of problems people sometimes have after very bad things happen. Please **THINK** about the bad thing that happened to you. Then, **READ** each problem on the list carefully. **CIRCLE ONE** of the numbers (0, 1, 2, 3 or 4) that tells how often the problem has happened to you **in the past month**.

**PLEASE BE SURE TO ANSWER ALL QUESTIONS**

<b>HOW MUCH OF THE TIME DURING THE PAST MONTH</b>	<b>Never</b>	<b>Rarely</b>	<b>Sometimes</b>	<b>Often</b>	<b>Almost Always</b>
1 I watch out for danger or things that I am afraid of.	0	1	2	3	4
2 When something reminds me of what happened, I get very upset, afraid or sad.	0	1	2	3	4
3 I have upsetting thoughts, pictures, or sounds of what happened come into my mind when I do not want them to.	0	1	2	3	4
4 I feel grouchy, or I am easily angered.	0	1	2	3	4
5 I have dreams about what happened or other bad dreams.	0	1	2	3	4
6 I feel like I am back at the time when the bad thing happened, living through it again.	0	1	2	3	4
7 I feel like staying by myself and not being with my friends.	0	1	2	3	4
8 I feel alone inside and not close to other people.	0	1	2	3	4
9 I try not to talk about, think about, or have feelings about what happened.	0	1	2	3	4
10 I have trouble feeling happiness or love.	0	1	2	3	4
11 I have trouble feeling sadness or anger.	0	1	2	3	4
12 I feel jumpy or startle easily, like when I hear a loud noise or when something surprises me.	0	1	2	3	4
13 I have trouble going to sleep or I wake up often during the night.	0	1	2	3	4
14 I think that some part of what happened is my fault.	0	1	2	3	4
15 I have trouble remembering important parts of what happened.	0	1	2	3	4
16 I have trouble concentrating or paying attention.	0	1	2	3	4
17 I try to stay away from people, places, or things that make me remember what happened.	0	1	2	3	4
18 When something reminds me of what happened, I have strong feelings in my body, like my heart beats fast, my head aches, or my stomach aches.	0	1	2	3	4
19 I think that I will not live a long life.	0	1	2	3	4
20 I have arguments or physical fights.	0	1	2	3	4
21 I feel pessimistic or negative about my future.	0	1	2	3	4
22 I am afraid that the bad thing will happen again.	0	1	2	3	4

### Emotional Numbing Scale-Revised

**Important Instructions:** With this questionnaire, we are trying to get a sense of the kinds of different emotional reactions you are able to experience. Using the numbers below, rate how much each of the statements describes your tendency to experience these feelings. Please note, we are **NOT** asking about how likely you would be to **show** these feelings to other people. Instead, we are asking how you would **feel** inside. Please keep this in mind as you read each item

How Much Like You?	Not at all	A Little	Somewhat	Very	Entirely
1. Participating in my favorite activities brings me pleasure.	0	1	2	3	4
2. I would feel sad if someone special to me died.	0	1	2	3	4
3. I get angry when someone treats me badly.	0	1	2	3	4
4. I become angry when someone has done something to hurt me.	0	1	2	3	4
5. I feel excited before big events.	0	1	2	3	4
6. I don't experience loving feelings.	0	1	2	3	4
7. I care deeply for the important people in my life.	0	1	2	3	4
8. I feel my emotions as strongly and intensely as others.	0	1	2	3	4
9. If a loved one was in danger, I would be scared.	0	1	2	3	4
10. Some activities I do bring me a real adrenaline rush.	0	1	2	3	4
11. I get angry if someone threatens me.	0	1	2	3	4
12. I feel happy when things turn out better than I expect.	0	1	2	3	4
13. I feel proud when I am able to do something difficult.	0	1	2	3	4
14. I think of myself as a very emotional person.	0	1	2	3	4
15. Certain movies can make me feel sad.	0	1	2	3	4
16. I feel afraid when I am in dangerous situations.	0	1	2	3	4
17. I get really annoyed when someone hassles me.	0	1	2	3	4
18. A good joke can make me feel amused.	0	1	2	3	4
19. I get angry if I don't get something I really want and deserve.	0	1	2	3	4
20. I would be afraid if I was being threatened.	0	1	2	3	4
21. Hearing stories of other people losing a loved one makes me feel sad.	0	1	2	3	4
22. I feel sad when things turn out badly.	0	1	2	3	4
23. I feel sad when someone does something to hurt me.	0	1	2	3	4
24. I feel sad when I am separated from someone I care about.	0	1	2	3	4
25. I feel closeness when I share a special experience with another person.	0	1	2	3	4
26. I get annoyed when I am insulted.	0	1	2	3	4
27. When someone insults me, I feel hurt.	0	1	2	3	4
28. I am happy when someone pleasantly surprises me.	0	1	2	3	4
29. I feel passionate about some things.	0	1	2	3	4
30. I feel sad when I don't get something I really want and deserve.	0	1	2	3	4
31. I feel satisfied when I reach an important goal.	0	1	2	3	4
32. I feel scared when I think I may be hurt or harmed in some way.	0	1	2	3	4
33. I try to keep my deepest feelings hidden from people.	0	1	2	3	4

## B.9

## Hopelessness Scale for Children

<b>FOR THE NEXT QUESTIONS, please CHECK [YES] or [NO] to answer if you believe these statements.</b>		
1. I want to grow up because I think things will get better.	Yes [ ]	No [ ]
2. I might as well give up because I can't make things better for myself.	Yes [ ]	No [ ]
3. When things are going badly, I know that they won't be bad all the time.	Yes [ ]	No [ ]
4. I can imagine what my life will be like when I grow up.	Yes [ ]	No [ ]
5. I have enough time to finish the things I really want to do.	Yes [ ]	No [ ]
6. Someday, I will be good at doing the things that I really care about.	Yes [ ]	No [ ]
7. I will get more of the good things in life than most other kids.	Yes [ ]	No [ ]
8. I don't have good luck and there is no reason to think I will when I grow up.	Yes [ ]	No [ ]
9. All I can see ahead of me are bad things not good things.	Yes [ ]	No [ ]
10. I don't think I will get what I really want.	Yes [ ]	No [ ]
11. When I grow up, I think I will be happier than I am now.	Yes [ ]	No [ ]
12. Things just won't work out the way I want them to.	Yes [ ]	No [ ]
13. I never get what I want, so it's dumb to want anything	Yes [ ]	No [ ]
14. I don't think I will have any real fun when I grow up.	Yes [ ]	No [ ]
15. Tomorrow (the future) seems unclear and confusing to me.	Yes [ ]	No [ ]
16. I will have more good times than bad times.	Yes [ ]	No [ ]
17. There's no use in really trying to get something I want because I probably won't get it.	Yes [ ]	No [ ]

## B.10

## Attitudes Toward Violence Scale

To which extent do you agree or disagree with the following?	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I can see myself committing a violent crime in 5 years	0	1	2	3
2. I could see myself joining a gang.	0	1	2	3
3. It's ok to use violence to get what you want.	0	1	2	3
4. <sub>b</sub> I try to stay away from places where violence is likely .	0	1	2	3
5. People who use violence get respect.	0	1	2	3
6. Lot's of people are out to get you.	0	1	2	3
7. Carrying a gun or weapon would help me feel safer.	0	1	2	3
8. If a person hits you, you should hit them back.	0	1	2	3
9. It's okay to beat up a person for badmouthing me or my family.	0	1	2	3
10. It's okay to carry a gun or a knife if you live in a rough neighborhood.	0	1	2	3
11. It's okay to do whatever it takes to protect yourself.	0	1	2	3
12. It's good to have a gun.	0	1	2	3
13. Parents should tell their children to use violence if necessary.	0	1	2	3
14. <sub>b</sub> If someone tries to start a fight with you, you should walk away.	0	1	2	3
15. <sub>b</sub> I'm afraid of getting hurt by violence.	0	1	2	3

## B.11

## Acceptance of Couples Violence

To which extent do you agree or disagree with the following?	Strongly Disagree	Disagree	Agree	Strongly Agree
1. A boy angry enough to hit his girlfriend must really love her.	0	1	2	3
2. Violence between boyfriends and girlfriends can improve a relationship.	0	1	2	3
3. Girls sometimes deserve to be hit by the boys they date.	0	1	2	3
4. A girl who makes a boy jealous on purpose deserves to be hit.	0	1	2	3
5. Boys sometime deserve to be hit by the girls they date.	0	1	2	3
6.. A girl angry enough to hit her boyfriend must love him very much.	0	1	2	3
7. There are times when violence between dating partners is okay.	0	1	2	3
8. A boy who makes his girlfriend jealous on purpose deserves to be hit.	0	1	2	3
9. Sometimes violence is the only way to express your feelings.	0	1	2	3
10. Some couples must use violence to solve their problems.	0	1	2	3
11. Violence between boyfriend and girlfriend is a personal matter and no one should interfere.	0	1	2	3

## Appendix C

Table 13: Means and Standard Deviations for War-Exposed Youth vs. Entire Sample

Table 13

Means and Standard Deviations for War-Exposed Youth vs. Entire Sample

Measure	War-Exposed*		Entire Sample		
	Mean	sd	Mean	sd	Range
<b>SAVE</b>					
<b>Community Violence</b> <sup>a</sup>	19.0	10.93	18.14	13.23	0 – 64
<b>Home Violence</b> <sup>a</sup>	4.73	5.68	6.38	7.56	0 – 31 <sup>b</sup>
<b>WEQ-R</b>	6.4	2.88	---	---	1 – 10
<b>PTSD-I</b> <sup>a</sup>	30.64	22.96	21.33	17.09	0 – 65
<b>CDI-S</b>	4.70	5.70	2.81	3.41	0 – 18
<b>HSC</b>	5.0	3.92	3.11	3.00	0 – 16
<b>ENS</b>	87.75	28.26	82.86	22.89	11 – 128
<b>ATVS</b>	17.75	5.34	15.68	6.82	5– 45
<b>ACV</b>	3.75	2.66	3.25	4.08	0 – 20 <sup>d</sup>
<b>SRD</b> <sup>a</sup>	9.73	11.92	8.59	10.41	0 – 50 <sup>e</sup>
<b>TRF Total</b>	8.60	8.82	12.48	17.41	0 – 85
<b>NYTRS Problem Behavior</b>	4.0	3.81	3.66	6.39	0 – 35

*Note: PTSD-I = UCLA PTSD Reaction Index; HSC = Hopelessness Scale for Children; ENS = Emotional Numbing Scale; ATVS = Attitude Towards Violence Scale; ACV = Acceptance of Couple's Violence; SRD = Self-Reported Delinquency; TRF = Teacher Report Form; NYTRS = New York Teacher Rating Scale.*



## Appendix D

Figure 11: Alternate Model with Home Violence and Aggressive Cognitions as Precipitators

Figure 12: Alternate Model without Nonsignificant Paths

Figure 13: Structural Model for Girls

Figure 14: Structural Model for Boys

Figure 15: Depression as a Mediator

Figure 16: Measurement Model

Figure 11  
 Alternate Model with Home Violence and Aggressive Cognitions as Precipitators

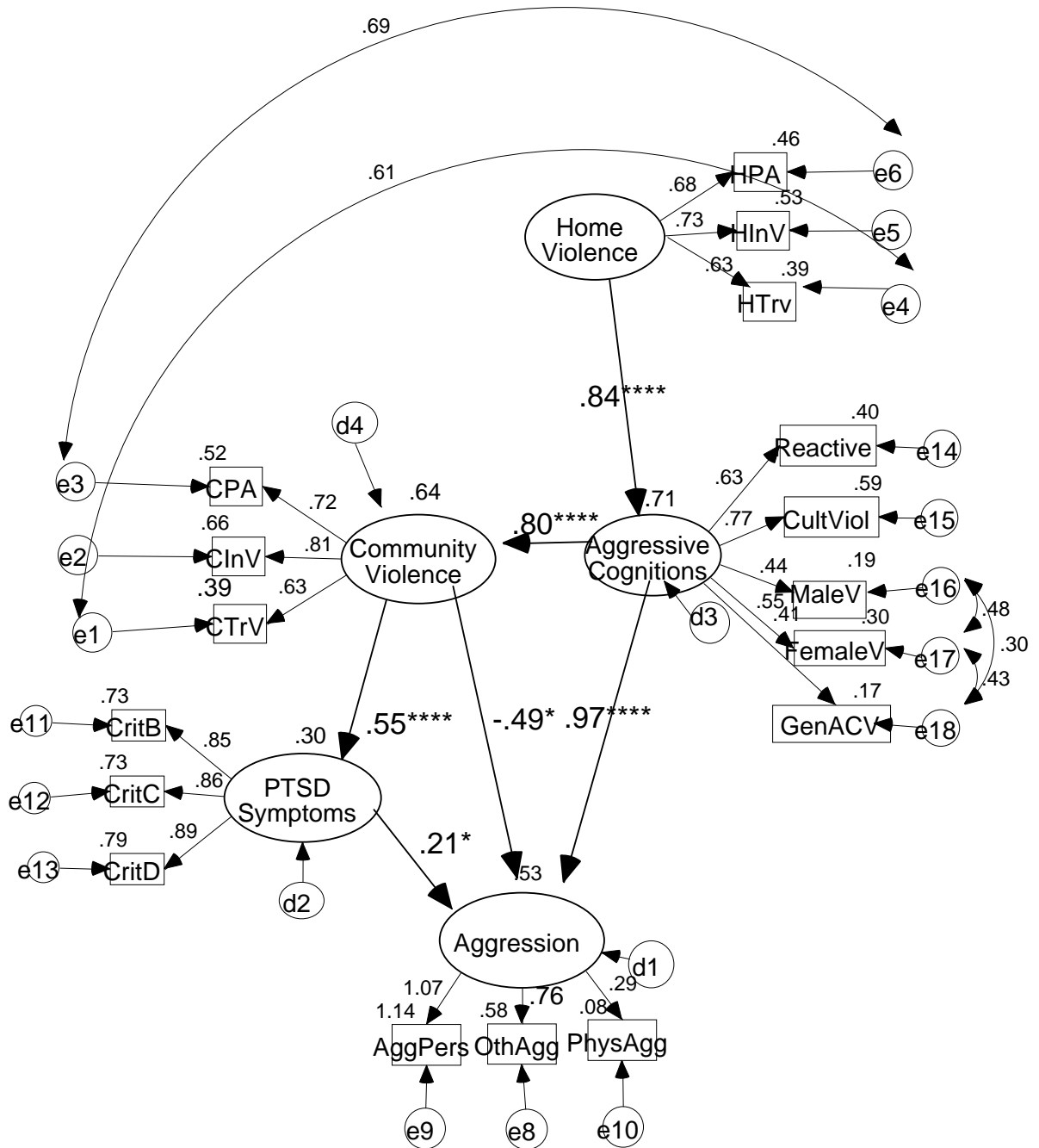


Figure 12  
 Alternate Model without Nonsignificant Paths

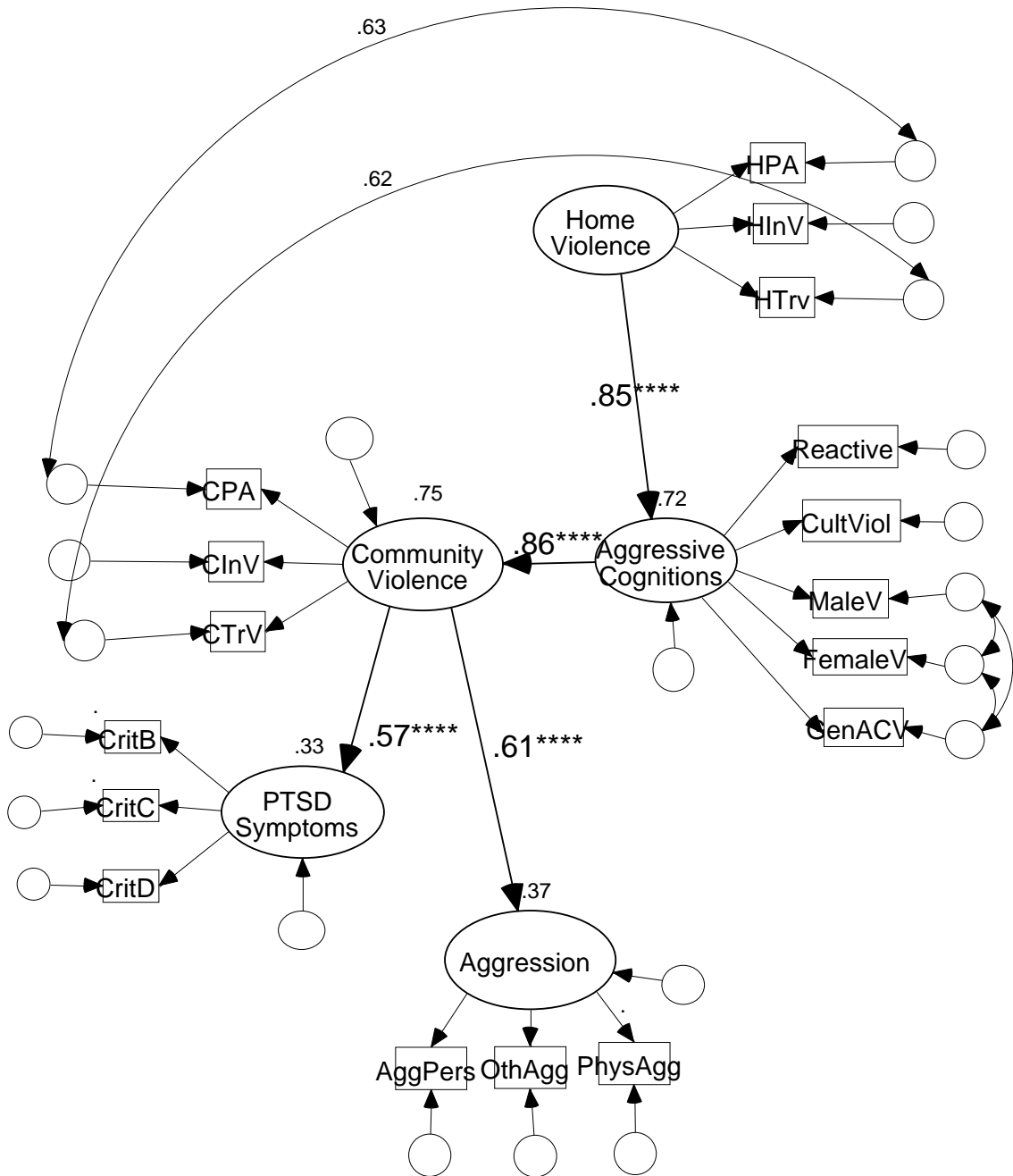


Figure 13  
Structural Model for Girls

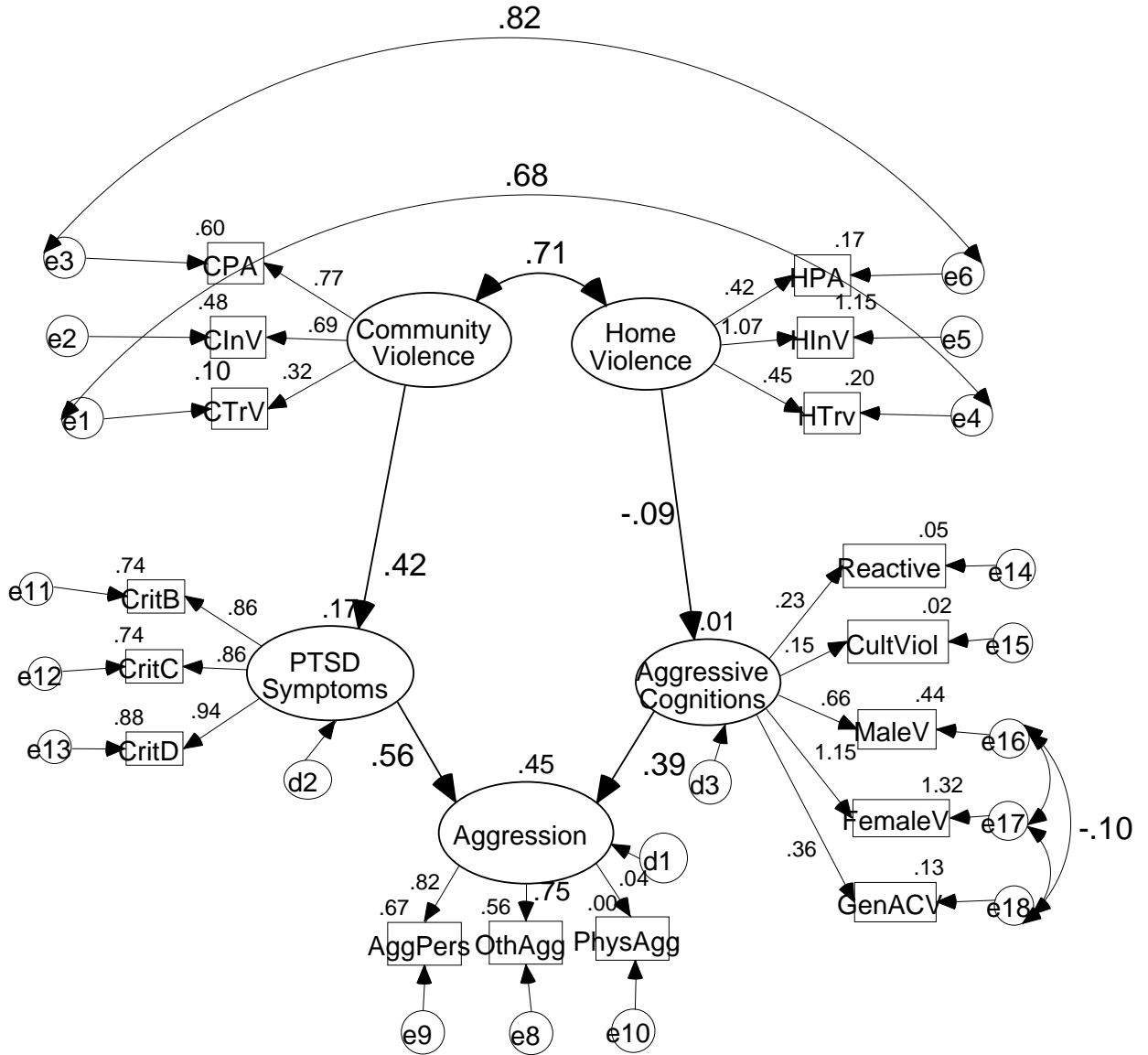


Figure 14  
Structural Model for Boys

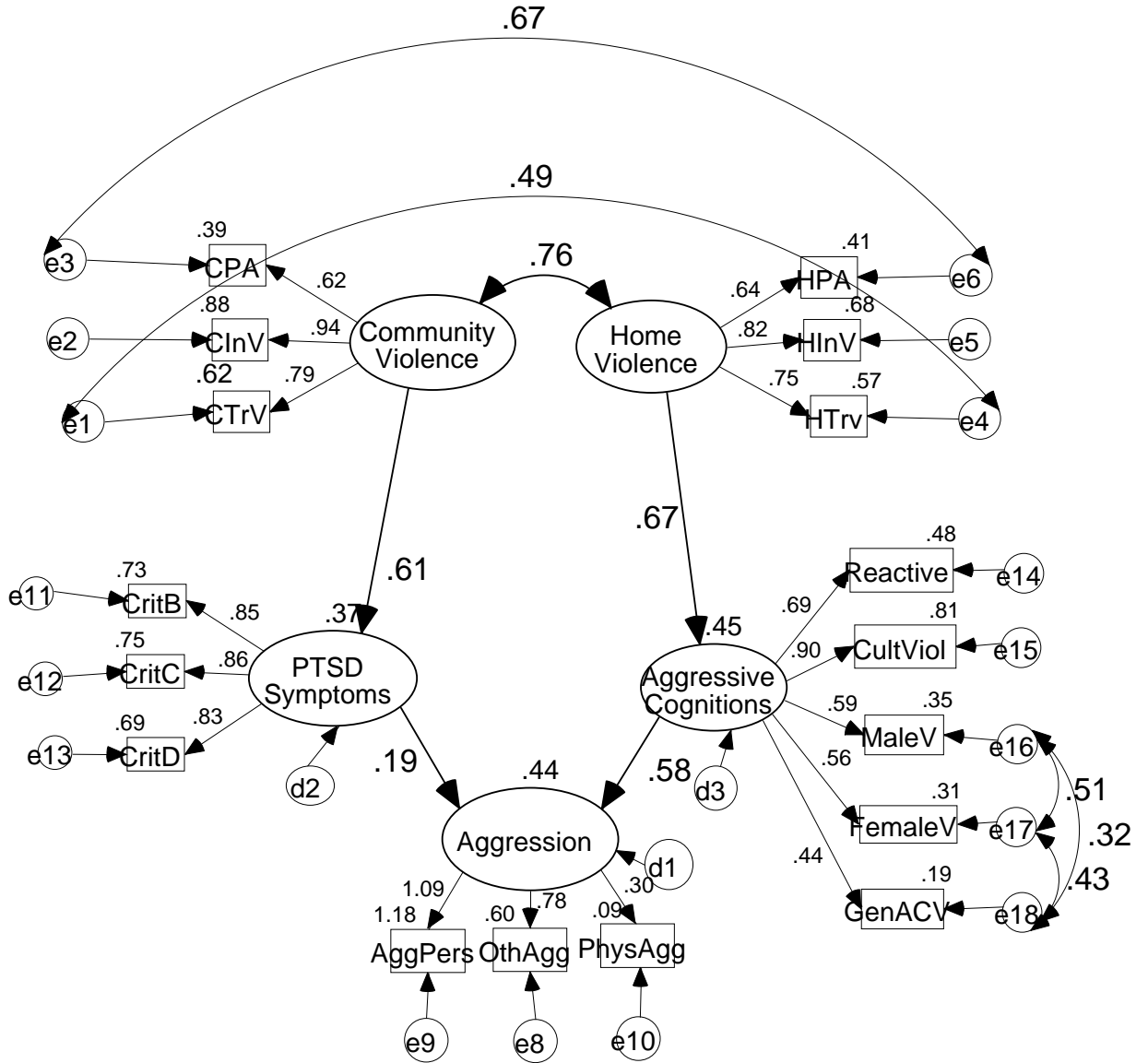
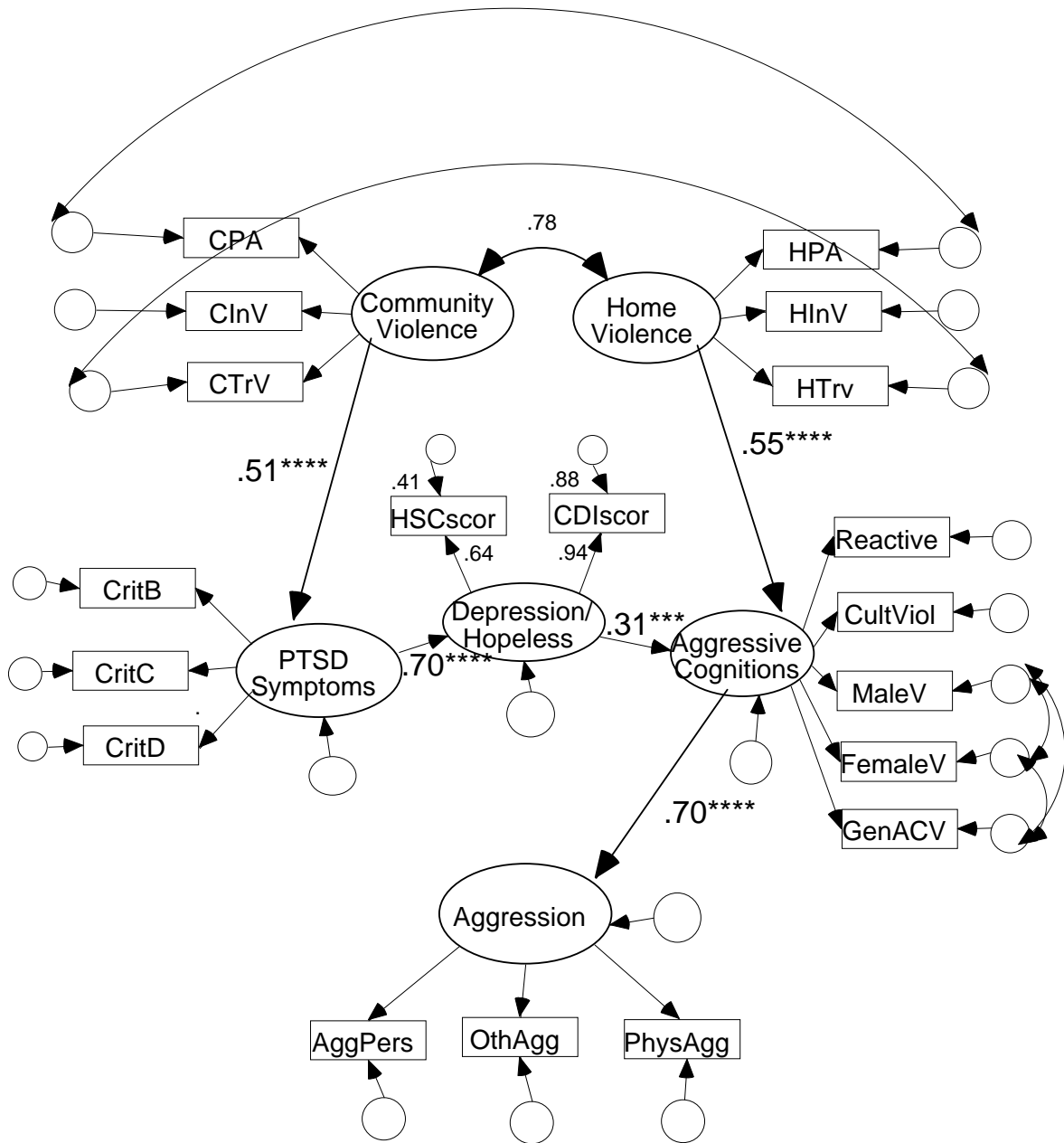
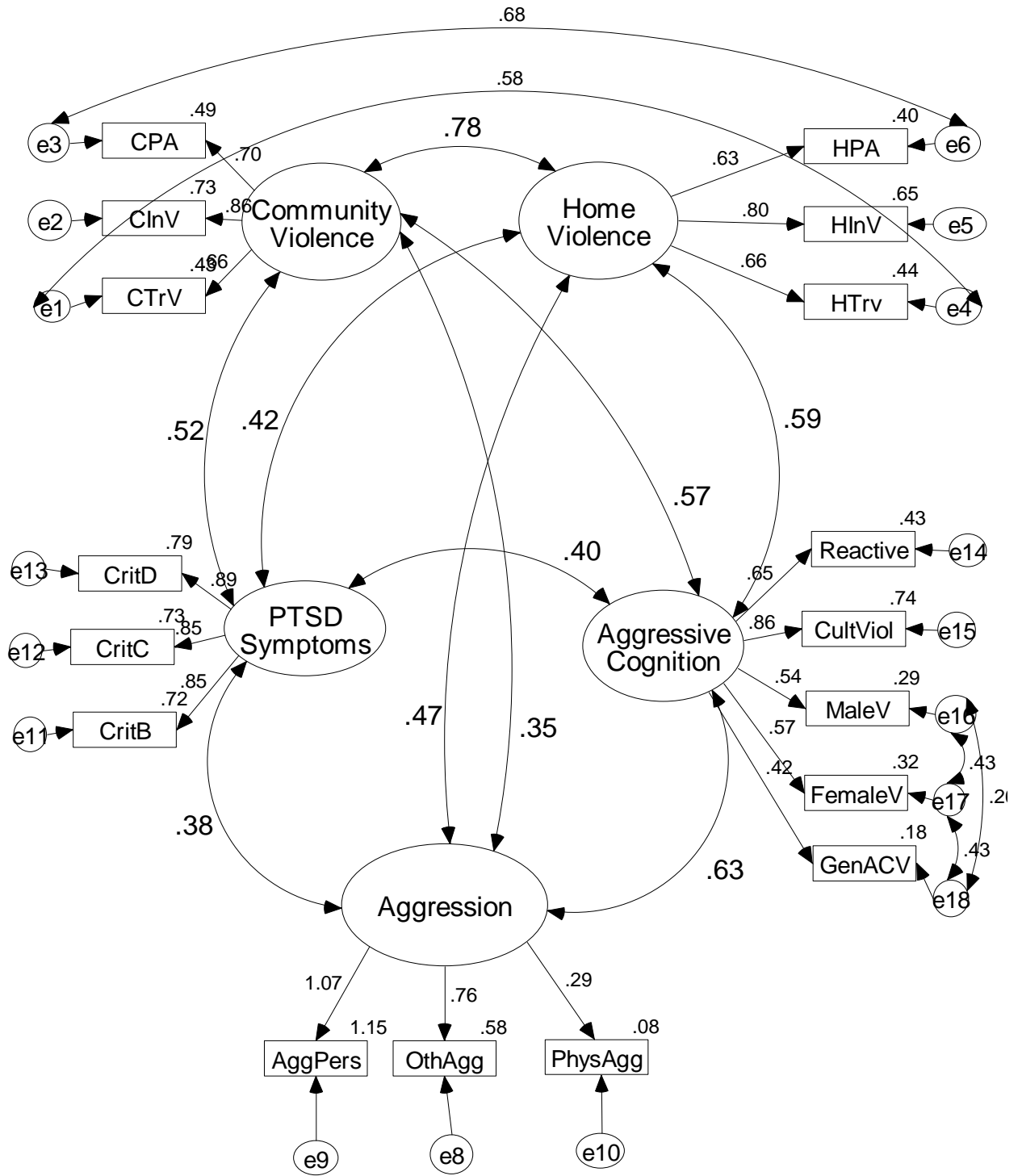


Figure 15  
 Depression as an additional mediator



\* p < .05, \*\* p < .01, \*\*\* p < .001, \*\*\*\* p < .0001

Figure 14: Full Measurement Model



## VITA

Maureen Angela Allwood was born in Kingston, Jamaica and moved to the United States at the age of 8. She attended public schools in Highland Park and Oak Park, Michigan. Ms. Allwood received her B.S. in Psychology from Michigan State University (1987) and her MS. in Clinical Psychology from Eastern Michigan University (1993). After working for several years with youth and families in a specialized foster care program and with children suffering from traumatic brain injuries, Ms. Allwood returned to higher education and received her M.A. and Ph.D. in Clinical Psychology from University of Missouri-Columbia (2002, 2005). Ms. Allwood completed her clinical internship at the Boston Consortium in August 2005, and is currently a postdoctoral research Fellow at Brown University and Rhode Island Hospital.