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THE MODERATING ROLE OF DEVELOPMENTAL ASSETS ON RELATIONS BETWEEN CHILD MALTREATMENT, TRAUMA, AND DATING VIOLENCE

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THE MODERATING ROLE OF DEVELOPMENTAL ASSETS ON RELATIONS BETWEEN CHILD MALTREATMENT, TRAUMA, AND DATING VIOLENCE

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

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Abstract

THE MODERATING ROLE OF DEVELOPMENTAL ASSETS ON RELATIONS BETWEEN CHILD MALTREATMENT, TRAUMA, AND DATING VIOLENCE

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Teenage dating violence (TDV) is prevalent and associated with an array of psychosocial and health problems. Thus, numerous studies have focused on the identification of risk and protective factors for TDV. Child maltreatment has been consistently identified as a risk factor for TDV victimization and perpetration. However, potential underlying mechanisms that may partially explain the relations between child maltreatment and TDV victimization and perpetration are not well understood. The present study explored indirect relations between child maltreatment and TDV victimization and perpetration via trauma symptoms, and examined whether internal and external developmental assets moderated relations between (a) child maltreatment and trauma symptoms, and (b) trauma symptoms and TDV victimization and perpetration. Data were collected from 135 dating African American adolescents (57% female) who resided in high-burden neighborhoods in a midsized city in the Southeastern United States. Findings indicated that child maltreatment was associated with higher frequencies of TDV victimization and perpetration via trauma symptoms. However, contrary to expectations, composite measures of internal and external developmental assets did attenuate relations

between: (a) child maltreatment and trauma symptoms, or (b) trauma symptoms and dating violence. The implications of these findings are discussed.

Introduction

Romantic relationships are typically defined as mutually recognized, repeated, voluntary interactions characterized by affection and, in some cases, sexual behavior (Collins et al., 2009). By the age of sixteen, approximately 60% of youth have had a romantic relationship (Carver et al., 2003; Laursen et al., 2006). These relationships form a normative and important part of adolescents' social development as they can promote autonomy and psychosocial well-being (Joyner & Udry, 2000). Romantic relationships, regardless of gender or sexuality, provide opportunities for the development of personal and interpersonal skills that form the bases for intimate partnerships in adulthood (Collins, 2003; Connolly & McIsaac, 2009). However, teenage dating relationships can also be a source of conflict and emotional arousal (Joyner & Udry, 2000). Dating violence among adolescents is a prevalent public health problem associated with short- and long-term consequences, including internalizing symptoms, suicidal ideation, risk-taking behavior (e.g., drug use and delinquency), and disordered eating behaviors (CDC, 2014; Connolly & Josephson, 2007). Adolescents with histories of TDV are more likely to have academic difficulties and experience violence in future intimate partner relationships in adulthood (Connolly & Josephson, 2007; Holmes & Sher, 2013).

The dating violence literature is challenged by the variability that exists in the assessment of TDV. Researchers differ both in their focus in the assessment of dating violence (e.g., subtypes of dating violence –psychological, physical, and/or sexual that are included) and terminology used when describing violent behavior that occurs within a dating relationship (e.g., dating abuse, dating aggression, relationship abuse, or adolescent dating violence). While some researchers restrict this definition to include only physical violence or threats of physical violence against an intimate partner (e.g., Sugarman & Hotaling, 1989), most agree that TDV

encompasses all subtypes of aggressive behaviors that occur within a dating relationship (CDC: 2016). These behaviors can be experienced both in person or via technology and are typically used to control an intimate partner, cause humiliation, induce fear, or gain power (Foshee & Langwick, 2010; Offenhaur & Buchalter, 2011). The dating violence literature has focused on three subtypes of TDV, namely physical abuse, psychological/emotional abuse, and sexual abuse.

Physical abuse within a dating relationship refers to the intentional use or threat of physical violence or force (Sugarman & Hotaling, 1989). It is considered to be any action that causes pain or injury and can include pushing, spanking, biting, scratching, kicking, hair pulling, and assault with a weapon (Foshee et al., 2007; Sesar et al., 2012). Sexual abuse, in turn, is defined as any forceful or unwanted sexual activity and can include rape, attempted rape, sexual coercion, unwanted contact (e.g., touching or kissing), and birth control sabotage (Rickert et al., 2004). Finally, psychological or emotional dating violence is conceptualized as behaviors that are enacted in order to control, dominate, or intimidate a dating partner (Orpinas et al., 2012). These behaviors may include stalking, name-calling, berating, humiliating, and emotionally manipulating an intimate partner in order to undermine that individual's independence within the context of a dating relationship (Sugarman & Hotaling, 1989).

Prevalence rates of TDV also vary across studies due to a number of factors, including different data collection techniques, sampling approaches, operational definitions of TDV, and research designs (Foshee et al., 2007). Prevalence rates are further complicated by participant age range, as studies have generally found that TDV increases from middle to high school (Swahn et al., 2008), and also the difference in the time frames that the occurrence of TDV is measured (e.g., 3-months versus 12-months). A recent meta-analysis of 101 studies found that

the prevalence of physical TDV victimization for adolescents aged 13 to 18 was 21% (Wincentak et al., 2017). The rates for physical TDV perpetration, in turn, differed by sex, with 25% of girls and 13% of boys endorsing physical TDV (Wincentak et al., 2017). Rates of sexual TDV also varied by sex with 14% of girls reporting sexual TDV victimization compared to 8% of boys, and 3% of girls reporting sexual TDV perpetration compared to 10% of boys. While comparatively less research has explored prevalence rates for psychological TDV, researchers generally agree that it is the most common subtype of TDV and that it occurs more frequently than physical or sexual TDV (for a review see Barter, 2009). For example, among adolescents, frequencies of psychological TDV victimization ranged from 17% for girls and 24% for boys (Schutt, 2006) to 88% for girls and 85% for boys (O'Leary et al., 2008). Similarly, for psychological TDV perpetration, prevalence rates range from 34% for boys and 38% for girls (Swahn et al., 2008) to 82% for girls and 72% for boys (Niolon et al., 2015).

TDV among Minority Youth Living in High-Burden Communities

The Centers for Disease Control and Prevention (CDC, 2019) highlighted that youth and families living in high-burden, urban areas often experience community-level risk factors for youth violence that stem from poverty including concentrated residential density, limited access to economic opportunities, high resident mobility, low levels of neighborhood organization, and family disruption. Nation (2018) noted that African American and Latinx youth and families are overrepresented in high-burden communities and discussed the role of structural racism in isolating communities and creating inequities in resources. Sheats et al. (2018) noted that the above factors as create “violence-related disparities” in the form of disparate rates of violence exposure for African American youth and young adults as compared to white youth and young

adults. Thus, youth living in high-burden, urban communities may be at increased risk for TDV given exposure to poverty-related stressors (Niolon et al., 2015).

Specifically, youth living in impoverished, high-burden communities are more likely to be exposed to community violence that may include witnessing or being a victim of violence (Finkelhor et al., 2005). Such experiences of community violence, in turn, increases the risk for TDV victimization and perpetration (Black et al., 2015; Lewis & Fremouw, 2001). Several studies have indicated concerning rates of TDV among youth living in high-burden, urban communities (e.g., Foshee et al., 2009; Niolon et al., 2015; Watson et al., 2001; Wilson et al., 2012). For example, among 1,653 middle school students (48% non-Latinx, Black, 38% Latinx, 5% non-Latinx, white, and 8% another race/ethnicity) living in low-income, urban communities, prevalence rates of physical and emotional TDV were 33% and 77%, respectively (Niolon et al., 2015). Further, prevalence rates for dating violence victimization and perpetration were 49% and 41%, respectively, among a primarily African American, urban sample of 938 middle school students, many of whom lived in under-resourced communities (Goncy et al., 2017). Howard and Wang (2003) found that African American girls are twice as likely to experience physical TDV as white girls, and the CDC (2018) reported that African American youth are most at risk for dating violence victimization. However, there is a paucity of published studies on dating violence among African-American youth (West & Rose, 2000).

Differentiating Between TDV and Adult Intimate Partner Violence (IPV)

The majority of the literature exploring risk and protective factors for TDV focuses on adult samples (e.g., Kendra et al., 2012; Whitfield et al., 2003). While research on IPV and domestic violence can inform our understanding of TDV given some of their shared characteristics (e.g., they both occur within the context of romantic relationships, involve one

partner exerting control or power over the other, and have similar risk factors), TDV is different from IPV in several ways that highlight the importance of studying TDV. Data from the CDC's Youth Risk Behavior Survey indicated that 26% of women and 15% of men who were victims of IPV first experienced dating violence before the age of eighteen (Smith et al., 2018). Further, a growing-body of research indicates that TDV peaks during adolescence and then declines with age (Capaldi & Langhinrichsen-Rohling, 2012). As such, adolescence, a developmental stage characterized by heightened stressors (McLaughlin & King 2015), presents a window of opportunity for intervention.

There are some important differences between TDV and IPV. First, TDV and IPV occur in different contexts. Adolescents rarely co-parent, cohabitate, or share finances and, as a result they are less likely to report arguing over children or money (Coleman, 1980; Roy, 1982). Given these differences, adolescents are also less likely to be subject to the gendered power dynamics that are often present in IPV (Wekerle & Wolfe, 1999), have less familial and financial attachment, and are often less involved in each other's' families (Carlson, 1987). Second, compared to adults, adolescents are more likely to be influenced by their social setting (Shorey et al., 2008). Adolescents may experience peer pressure to adhere to social norms when making decisions about their dating relationships (Freedland et al., 2005). These norms encourage romantic partners and, as a result, teens may feel pressures to remain in a violent relationship in order to maintain this status and not be excluded by their peers (Smith & Donnelly, 2000; Sousa, 2005).

Further, there is evidence to suggest that there are differences in prevalence between IPV and TDV. One study by the World Health Organization indicated that girls aged 15 to 19 were at the highest risk for physical and sexual violence by an intimate partner in all countries except for

Japan and Ethiopia (Garcia-Moreno et al., 2005). Gender differences may also be less apparent in TDV than in IPV (Wekerle & Wolfe, 1999). While research has consistently indicated that men are more likely than women to be perpetrators of IPV (Jackson, 1999; O'Keefe, 1997), studies exploring adolescent dating relationships often find reciprocal use of violence (e.g., (Swahn et al., 2010). However, there is some evidence that adolescent girls are more likely than boys to be perpetrators of TDV (Cascardi et al., 1999; Feiring et al., 2002; Goncy et al., 2017).

Adolescence represents a time of exploration and risk-taking behavior and, as such, some adolescents may not realize their behaviors encompass TDV, particularly if they are not familiar with the norms and boundaries of romantic relationships (Wekerle & Wolfe, 1999). For example, adolescents may confuse aggressive behavior such as pushing and shoving with intimacy (Henton, 1983). In one study of inner-city, middle school-aged youth, qualitative findings showed youth did not interpret pushing and shoving as violence (McIntyre, 2000), and that in some cases physical aggression between romantic partners in adolescence may be interpreted as the couple "just playing" (Love & Richards, 2013). Emotional or psychological abuse, such as controlling behavior and efforts to make the others jealous, may also be misinterpreted as signs of caring and commitment (Shorey et al., 2008). In a study of African American youth, some participants described physical but not psychological TDV when asked to define dating violence (Love & Richards, 2013). Some researchers found that African American adolescents who were exposed to higher levels of community violence viewed violence as being more normative than did African American adolescents who were exposed to lower levels of community violence (Black et al. 2015; Fredland et al., 2005). More broadly, these findings are consistent with literature indicating that, in some cases, dating violence among teens may be considered an expression of love (James et al., 2000). Additionally, there is a wide variety in adolescents'

definitions of a dating relationship and these range from being very casual to very serious (Collins et al., 2009). Teenagers may use language such as "talking", "hooking up", or "hanging out" when referring to a romantic relationship. While TDV can occur in any of these situations, adolescents may not realize that they can experience dating violence when in a "casual" relationship.

Some adolescents may struggle to utilize appropriate conflict resolution strategies in their dating relationships and may rely on anger or emotional abuse (Wekerle & Wolfe, 1999). Indeed, research has indicated that adolescents are more likely than adults to use violence as a means of resolving problems (Cutter-Wilson & Richmond, 2011). Dating in adolescence involves the development of a new set of interpersonal skills including managing intimacy and mutual exclusivity. Through their interactions with their dating partners, youth refine their communication skills, develop empathy, and acquire coping strategies. Finally, while child abuse accounts for approximately 4% of the variance in dating violence in adulthood, it accounts for 20% of the variance in TDV (O'Leary et al., 1994). Wekerle & Wolfe (1999) attribute this disparity to the fact that family abuse tends to peak during adolescence and may be more recent and relevant in adolescence than adulthood (Sedlack & Broadhurst, 1996). This highlights the need to develop evidence-based interventions for adolescents, as this developmental period provides a window of opportunity to address maladaptive behavior patterns that could persist into adulthood.

Child Maltreatment as a Risk Factor for TDV

Maltreated youth are more likely to have relationship-based difficulties (Wekerle & Avgoustis, 2003) and are 3.5 times more likely to be involved in adult IPV. Research has indicated that child maltreatment is associated with dating violence both concurrently (e.g., Duke

et al., 2010; Malik et al., 1997; Miller et al., 2011) and prospectively (e.g., Maas et al., 2010; Tyler et al., 2011) This relation has also been found across a number of samples, including youth (a) in community samples (Herrenkohl & Herrenkohl, 2007), (b) in foster care (Jonson-Reid et al., 2007), (c) referred by Child Protective Services (CPS) (Cyr et al., 2006) (d) involved in juvenile justice systems (Kelly et al., 2007), and (e) who exhibited antisocial behavior (Capaldi et al., 2001).

This literature is hindered by lack of a consistent definition of child maltreatment. Researchers use a wide range of measures to capture this construct, which limits the comparability across studies. According to the Federal Child Abuse Prevention and Treatment Act (CAPTA), child abuse refers to any action by a parent or caregiver that results in risk of serious harm of a child under the age of 18. The most common types of child abuse and neglect include: sexual abuse, physical abuse, emotional/psychological abuse, physical neglect, and emotional neglect. Confirmatory factor analyses support this conceptualization and indicate that, across different populations, child maltreatment falls onto these five factors (Bernstein et al., 2003).

Sexual abuse is defined as any act where an adult or older youth uses a child for sexual exploitation or gratification. These acts are not limited to penetration and may include oral sex, fondling, and exposure to pornography. Physical abuse, in turn, is characterized by any intentional act of force that causes or has the potential to cause harm. Examples of behaviors include hitting, burning, striking, and shaking. Emotional or psychological abuse refers to maltreatment that results in impaired psychological growth and has negative effects on the child's emotional health. It includes acts such as ridiculing, rejecting, ignoring, corrupting, humiliating, and verbally assaulting a child. Finally, neglect is frequently defined as an act of omission

characterized by a pattern of inadequate care. Physical neglect refers to a caregiver's failure to provide for a child's physical needs, including medical needs, shelter, nourishment and education. Emotional neglect, in turn, refers to a caregiver's failure to attend or respond to a child's emotional needs and feelings.

Clinicians and researchers are increasingly recognizing exposure to domestic violence or IPV as a type of child maltreatment (e.g., Holden, 2003; Johnson et al., 2005; Gilbert et al., 2009; MacMillan et al., 2009; Macmillian et al., 2013; Wathen & MacMillan, 2013). Exposure to IPV, or exposure to any violent or threatening behavior between adults who are or have been intimate partners, may include not only exposure to physical violence but also to psychological abuse, such as intimidation and controlling behaviors. Youth exposed to IPV are likely to live in psychological abusive environments and may be intimidated by the abuser into not reporting the violence (Holden, 2003). Exposure to IPV is also likely to induce distress, emotional arousal, and fear about the child's own safety (Holden, 2003). Indeed, research indicates that 47% of children respond to exposure to IPV with high levels of emotional distress (Smith et al., 1997).

Youth exposed to IPV are at increased risk for physical, sexual, and emotional abuse (Graham-Bermann et al., 2012) and, as such, the co-occurrence of exposure to IPV and other types of maltreatment is high (i.e., 60 to 75%; Osofosky, 2003). National Incidence Study of Reported Child Abuse and Neglect in Canada found that exposure to IPV made up over 34% of substantiated cases of child maltreatment. Similar to other subtypes of maltreatment, exposure to IPV is a prevalent public health problem associated with both short- and long-term social, emotional, and behavioral problems for youth (Gilbert et al., 2009; Wathen & Macmillan, 2013), including TDV (e.g., Carr & VanDeusen, 2002; Roberts et al., 2010; Stith et al., 2000). As a result, while some U.S. state laws are unclear about whether health care providers are required to

report exposure to IPV or domestic violence to Child Protective Services, other states (e.g., New Mexico) do require the mandated reporting of exposure to IPV (Matthews & Kenny, 2008). Notably, most Canadian provinces have expanded their definition of child maltreatment to include exposure to IPV and, as such, exposure to IPV mandates a report.

Youth affected by child maltreatment are likely to have altered developmental processes that influence their ability to form and maintain healthy relationships (Wolfe et al., 2004). They report higher rates of interpersonal anger and aggression (e.g., Beeghly & Cicchetti, 1994; Sheilds et al., 1994), as well as social-information processing biases (Dodge et al., 1994) and negative peer interactions (Rogosch et al., 1995). Maltreated youth are also more likely to develop learned helplessness, or the submissiveness that results from repeated exposure to uncontrollable and adverse experiences (Seligman, 1975). They may become accustomed to violence and, thus, may begin to expect it from their loved ones (Sullivan et al., 2005). As a result, research has consistently found that child maltreatment is a risk factor for future dating relationship violence perpetration and victimization (Bellis et al., 2014; Duke et al., 2010; Jones et al., 2018). For example, among a low-income sample of primarily white young adults involved in romantic relationships, physical abuse and exposure to IPV predicted TDV perpetration and victimization (Linder & Collins, 2005).

Sex differences. Data from the CDC's National Intimate Partner and Sexual Violence Survey indicates that while one in four women experience IPV, less than one in ten men experience IPV (Smith et al., 2018). Further, some studies indicated that the relations between child maltreatment and exposure to IPV, and dating violence may be moderated by sex. Several studies, including one meta-analysis, found that while exposure to IPV is more strongly associated with future IPV perpetration in males as compared to females, it is more strongly

associated with IPV victimization in females as compared to males (Stith et al., 2000; Whitfield et al., 2003). Feminist theory provides one possible explanation for this finding, as it theorizes that dating violence is a gendered issue. Researchers argue that across cultures, females tend to have less power and authority in their intimate partnerships (Archer, 2006; Stark, 2006), thus they may be more likely to perceive dating violence victimization as frightening, which results in internalizing symptoms (Freidrich et al., 1986). Researchers highlighted that another possible explanation is that children model the behavior of their same-sex parent and, thus, males are more likely to model perpetrating behavior after observing their fathers abusing their mothers, while females are more likely to take on the role of victim after observing their mothers in this role (Stith et al., 2000). This differential association parallels the differences in expression of psychopathology among youth with histories of maltreatment, as boys tend to report higher rates of externalizing symptoms whereas girls tend to report higher rates of internalizing symptoms (Mihalic & Elliott, 1997; Stith et al., 2000).

Research examining the degree to which the prevalence of child maltreatment varied by race/ethnicity has been inconsistent. CPS (2009) and the Fourth National Incidence Study of Child Abuse and Neglect (2010) reported maltreatment rates that were twice as high for African American youth than for white youth, and the U.S. Department of Health and Human Services (2016) reported higher maltreatment rates for African American as compared to Latinx and white youth. In contrast, other studies have found no racial/ethnic differences in rates of child abuse (e.g., Elliot & Urquinza, 2006; Medora et al., 2001). Researchers have suggested that the disproportionality in prevalence rates can be explained by poverty (Drake et al., 2009; Kim & Drake, 2018). In 2018, 20.8% of African American families were living in poverty, compared to 8.1% of non-Hispanic white families (U.S. Census Bureau, 2018). According to the Fourth

National Incidence Study of Child Abuse and Neglect (2010), there were no racial/ethnic differences in child maltreatment after accounting for income. However, the poverty gradient remains strong, and Kim and Drake (2018) found that children in families with incomes under $15,000 were 20 times more at-risk for certain types of child maltreatment than children in families with incomes over $30,000. Youth living in poverty are also exposed to related risk factors (e.g., community violence, residential density, and neighborhood disorganization) that can increase the risk for child maltreatment (Kim & Drake, 2018).

Researchers have suggested that the disproportionality in prevalence rates found in some studies may be explained by racial discrimination, and that some reporters may be biased against Black youth (Chibnall et al., 2003; Turbett & O'Toole, 1980). Further, several studies found racial/ethnic differences in outcomes of child maltreatment. For instance, in three studies, researchers found that African American victims of child maltreatment had lower prevalence of mood disorders and alcohol abuse than white victims, but higher prevalence of externalizing behavior which may stem from racial bias and discrimination (Breslau et al., 2006; Elliot, 1994; Lee et al., 2010; Peterson et al., 2010). One proposed explanation for this discrepancy is that Afrocentrism within African American communities may protect youth from internalizing symptoms and substance use (Peralta & Steele, 2010). Overall, it is important to understand the association between child maltreatment and TDV among African American youth living in high-burden neighborhoods.

Theoretical Frameworks. Several theoretical models and perspectives, including attachment and social learning theories, offer insight into the understanding the role of child maltreatment and exposure to IPV as risk factors for TDV. In this section, these models and perspectives are reviewed.

Social learning theory. Social learning theory (Bandura, 1977) explains how experiencing violence in the home may predispose adolescents to become victims and/or perpetrators of dating violence (Simon et al., 1998). This theory posits that learning occurs through observation and modeling of behavior. Thus, if maltreated youth are frequently exposed to aggression as a means to resolving conflict, they may consider violence in relationships to be normative or acceptable in dealing with conflicts in romantic relationships. As violence is modeled, "vicarious learning" occurs, whereby youth emulate the aggressive behavior they are exposed to (Malik et al., 1997). Another premise of social learning theory is that if a behavior is reinforced, it is more likely to occur. Given that maltreated youth are likely to be exposed to functionally positive consequences of using violence, such as deference or compliance, they may generate positive outcome expectations of violence. This increases the likelihood that youth will replicate this violent behavior later in the context of their own dating relationships (Foshee et al., 1999).

Bandura (1977) argued that learning is more likely to occur when the model is in a position of power. Given that parents are authority figures, they are often the main sources of learning for children. Witnessing and experiencing violence may also increase one's tolerance for violence, further heightening the risk for future perpetration and victimization. This "cycle of violence" hypothesis, thus, suggests that some victims and perpetrators of dating violence learned these behaviors through their experience of violence in childhood (Walker, 1984). Maltreated youth are more likely to experience powerlessness and difficulty developing trust, which impedes the development of appropriate coping mechanisms and may prime violent responses (Wolak & Finkelhor, 1998). Adults who rely on violent tactics for conflict resolution may not have had models or learned healthy conflict resolution skills (Lloyd, 1987). Thus, youth

with parents who engage in violence are more likely to have limited exposure to positive conflict resolution strategies such as negotiation or self-calming. In the absence of these skills, youth may rely on violent tactics when resolving disputes or may be more tolerant of such violent tactics. Researchers posit that, while the foundations for violence are primarily established during childhood, they are activated during adolescence with the onset of dating relationships (Earls et al., 1993). Thus, adolescence is a time of increased risk but may also present the chance for intervention efforts focused on the skills needed to create healthy romantic relationships in the early stages of dating.

Attachment theory. Attachment theory posits that early relationships lay the foundation for future relationships and, thus, disrupting early relationships can have serious consequences (Bowlby, 1969). A child's primary attachment relationship leads to the formation of schemas and the development of a cognitive framework that guides future relationships (Bowlby, 1969). This framework, in turn, is influenced by memories and past experiences (Bretherton & Munholland, 1999). Infants who have inaccessible or unresponsive caregivers tend to develop insecure attachments to their primary caregiver. Studies have shown that insecure attachment styles are related to increased relationship violence, as well as aggressive or delinquent behavior (Bui & Pasalich, 2018). In contrast, Magdol et al. (1998) demonstrated that individuals who experienced warmth and trust in their relationships with their caregivers were less likely to engage in abusive behavior in their future romantic relationships.

Using the Ainsworth et al. (1978) Strange Situation procedure, researchers have demonstrated that abused children are likely to have insecure attachments to their mothers (Egeland & Sroufe, 1981). There is evidence indicating that, when interacting with their children, abusive mothers tend to be more controlling and negative (Crittenden & Bonvillian,

1984). Thus, maltreated youth are often less likely to rely on others for comfort and support. Researchers have also posited that maltreating mothers do not form appropriate bonds with their children, further reinforcing their insecure attachment styles. Maltreated youth are, therefore, likely to have distorted representations of the self and others, and tend to have insecure attachments in their future relationships (Crittenden & Ainsworth, 1989). This leads to feelings of lack of self-worth and may decrease the ability of youth to seek emotional support (Belsky & Fearon, 2002).

Ainsworth and colleagues (1978) further identified two distinct categories of insecure attachment: ambivalent/resistant and avoidant. Ambivalent/resistant youth may view themselves as unlovable and others as disinterested in them, while avoidant youth may have a fear of intimacy and display affect restriction (Moretti & Peled, 2004). These youth form dysfunctional mental representations of relationships that guide their expectations for future romantic relationships (Bowlby, 1969). For example, individuals with anxious attachments may be hypersensitive to threats to the emotional bond with their romantic partner and may use manipulative or violent tactics to obtain more intimacy (Bui & Pasalich, 2018). Individuals with avoidant attachment styles, in turn, may have difficulty trusting their partner and may be motivated to exert control through abusive behavior (Gormley, 2005).

Trauma Symptoms as a Potential Mediator

While the relation between child maltreatment and dating violence has been widely established (Linder & Collins, 2005; Renner & Slack, 2006), potential mechanisms through which this transmission of violence may occur are not well understood (Orcutt et al., 2003). Given the high rates of psychopathology among both victims and perpetrators of dating violence, trauma symptoms have been proposed as one potential mediator (Finket et al., 2013). Research

has consistently indicated that child maltreatment predicts trauma symptoms (e.g., Ozer et al., 2008), and that trauma symptoms are a risk factor for IPV (see Bell & Orcutt, 2001 for a review). Additionally, there is some evidence to indicate that child maltreatment indirectly predicts TDV via trauma symptoms among adults (Swopes et al., 2013), emerging adults (Kendra et al., 2012), and adolescents (Wolfe et al., 2004). The following section will review the literature exploring trauma symptoms as a risk factor for TDV perpetration and victimization.

Trauma Symptoms as a Risk Factor for Dating Violence Perpetration. The majority of the literature in this area focused on male veterans and explored the association between post-war symptoms of post-traumatic stress disorder (PTSD) and perpetration of IPV (Bell & Orcutt, 2001). Findings have consistently indicated that male veterans with symptoms of PTSD report increased rates of anger reactivity, aggressiveness, hostility, and IPV than those without symptoms of PTSD (e.g., Jakupcak et al., 2007; Jordan et al., 1992; Taft et al., 2007). The association between symptoms of PTSD and IPV has also been found among civilian men (e.g., Jakupcak & Tull, 2005; Rosenbaum & Leisring, 2003) and college women (Kendra et al., 2012; Leisring, 2013). For example, Jakupak and Tull (2005) found that, among a sample of undergraduate males, individuals who reported symptoms of PTSD were more likely to endorse anger, hostility, and IPV perpetration than undergraduate males without symptoms of PTSD.

Some researchers have suggested that only certain symptoms of PTSD are associated with dating violence perpetration (McFall et al., 1999). While PTSD is most commonly conceptualized as a single construct, there is general agreement in the literature that PTSD is composed of three distinct symptom clusters: hyperarousal symptoms, avoidance symptoms, and re-experiencing symptoms (Bell & Ocutt, 2001). There is some evidence to suggest that hyperarousal symptoms are of particular importance in predicting the perpetration of aggressive

behavior (Taft et al., 2007). For example, Taft and colleagues (2007) found that, among male veterans, hyperarousal had a stronger relation to aggression than both avoidance and re-experiencing symptoms.

Information processing and anger regulation deficit models have been applied to explain the relation between trauma symptoms and dating violence. One theoretical model posits that, individuals with PTSD may be more likely to engage in "survival mode functioning" when encountered with a perceived threat (Chemtob et al., 1997). This functioning is characterized by a number of cognitive biases, including a threat-confirmation bias that results in faster recognition of threat and the need for less evidence of threat which leads to a faster reaction time. While survival mode functioning is adaptive during traumatic experiences, it becomes maladaptive when activated in inappropriate contexts. For example, playful grabbing between romantic partners may trigger traumatic memories, which activate survival mode functioning. This functioning can also be activated by reminders of the traumatic event and may trigger a positive feedback loop whereby the identification of threat increases physiological arousal and, in turn, validates the activation of the survival mode functioning. This physiological arousal stimulates anger and hostile attributions which precludes the reappraisal of threat and results in aggression (Bell & Ocutt, 2001). Additionally, trauma symptoms may lead to difficulty in identifying when "rough and tumble play" becomes abusive as it may lead to a heightened tolerance and desensitization of abuse, particularly when the trauma symptoms are the result of child maltreatment (Capaldi & Gorman-Smith, 2003).

Trauma Symptoms as a Risk Factor for Dating Violence Victimization. Comparatively less research has been conducted on the association between trauma symptoms and dating violence victimization. However, some studies suggested that trauma symptoms

predict re-victimization of IPV in adults (Krause et al., 2006; Perez & Johnson, 2008) and emerging adults (Jouriles et al., 2017). Researchers posit that individuals with trauma symptoms may be more likely to remain in abusive relationships due to low self-esteem or the belief that they are unworthy (Lewis & Fremouw, 2001). Trauma symptoms may also decrease an individual's ability to accurately perceive threat and respond adaptively. These symptoms may lead to the desensitization of violence and result in ignoring or downplaying relationship abuse (Jouriles et al., 2017). Further, trauma symptoms may interfere with help-seeking behavior, which may isolate the individual and increase the likelihood of dating violence victimization.

Some researchers have suggested that PTSD is negatively related to empowerment, or the ability to access resources to cope with stress (Johnson et al., 2005; Perez, Johnson, & Wright, 2012). Given that IPV, at its core, represents an unequal distribution of power (Cattaneo & Goodman, 2015), victims of IPV often report lower levels of empowerment (Samuels-Dennis et al., 2013). Thus, disempowerment may be driving the association between PTSD and IPV victimization. However, Dardis et al. (2018) found that, while PTSD symptoms predicted IPV victimization six months later among a sample of women veterans, PTSD was not associated with changes in empowerment over time. Additionally, this literature is limited in that it is primarily composed of female, adult samples and does not explore the effect that trauma symptoms have on dating victimization among males or adolescents. Thus, more research is needed to shed light on the association between trauma symptoms and TDV.

Developmental Traumatology. While the association between PTSD or trauma symptoms and IPV has been widely established, these studies have been primarily conducted with adult samples and refer to trauma symptoms and experiences that have occurred in adulthood. Given that childhood trauma may be even more detrimental than adulthood trauma

due to its impact on neurodevelopment, it is particularly important to explore the associations between child maltreatment, trauma symptoms, and TDV. Developmental traumatology (De Bellis et al., 1994) theorizes that child maltreatment and chronic family stressors lead to stress-induced changes in neurobiology. Specifically, they result in chronic mobilization of the stress-response system and may cause functional and structural brain changes (DeBellis, 2001). These neurobiological changes are likely to have long-term consequences and may increase the likelihood of psychological symptoms. Indeed, researchers have consistently indicated that maltreated youth report higher rates of trauma symptoms (Ozer et al., 2008). These trauma symptoms are likely to be activated in dating contexts given the physical proximity and potential for sexual activity that may serve as a reminder of the traumatic event(s) (Wekerle & Wolfe, 2003).

Protective Factors

Although theoretical and empirical evidence showed positive associations between (a) child maltreatment and trauma symptoms (see Norman et al., 2012 for a review) and (b) trauma symptoms and TDV (e.g., Kendra et al., 2012; Wolfe et al., 2004), little is known about protective factors that may moderate these relations. Thus, there is limited research exploring factors that may weaken positive relations: (a) between child maltreatment and trauma symptoms, and (b) between trauma symptoms and TDV victimization or perpetration. Despite the fact that research has consistently indicated that child maltreatment is associated with a wide range of mental and physical health problems throughout the lifespan, including trauma symptoms, some maltreated children do not experience negative consequences (Afifi & MacMillan, 2011). Similarly, while there is evidence to suggest that trauma symptoms are associated with TDV perpetration and victimization, some youth who endorse these symptoms

do not engage in TDV perpetration and/or are not victimized in the context of romantic relationships.

Most literature on child maltreatment and trauma symptoms tends to focus on risk factors for these constructs or the negative consequences of these outcomes (e.g., Anda et al., 2002; Felitti et al., 1998). Focusing on protective factors can help inform intervention efforts aimed at reducing negative outcomes following child maltreatment and may enhance our understanding of how to promote well-being among maltreated youth. Further, a better understanding of what factors weaken the relation between: (a) child maltreatment and trauma symptoms, and (b) trauma symptoms and TDV perpetration and victimization is critical to inform prevention efforts.

It is particularly important to identify protective factors and explore positive youth development among racial minority groups, as these groups are disproportionally affected by violence, poverty, and discrimination (Suárez-Orozco et al., 2011). Scholarship on racial minority youth has primarily focused on risks and negative behavioral trajectories which discounts positive pathways of youth development (e.g., McLoyd, 2006). Spencer's phenomenological variant of ecological systems theory (PVEST; Spencer, 2007) is one exception, as it adopts a cultural-ecological perspective that situates youth identity formation within context. This human development framework takes into account individual-context interactions and assumes that "all humans are vulnerable" (Spencer, 2007, pp. 701). Specifically, this framework posits that risk and protective factors are not deterministic and should, instead, be interpreted as supports or stressors. As such, risk and protective factors are bidirectionally associated and the balance, or lack thereof, of the two results in an individual's net vulnerability (Spencer, 2008). For marginalized youth, these risks may include racial and gender stereotypes

as well as larger historical processes such as discrimination (Swanson et al., 2002). Thus, this model, unlike other theories which primarily focus on risk factors, stresses the importance of exploring risk and protective factors simultaneously, particularly among marginalized youth.

Developmental assets framework. Starting in the 1990s, a number of literatures have pushed to shift the focus from a deficit-centered perspective to a strength-based approach; however, more effort is needed in this area within the TDV literature. Unlike the deficit-centered perspective, which seeks to identify risk factors, limitations, and barriers, the strength-based approach seeks to identify and understand the assets and resources that are important for positive youth development (Lerner et al., 2013). The Developmental Assets Framework is one prominent model that has been consistently utilized to explore positive youth development. This framework, based on developmental systems theories and socio-ecological models, identifies developmental assets or "building blocks" that enhance development and lead to decreased problem behaviors (Benson et al., 1998; Scales & Leffert, 2004). These assets are operationalized as a series of interconnected skills, values, and experiences and have been consistently associated with improved mental health and positive social, academic, and behavioral outcomes (Leffert et al., 1998; Witherspoon et al., 2009). The Developmental Assets Framework posits that there are 40 assets grouped into two categories: internal and external assets. Internal assets include personal skills, beliefs, and values such as positive values, commitment to learning, and positive identity (Search Institute, 2007). In turn, external assets represent an individual's ecologies and contexts and include the positive relationships, resources, and structures in an individual's life (Search Institute, 2007).

The Developmental Assets Framework assumes a cumulative approach whereby the number of reported developmental assets is directly related to academic, psychological, social,

and behavioral outcomes (Benson et al., 2011). Notably, research has demonstrated this relation among youths of different races, ethnicities, genders, and socioeconomic backgrounds (Filbert & Flynn, 2010; Leffert et al., 1998; Taylor et al., 2005). For example, one study exploring the effect of developmental assets on the relation between race/ethnicity and mental health outcomes among high school students found that the total number of developmental assets was associated with decreased mental health symptoms across all races and ethnicities (Garcia et al., 2019).

Specifically, research has demonstrated that developmental assets are associated with mental health outcomes among African American adolescents. For example, Rose and colleagues (2017) divided 1,170 African American adolescents into four groups, namely: “positive mental health,” “symptomatic but content,” "vulnerable,” and “troubled." Results indicated that youth in the "troubled" and "vulnerable" groups had lower levels of internal assets and higher level of psychopathology than youth in the ""symptomatic but content" and "positive mental health" groups. Similarly, Min et al. (2019) conducted latent class analyses among a primarily African American sample of adolescents and found four distinct profiles: high assets without mental health symptoms, low assets without mental health symptoms, adequate assets with thoughts and social problems, and low assets with elevated mental health symptoms. Youth in the "high assets without mental health symptoms" group were more likely to have higher parental monitoring and less family conflict than those in the other profiles.

Impact of assets on the relation between child maltreatment and trauma symptoms.

Although the relation between child maltreatment and trauma symptoms is widely established, not all maltreated youth are similarly affected by trauma symptoms. Some adolescents have internal and/or external assets that protect them from developing these symptoms. Research on the protective factors of trauma symptoms following childhood violence

has primarily focused on adult populations and has indicated that internal (e.g., ability to cope with stress) and external assets (e.g., social support) moderate the relation between adverse childhood experiences and mental health outcomes (e.g., Burke & Neimeyer, 2017; Sexton et al., 2015; Dobson & Pusch, 2017). However, the role of internal and external assets as protective factors for risk processes including child maltreatment and trauma remain largely unexplored in adolescence. Additionally, while there is evidence that specific assets (e.g., ability to cope with stress and family support) moderate the relation between child maltreatment and mental health outcomes, no study to date has explored how internal and external assets as composite factors moderate this relation. The following section reviews the empirical and theoretical evidence on the impact of specific internal and external assets on the development of trauma symptoms following child maltreatment.

Internal assets. Internal assets include personal skills, beliefs, and values such as commitment to learning, the ability to cope with stress, and positive identity (Search Institute, 2007). A number of empirical studies have demonstrated that resilience, conceptualized as an internal asset characterized by the ability to demonstrate adaptive psychological and physiological stress responses in the face of adversity (Feder et al., 2009), moderated relations between child maltreatment and mental health outcomes. This moderating effect has been shown among mothers with post-partum depression (Sexton et al., 2015), young adults leaving the child welfare system (Goldstein et al., 2013), adult participants recruited from primary care clinics (Poole et al., 2017), and college students (Campbell-Sills et al., 2006). Additionally, there has been some limited research exploring the moderating role of internal resilience on the association between adverse childhood experiences and mental health outcomes in adolescence (e.g., Clements-Nolle & Waddington, 2019; Ding et al., 2017). For example, Clements-Nolle and

Waddington (2019) found that adolescents in the juvenile justice system with higher internal resilience had less psychological distress following adverse childhood experiences. Similarly, Ding and collegues (2017) found that stress-coping ability moderated the association between childhood trauma and depressive symptoms among Chinese youth aged 9-17. However, to date, no study has explored the moderating effect of internal assets as a composite on the relation between child maltreatment and trauma symptoms in adolescence.

External assets. External assets include positive relationships, resources, and structures in an individual's life (Search Institute, 2007). Researchers theorize that social support protects individuals from developing posttraumatic symptoms and, as such, is crucial in enhancing one's ability to cope after a traumatic event (Bottomley et al., 2017). The stress buffering model posits that social support may increase an individuals' ability to cope with a traumatic event if the individual believes that others can provide them with the resources required to cope with the event (Evans et al., 2013). Specifically, it suggests that social support decreases the impact of a traumatic event by weakening the stress appraisal response (Cohen & Willis, 1985) and supporting adaptive cognitive and emotional processing (Williams & Joseph, 1999). Indeed, one meta-analysis demonstrated that lack of social support is the strongest predictor of posttraumatic symptoms among both civilian and veteran populations who experience psychological trauma (Brewin et al., 2000). There is some research exploring the effect of perceived social support following childhood maltreatment. For example, studies have indicated that among victims of sexual abuse, social support is associated with the absence of posttraumatic stress symptoms (Hebert et al., 2014) and reduced feelings of loss (Murthi & Espelage, 2005). However, the majority of this research was conducted with adult populations and, as such, little is known about

the protective effect of external assets on the relation between child maltreatment and trauma symptoms for adolescents.

Impact of assets on the relation between trauma symptoms and dating violence. While there is a vast amount of literature exploring risk factors for TDV, comparatively little is known about protective factors and effective prevention strategies for TDV, particularly TDV victimization (De la Rue et al., 2017; Espelage et al., 2019). Further, the limited existing research on positive development primarily explores promotive rather than protective factors of TDV. Promotive factors are defined as those that decrease the likelihood of a negative outcome (Fergus & Zimmerman, 2005), while protective factors are defined as those that moderate and attenuate the relations between risk and outcome (Zimmerman et al., 2013). Finally, while the extant literature has demonstrated a negative association between specific internal and external assets and TDV, no research to date has explored the association between internal and external assets as composite factors and TDV.

One review exploring the risk and promotive factors for TDV perpetration identified a total of six promotive factors: four individual level factors and two relationship level factors. Specifically, high empathy (McCloskey & Litcher, 2003), verbal IQ (Cleveland, Herrera, & Stuewig, 2003), grade-point average (GPA; Cleveland et al., 2003), and cognitive dissonance about the perpetration of TDV (i.e., perpetrator's realization that TDV was wrong; Schumacher & Slep, 2004) were identified as individual promotive factors. A positive relationship with one's mother (Cleveland et al., 2003) and school attachment (Cleveland et al., 2003), in turn, were identified as relationship level or external promotive factors. However, given the limited research in this area, each promotive factor was supported by only one study. The following section explores the theoretical and empirical evidence that suggest internal and external assets will act

as protective factors on relations between trauma symptoms and TDV perpetration and victimization.

Internal assets. While no study to date has explored the association between internal assets, as defined by the Developmental Assets Profile, and TDV, there is theoretical and empirical evidence suggesting that specific internal assets are negative related to TDV. For example, empathy, or the ability to understand the feelings and experiences of others, has been identified as one promotive factor related to lower frequencies of peer aggression (LeSure-Lester, 2000), physical TDV (McCloskey & Litcher, 2003), and sexual TDV perpetration (Espelage et al., 2019). Researchers have theorized that those who are able to identify and connect with the feelings of others would be less likely to intentionally cause people harm (Espelage et al., 2019). Indeed, McCloskey and Litcher (2003) found that among primarily European American (53.7%) low-income adolescents with histories of exposure to family violence, empathy was negatively associated to dating and peer aggression over time. Similarly, Espelage et al. (2019) found that, among a primarily African American sample (46.9%) of 1,688 low-income students, empathy was a promotive factor, associated with lower frequencies of sexual TDV in males.

Given that poor school achievement, suspensions, and expulsions have been identified as risk factors for TDV in adolescence (Bergman, 1992; Reuterman & Burcky, 1989), Cleveland et al. (2003) theorized that school success would act as a protective factor. Indeed, their findings indicated that, among 1,206, primarily European American, high school students (*M*age = 17), higher GPA was predictive of lower male-to-female TDV for both male and female participants. Additionally, higher verbal IQ was predictive of lower male-to-female TDV for males. Other identified promotive factors of dating violence include emotion regulation in college students,

(Caiozzo, Houston, & Grych, 2016), self-regulation in high school students, (Livingston et al., 2018) and prosocial beliefs in early adolescence (Foshee et al., 2015).

External assets. Similarly, while no study to date has explored the association between external assets as a composite measure and TDV, there is theoretical and empirical evidence suggesting that specific external assets are negatively related to TDV. Attachment theory emphasizes the importance of parent-adolescent relationships. As such, secure attachment has been associated with decreased engagement in risky behavior and better coping skills in adolescence (Copper et al., 1998; Howard & Carolina, 2004). Parental connectedness and high levels of parent communication have been identified as promotive factors for TDV (Kast et al., 2016). Specifically, Kast et al. (2016) found that, in multivariate models, perceived parental caring was the most important promotive factor against physical and sexual dating violence victimization among a sample of Latinx adolescents. Their findings also indicated that higher levels of parental communication were associated with lower levels of dating violence victimization among Latina and Latino adolescents. Similarly, Cleveland et al. (2003) found that a positive relationship with one's mother was a promotive factor against male-to-female physical abuse in females. Parental monitoring has also been identified as a promotive factor that decreases the likelihood of TDV perpetration (Foshee et al., 2015) and victimization (Leadbeater et al., 2008).

Research has indicated that perceived peer social support may act as a promotive factor for TDV. For example, among a sample of 7th, 9th, and 11th grade youth, peer social support was related to lower frequencies of TDV perpetration and victimization over and above the effect of family support (Richards & Branch, 2012). Finally, there has been some support for the promotive effect of school attachment and support on TDV. For example, school support was

identified as a promotive factor related to lower frequencies of physical and verbal TDV victimization among a large, racially diverse sample of high school youth (Parker et al., 2016). Additionally, school attachment was identified as a promotive factor associated with lower rates of male-to-female TDV among female adolescents (Cleveland et al., 2003).

Overall, there is both theoretical and empirical evidence demonstrating the protective effect of internal and external assets on rates of TDV perpetration and victimization. However, no study to date has explored the degree to which these protective factors, taken as a whole, may mitigate the relation between trauma symptoms and TDV perpetration and victimization. Given that trauma symptoms are a well-established risk factor for dating violence (see Bell & Orcutt, 2001 for a review), identifying protective process associated with TDV traumatization is critical to inform prevention efforts.

Conclusion

In conclusion, this literature review highlights the relation between child maltreatment and TDV perpetration and victimization. Specifically, it draws from social learning theory and attachment theory and perspectives in order to better understand the nature of this relation. Empirical evidence offers support for the associations between child maltreatment and higher frequencies of TDV perpetration and victimization both concurrently (e.g., Duke et al., 2010; Malik et al., 1997; 2010; Miller et al., 2011) and over time (e.g., Maas et al., 2010; Tyler et al., 2011). Trauma symptoms were proposed as one potential factor that mediates this relation as research has consistently indicated that child maltreatment predicts trauma symptoms (e.g., Ozer et al., 2008) and that trauma symptoms are a risk factor for IPV perpetration (see Bell & Orcutt, 2001 for a review). However, the literature exploring indirect relations between child maltreatment and TDV via trauma symptoms is sparse, particularly during adolescence, a

developmental stage characterized by heightened stressors. Further, the child maltreatment literature often takes a deficit-based perspective and does not focus on individual strengths or assets that may mitigate future negative outcomes. Overall, there is a need for research exploring: (a) the indirect relation between child maltreatment and TDV victimization and perpetration via trauma symptoms in adolescence and (b) the moderating effect of internal and external assets on the relations between child maltreatment and trauma symptoms and between trauma symptoms and TDV perpetration and victimization in adolescence.

The Present Study

The identification of risk and protective processes for TDV is important given its long-term detrimental outcomes, including psychosocial and academic difficulties (Connolly & Josephson, 2007; Holmes & Sher, 2013). While child maltreatment has been consistently identified as a risk factor for TDV perpetration and victimization in adolescence, several gaps in the literature were identified. First, little is known about the potential underlying mechanisms that explain associations between child maltreatment and TDV (Orcutt et al., 2003). Research assessing risk factors related to IPV outcomes in adulthood have examined trauma symptoms as a potential mediator for these relations (e.g., Bell & Orcutt, 2001). However, the majority of this research has focused on male veterans and, as such, the indirect relation between child maltreatment and TDV via trauma symptoms is not well understood (see Wolfe et al., 2004 for an exception). Given the effect of trauma symptoms on the developing brain, the prevalence of TDV, and the differences in these relations for adults exposed to IPV as compared to adolescents exposed to TDV, it is important to examine these relations in adolescence. Second, this research has primarily focused on dating violence perpetration and has rarely explored associations between trauma symptoms and dating violence victimization. Third, the majority of this

literature takes a deficit-centered approach and ignores the role of protective factors for victims of child maltreatment, particularly among African American youth. A better understanding of protective factors can both inform intervention efforts and may enhance our understanding of how to promote well-being among maltreated youth. Fourth, it is particularly important to explore these association among African American youth living in high-burden communities who are disproportionally affected by poverty, violence exposure, and discrimination experiences (Suárez-Orozco et al., 2011).

The present study adds to the literature by exploring: (a) the indirect effect of child maltreatment on TDV victimization and perpetration via trauma symptoms in adolescence, and (b) the moderating effects of internal and external assets on the relations between child maltreatment and trauma symptoms and trauma symptoms and TDV victimization and perpetration. This study also contributes to the literature through the inclusion of an urban sample of African American youth living in high-burden communities.

For the current study, ten models were analyzed. First, two models explored whether trauma symptoms mediated the relations between child maltreatment and TDV perpetration and victimization, respectively. While studies have found high rates of reciprocity in dating violence in adolescence, research in this field has typically explored the perpetration and victimization of dating violence separately (see Bowen & Walker, 2015 for a review). One reason for this distinction is that research has consistently identified different correlates and predictors of TDV perpetration and victimization. For example, one meta-analysis found that while having deviant peers was the risk factor most strongly related to TDV perpetration, witnessing parental violence was the risk factor most strongly related to TDV victimization (Park & Kim, 2018).

If mediation is found for either of the first two models, subsequent mediation models will be conducted to test the moderating effects of internal and external assets on the relations between: (a) child maltreatment and trauma symptoms and (b) trauma symptoms and TDV perpetration and victimization.

For models where no mediation is found, the moderation analysis will be conducted separately. Specifically, the following moderating pathways will be tested: (a) the moderating effect of internal assets on the relation between child maltreatment and trauma symptoms, (b) the moderating effect of internal assets on the relation between trauma symptoms and TDV perpetration, (c) the moderating effect of internal assets on the relation between trauma symptoms and TDV victimization, (d) the moderating effect of external assets on the relation between child maltreatment and trauma symptoms, (e) the moderating effect of external assets on the relation between trauma symptoms and TDV perpetration, and (f) the moderating effect of external assets on the relation between trauma symptoms and TDV victimization.

Although these analyses would be tested separately, the hypothesized moderating effects that are described below remained the same.

Study Hypotheses

The ten models tested and hypotheses for each are detailed in this section. The first two models tested the concurrent relations between child maltreatment and TDV perpetration and victimization, respectively, via trauma symptoms among dating adolescents while controlling for sex and age.

Hypotheses for Models 1 and 2 were as follows:

H1: Child maltreatment will be associated with TDV perpetration via trauma symptoms, controlling for sex and age.

H2: Child maltreatment will be associated with TDV victimization via trauma symptoms, controlling for sex and age.

The next eight models tested the moderating effect of internal and external assets on the concurrent relations between (a) child maltreatment and trauma symptoms and (b) trauma symptoms and TDV perpetration and victimization, respectively, while controlling for sex and age.

Hypotheses for Models 3 and 4 are as follows:

H3: The relation between child maltreatment and trauma symptoms will vary by levels of internal assets, whereby the relation between child maltreatment and higher rates of trauma symptoms will be weaker for youth who report higher levels of internal assets, controlling for sex and age.

H4: The relation between trauma symptoms on TDV perpetration will vary across levels of internal assets, whereby the relation between trauma symptoms and higher rates of TDV perpetration will be weaker for youth who report more internal assets, controlling for sex and age.

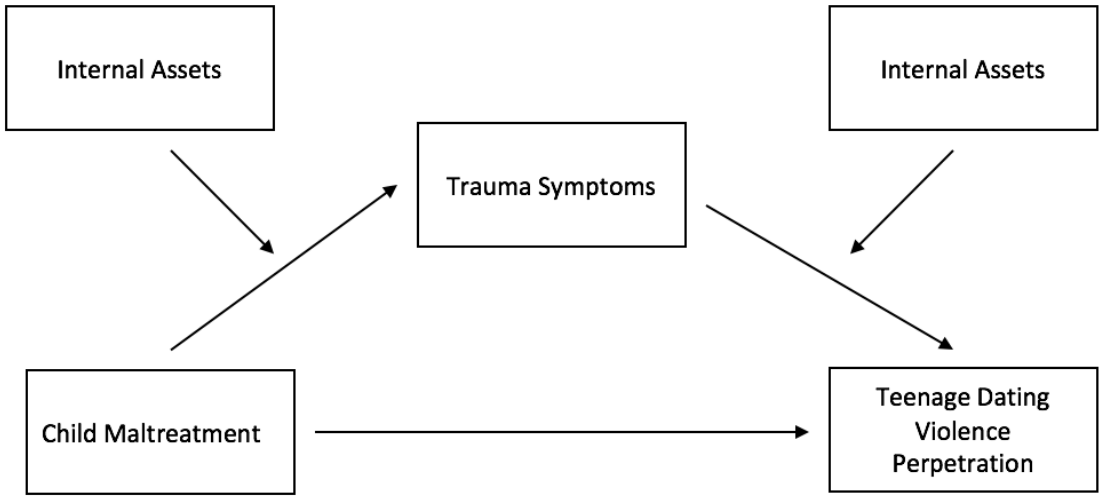

Figure 1. Hypothesized moderated mediation model whereby internal assets is expected to moderate the relations between (1) child maltreatment and trauma symptoms and (2) trauma symptoms and TDV perpetration, and trauma symptoms is expected to mediate the relation between child maltreatment and TDV perpetration, controlling for age and sex.

Hypotheses for Models 5 and 6 are as follows:

H5: The relation between child maltreatment and trauma symptoms will vary across levels of internal assets, whereby the positive relation between child maltreatment and trauma symptoms will be weaker for youth who report more internal assets, controlling for sex and age.

H6: The relation between trauma symptoms and TDV victimization will vary across levels of internal assets, whereby the positive relation between trauma symptoms and TDV victimization will be weaker for youth who report more internal assets, controlling for sex and age.

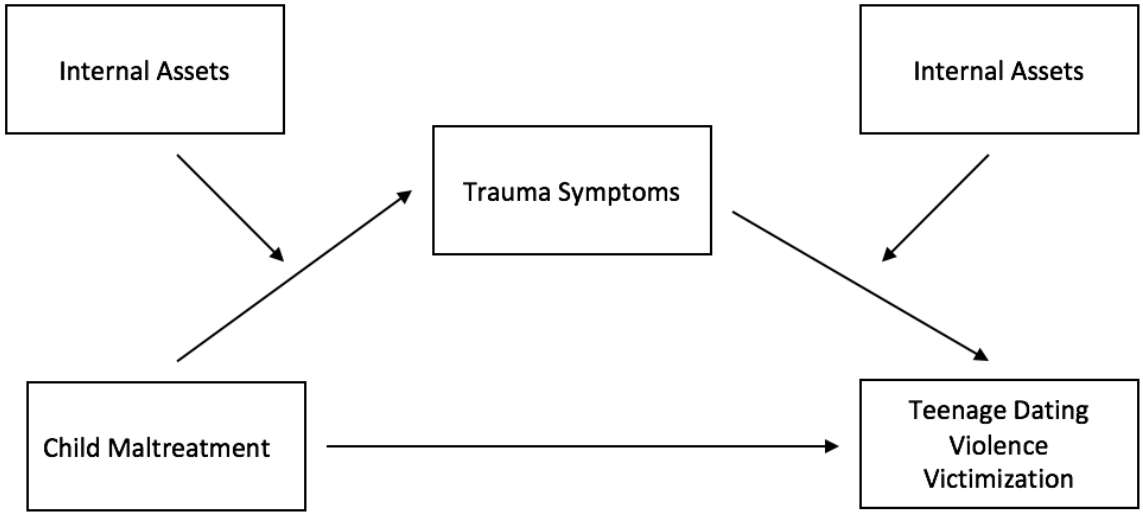

Figure 2. Hypothesized moderated mediation model whereby internal assets is expected to moderate the relations between (1) child maltreatment and trauma symptoms and (2) trauma symptoms and TDV victimization, and trauma symptoms is expected to mediate the relation between child maltreatment and TDV victimization, controlling for age and sex.

Hypotheses for Models 7 and 8 are as follows:

H7: The relation between child maltreatment and trauma symptoms will vary across levels of external assets, whereby the positive relation between child maltreatment and trauma symptoms will be weaker for youth who report more external assets, controlling for sex and age.

H8: The relation between trauma symptoms and TDV perpetration will vary across levels of external assets, whereby the positive relation between trauma symptoms and TDV perpetration will be weaker for youth who report more external assets, controlling for sex and age.

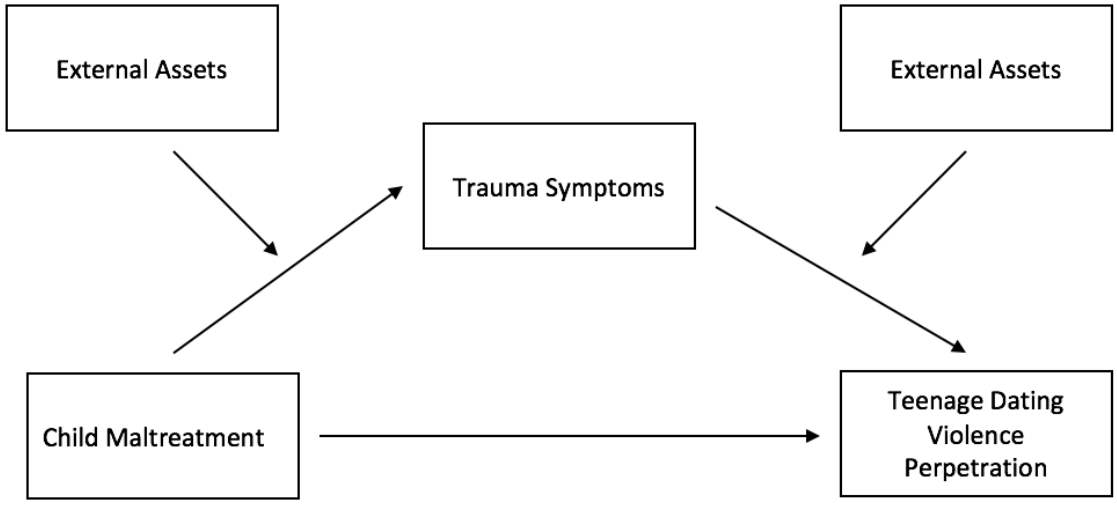

Figure 3. Hypothesized moderated mediation model whereby external assets is expected to moderate the relations between (1) child maltreatment and trauma symptoms and (2) trauma symptoms and TDV perpetration, and trauma symptoms is expected to mediate the relation between child maltreatment and TDV perpetration, controlling for age and sex.

Hypotheses for Models 9 and 10 are as follows:

H9: The relation between child maltreatment and trauma symptoms will vary across levels of external assets, whereby the positive relation between child maltreatment and trauma symptoms will be weaker for youth who report more external assets, controlling for sex and age.

H10: The relation between trauma symptoms on TDV victimization will vary across levels of external assets, whereby the positive relation between trauma symptoms and TDV victimization will be weaker for youth who report more external assets, controlling for sex and age.

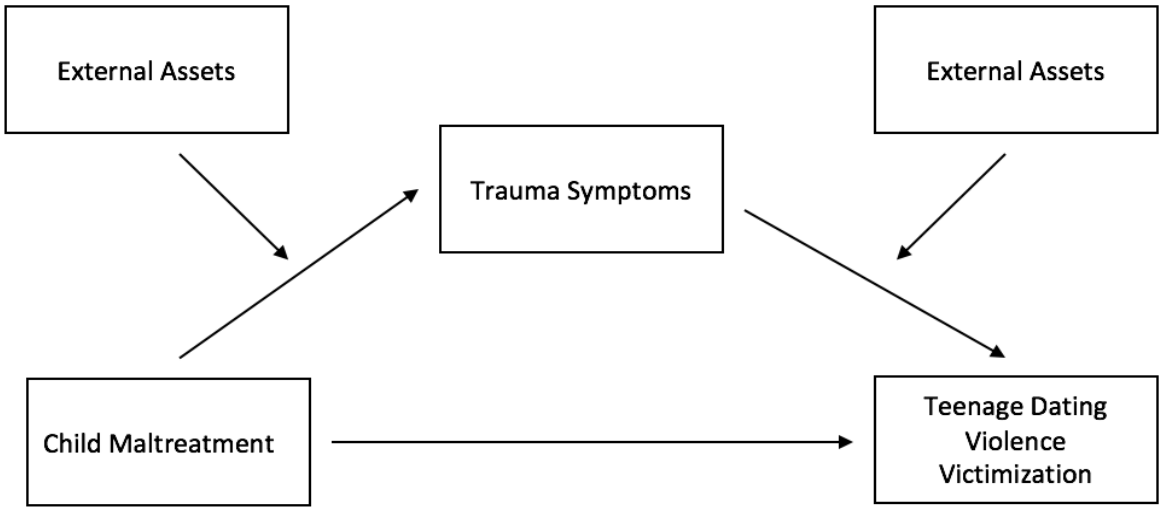

Figure 4. Hypothesized moderated mediation model whereby external assets is expected to moderate the relations between (1) child maltreatment and trauma symptoms and (2) trauma symptoms and TDV perpetration, and trauma symptoms is expected to mediate the relation between child maltreatment and TDV victimization, controlling for age and sex.

Methods

Setting and Participants

The present study used baseline data collected from a larger project evaluating a community-level intervention for youth violence prevention. Data were collected from 267 youth ages 12 to 17 (M_{age} = 14.37. *SD* = 1.71) who resided in three high-burden communities (the majority of youth lived in four public housing developments) in a midsized city in the Southeastern United States. Specifically, in 2014, the majority of the residents in these communities had an income at or below the Federal Poverty Level (67%) and over half (52%) were unemployed. Additionally, in 2013, the number of youth violence incidents reported in

these communities were more than ten times the average rate for the city (Masho & Bishop, 2014). Because the present study focused on youth who were in dating relationships, a subset of youth (n = 147) were selected who reported that they had a boyfriend/girlfriend in the past three months. Participants who did not report that they had a boyfriend/girlfriend in the past three months (n = 120) were excluded from the study. Four participants were excluded from the final sample as they had more than 25% of missing data on study variables, and eight participants were excluded because they reported a race other than African American. The final sample for the current study included 134 African American youth ages 12 to 17 (M = 14.32, SD = 1.71) who reported that they had a boyfriend/girlfriend in the past three months (57% female). Participant characteristics can be found in Table 1. A power analysis was conducted using G*Power software (Faul et al., 2009) to determine the necessary sample size for the present study. Assuming a small effect size (d = 0.15), 77 participants would be sufficient to detect an effect (power = 0.8, alpha $\leq$ 0.05), assuming a medium effect size (d = 0.5), 27 participants would be sufficient and assuming a large effect size (d = 0.8), 19 participants would be sufficient. Given that, while the current analyses are exploratory, there was sufficient evidence to assume a relation between the study variables, a medium effect size will be assumed.

Table 1. Socio-demographic characteristics of participants (N = 134)

	N	%
Gender		
Male	58	43.3
Female	76	56.7
Age		
12	25	18.7
13	23	17.2
14	23	17.2
15	23	17.2
16	19	14.2
17	21	15.7
Living in Public Housing Development		

Yes	117	89.4
No	14	10.4
Caregiver Marital Status		
Single	76	56.7
Married	23	17.2
In a relationship and living together	8	6
In a relationship and not living	5	3.7
together	7	5.2
Legally Separated	9	6.7
Divorced	3	2.2
Widowed	1	0.7
Other		
Caregiver Employment Status		
Employed full-time	36	26.9
Employed part-time	18	13.4
Homemaker or caregiver	10	7.5
Unemployed	38	28.4
Unable to work	18	13.4
Student and not employed	2	1.5
Student and employed	1	0.7
Retired	2	1.5
Total Annual Income Before Taxes		
Less than $10,000	63	47
$10,000 to 14,999	23	17.2
$15,000 to 19,999	9	6.7
$20,000 to $24,999	3	2.2
$25,000 and above	8	5.9
Caregiver Education		
Less than high school	6	4.5
Some high school but did not graduate	43	32.1
High school graduate/GED	48	35.8
Some college	15	11.2
Graduated from a two-year college	17	12.7
College degree	1	0.7
Some graduate education	1	0.7
Graduate degree	2	1.5

Procedures

All procedures for the current study were approved by a University Institutional Review Board. We used neighborhood canvasing to recruit eligible families (i.e., those with a youth

between the ages of 12-17) and obtained written parental permission and adolescent assent before survey data was collected. Consistent with other community-based recruitment rates (e.g., Luthar & Goldstein, 2004; Kliewer et al., 2018), 67% of eligible families opted to participate in the survey. Participants completed the surveys electronically using the Research Administrative Data Capture (REDCap) data collection interface. Study staff consented participants, presented them with a laptop to complete the survey, and were present during the assessment to answer questions. Students listened to the survey using headphones and recorded their answers directly in the computer. The survey took, on average, one hour (M = 58 minutes) to complete. Each survey was administered in participants' homes or in local community organizations (e.g., service buildings, libraries, and churches) based on the parent and youth preference. All participants received $25 for their time and effort in completing the survey.

Measures

Child Maltreatment. Child maltreatment was assessed using the six items from the Adverse Childhood Experiences (ACES) questionnaire (Felliti et al., 1998) that captured personal traumatic experiences. Previous findings have indicated good validity and reliability of the ACEs questionnaire (Anda et al., 2010). Each question referred to one type of child maltreatment and responses were binary (i.e., "yes" or "no"). Specifically, youth were asked whether or not they have ever experienced physical abuse (i.e., "Did a parent or other adult in the household often...Push, grab, slap, or throw something at you?"), sexual abuse (i.e., "Did an adult or person at least 5 years older than you ever...Touch or fondle you or have you touch their body in a sexual way?"), emotional abuse (i.e., "Did a parent or other adult in the household often... Swear at you, insult you, put you down, or humiliate you?"), emotional neglect (i.e., "Did you often feel that ...No one in your family loved you or thought you were important or

special?"), physical neglect (i.e., "Did you often feel that ...You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?") and exposure to IPV (i.e., "Was your mother or stepmother: Often pushed, grabbed, slapped, or had something thrown at her?"). The total scores were summed and ranged from 0 to 6. Given the low base rates for the child maltreatment items, each item was recoded: 0 = *No maltreatment* and 1 = *One or more types of maltreatment*. The Cronbach alpha coefficient for this measure was .62. Although the ACEs are correlated, some may occur in the absence of others, contributing to a lower alpha coefficient. See Appendix A for the full measure.

Trauma Symptoms. Trauma symptoms were assessed using the English, self-report version of the Child Report of Posttraumatic Symptoms (CROPS; Greenwald & Rubin, 1999)). This 26-item measure was developed using diagnostic criteria from the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition* (DSM IV), as well as results from a meta-analysis of child trauma literature (Fletcher, 1993). This scale assesses a range of posttraumatic symptoms including psychological arousal (e.g., "I'm on the lookout for bad things that may happen"), intrusive thoughts/memories (e.g., "I think about bad things that have happened"), and avoidance (e.g., "I avoid reminders of bad things that have happened). On the CROPS, youth were asked to indicate the extent to which they have been experiencing each symptom over the last week using the following 3-point response options: 0 = *None,* 1 = *Some,* and 3 = *Lots*. Responses are summed and range from 0 to 51, such that a higher score reflects a higher level of posttraumatic symptoms. Scores of 19 or higher indicate clinical concern. Studies have consistently indicated the validity and reliability of the CROPS across different clinical and community settings (e.g., Greenwald et al., 2002) Additionally, studies have indicated good concurrent validity between the CROPS and the Lifetime Incidents of Traumatic Events Scale

(Greenwald & Rubin, 1999) and the Trauma Symptom Checklist for Children (Brier, 1996). The Cronbach alpha coefficient for this scale was .90. See Appendix B for the full measure.

Dating Violence. Dating violence perpetration and victimization were assessed using a measure that was adapted from the Safe Dates Aggression Scale (Foshee et al., 1996). This scale included six acts of physical aggression (e.g., scratching, kicking) and four acts of psychological aggression (e.g., damaging belongings, saying things to make their partner jealous). High correlations (r =.96) and multicollinearity have been found between subtypes of TDV (i.e., physical and psychological) during early to mid-adolescence, and previous factor analyses have supported composite measures (i.e., combining physical and psychological forms of TDV) for both TDV perpetration and victimization among adolescents (Goncy et al., 2015). Thus, a composite measure was used to assess TDV perpetration and victimization. Participants were first asked whether or not they have had a boyfriend or girlfriend in the last three months. If participants responded "*yes*", they were then asked whether or not "a boyfriend/girlfriend has done the following things to you" in the last three months (victimization; e.g., "Scratched you"), and whether they have "done any of the following things to a boyfriend/girlfriend" in the last three months (e.g., "Pushed or shoved him or her"). Participants were asked to rate items on a four-point scale: 1 = *Never,* 2 = *1-3 times,* 3 = *4-9 times,* and 4 = *10 or more times*. Given the low base rates for the dating violence items, each item was recoded: 0 = *Never* and 1 = *One or more times*. The scale score was created by summing the items. The Cronbach alpha coefficients for TDV victimization and TDV perpetration were .83 and .86 respectively. See Appendix C for the full measure.

Internal and External Youth Assets. Internal and external youth assets were assessed using the Developmental Assets Profile (Search Institute, 2010), a self-report measure that

assessed individual strengths and qualities believed to promote positive development and resilience in youth aged 11 to 18. Internal assets included Commitment to Learning (e.g., "I care about school"), Positive Values (e.g., "I think it is important to help other people"), Social Competencies (e.g., "I express my feelings in proper ways"), and Positive Identity (e.g., "I feel good about myself"). External assets, in turn, included Support (e.g., "I have friends who set good examples for me"), Empowerment (e.g., "I am given useful rules and responsibilities"), Boundaries and Expectations (e.g., "I have a school that gives students clear rules"), and Constructive Use of Time (e.g., "I am involved in a sport, club, or other group"). This 58-item measure asked participants to think about how items describe themselves now or within the past three months and to rate them on a four-point-scale: 1 = *Not at All or Rarely,* 2 = *Somewhat or Sometimes,* 3 = *Very or Often,* and 4 = *Extremely or Almost Always*. The Cronbach alpha coefficients for internal assets and external assets were .94 and .92 respectively.

Demographics. Demographic questions were included to assess age, race/ethnicity, and sex. Participants were provided the following response options for race/ethnicity: American Indian/Alaskan Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, Hispanic/Latina/o, and Decline to Answer.

Data Analysis Plan

Data were cleaned using IBM SPSS Version 26 software (IBM Corp, 2018). For each study variable, the range of responses for each item was examined to ensure that they fell within the possible range of responses. The skewness and kurtosis of each variable was examined. No study variable had levels of skewness and kurtosis that exceed the recommended cutoff values of greater than 2 or less than -2 (George, 2010). Descriptive statistics including means, standard

deviations, and correlations among variables were run. Listwise deletion in SPSS was used and resulted in the deletion of data from four participants with over 25% missing data.

Separate bootstrapping analyses with bias-corrected 95% confidence intervals were conducted to examine the following indirect effects: a) child maltreatment on TDV perpetration via trauma symptoms and b) child maltreatment on TDV victimization via trauma symptoms using PROCESS (Hayes, 2013) Model 4 with 5000 bootstrapped samples. Confidence intervals that did not contain zero indicated a significant effect. Mediation models were used whereby child maltreatment was modeled to affect TDV through trauma symptoms. Covariates included age and sex. Given that significant mediation was found, subsequent mediation models were conducted to test the moderating effects of both internal and external assets on the relations between (a) child maltreatment and trauma symptoms, and (b) trauma symptoms and TDV perpetration and victimization. PROCESS Models 7 and 14 were used, whereby child maltreatment was the predictor (X), TDV perpetration and victimization were the dependent variables (Y), trauma symptoms was the mediator (M), and internal and external assets were the moderators (W and Z) of the relations between (a) child maltreatment and trauma symptoms and (b) trauma symptoms and TDV, respectively. Variables were mean centered prior to analyses.

Results

Descriptive Statistics

Descriptive statistics, including means, standard deviations, and correlations among study variables, are reported in Table 2. As expected, child maltreatment was positively associated with trauma symptoms ($r = .48$, $p < .001$), TDV victimization ($r = .26$, $p = .003$), and dating violence perpetration ($r = .31$, $p < .001$). Child maltreatment was also negatively associated with external assets ($r = -.26$, $p = .003$). Trauma symptoms were positively associated with TDV

victimization (r = .23, p = .007) and perpetration (r = .31, p < .001). Finally, TDV victimization was positively associated with dating violence perpetration (r = .72, p <.001) and internal assets were positively associated with external assets (r = .84, p < .001).

Regression analyses between study variables were also run and are reported in Tables 3 and 4. Child maltreatment was positively associated with TDV victimization (β = 20, p = .04) and perpetration (β = 24, p = .02), and trauma symptoms were also positively associated with TDV victimization (β = .22, p = .02) and perpetration (β = .22, p = .02). Sex, however, was positively associated with TDV victimization (β = .05, p < .001), and indicated stronger associations for girls than boys.

Table 2

Means, Standard Deviations, and Correlations for Child Maltreatment, Trauma Symptoms, Dating Violence, and Youth Assets.

	1	2	3	4	5	6
1. Child Maltreatment	----					
2. Trauma Symptoms	.48***	----				
3. Dating Violence Victimization	.26*	.23**	----			
4. Dating Violence Perpetration	.31**	.31***	.72***	----		
5. Internal Assets	-.10	.03	-.09	-.06	----	
6. External Assets	-.26**	-.01	-.04	-.06	.84***	----
M	.40	23.14	2.19	1.95	21.29	20.38
SD	.49	9.78	2.53	2.62	5.51	5.37

* p < .05. ** p < .01. *** p < .001

Table 3

Regression Analysis Summary for Study Variables on TDV Victimization

Variable	*B*	95% CI	β	*t*	*p*
Child Maltreatment	1.06	[.06, 2.06]	.20	2.09	.039
Trauma Symptoms	.06	[.01, .11]	.22	2.37	.019
Internal Assets	-.07	[-.21, .07]	.15	-1.01	.32
External Assets	.07	[-.08, .22]	-.15	.96	.34
Age	.07	[-.17, .30]	.05	.57	.57
Sex	-1.9	[-2.75, -1.08]	-.38	-4.54	.000

Note. CI = Confidence interval for *B.*

Table 4

Regression Analysis Summary for Study Variables on TDV Perpetration

Variable	*B*	95% CI	β	*t*	*p*
Child Maltreatment	1.31	[.22, 2.40]	.24	2.37	.019
Trauma Symptoms	.06	[.01, .11]	.22	2.19	.03
Internal Assets	-.07	[-.22, .08]	-.15	-.91	.37
External Assets	.06	[-.10, .22]	.13	.79	.43
Age	.12	[-.14, .37]	.08	.91	.36
Sex	-.62	[-1.53, .29]	-.12	-1.35	.18

Note. CI = Confidence interval for *B.*

Relations between Child Maltreatment, Trauma Symptoms, and Dating Violence

Separate bootstrapping analyses with bias-corrected 95% confidence intervals were conducted to examine the indirect effects between: a) child maltreatment on TDV victimization via trauma symptoms and b) child maltreatment on TDV perpetration via trauma symptoms using PROCESS (Hayes, 2013) Model 4 with 5000 bootstrapped samples. Confidence intervals that did not contain zero indicated a significant effect. Covariates included age and sex.

Dating violence victimization. In the first mediation model, child maltreatment was modeled to be related to dating violence victimization through trauma symptoms. Specifically, child maltreatment was included as the independent variable, trauma symptoms as the mediator, and TDV victimization as the dependent variable. The overall model was significant $F(4, 126) = 9.50$ $p < .001$ and accounted for 23.16% of the variance in TDV victimization (see Figure 1). The bootstrapping analyses revealed that the direct effect between child maltreatment and TDV victimization, β =. 90 (*SE*= .47) 95% CI (-.0223 – 1.8271), was not significant. In contrast, the indirect effect for child maltreatment and dating violence victimization via trauma symptoms, β = .58 (*SE*= .28) 95% CI (.0665 – 1.1548), was significant.

Dating violence perpetration. In the second mediation model, child maltreatment was modeled to be related to dating violence perpetration through trauma symptoms. Specifically, child maltreatment was included as the independent variable, trauma symptoms as the mediator, and TDV perpetration as the dependent variable. The overall model was significant $F(4, 126) = 5.62$ $p < .001$ and accounted for 15.13% of the variance in dating violence perpetration (see Figure 2). The bootstrapping analyses revealed that the direct effect between child maltreatment and dating violence perpetration, β = 1.17 (*SE*= .51) 95% CI (.1683 – 2.1780), was significant. Similarly, the indirect effect for child maltreatment and dating violence victimization via trauma symptoms, β =.58 (*SE*= .28) 95% CI (.0361 – 1.1449), was significant.

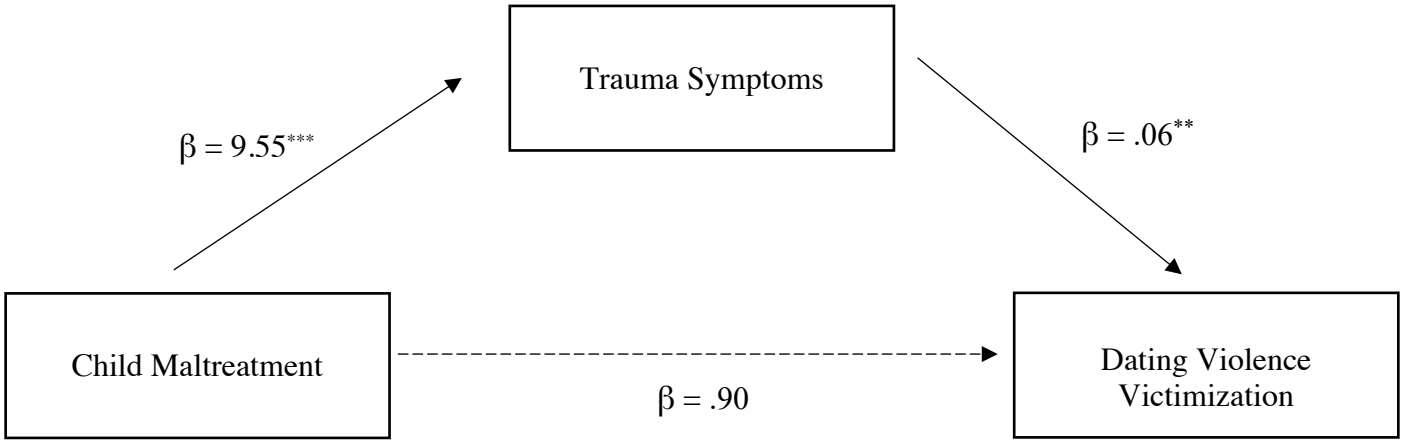

Figure 5. Indirect effect of child maltreatment on TDV victimization via trauma symptoms among African American adolescents. Effects of covariates (e.g., age and sex) on dependent variables and direct effects of child maltreatment were included in the model but are not reported in the figure to reduce complexity. *n = 131*
$^{*}p < .05, ^{**}p < .01, p < .001$

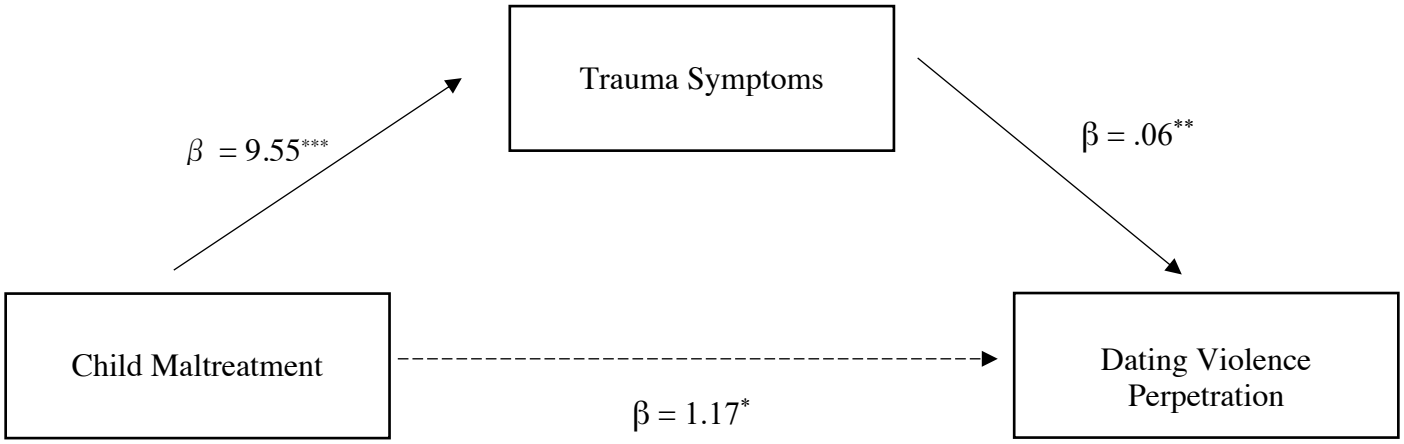

Figure 6. Indirect effect of child maltreatment on TDV perpetration via trauma symptoms among African American adolescents. Effects of covariates (e.g., age and sex) on dependent variables and direct effects of child maltreatment were included in the model but are not reported in the figure to reduce complexity. *N = 131*
$^{*}p < .05, ^{**}p < .01, p < .001$

Effect of Youth Assets in the Relations between Child Maltreatment, Trauma Symptoms, and Dating Violence

In order to determine whether the mediational effects found differed as a function of participants' levels of internal and external assets (a moderated mediation), four conditional PROCESS models were created to determine if the initial mediation models were moderated by internal and external assets (Figure 2).

Dating violence victimization. Four moderated mediation models were conducted to assess the moderating effect of internal and external assets on the relations between: (a) child maltreatment and trauma symptoms, and (b) trauma symptoms and TDV victimization. The first model assessed the moderating effect of internal assets on the relation between child maltreatment and trauma symptoms. The overall model was significant, $F(5, 125) = 10.03$, $p < .0001$, $R^2 = .29$. The direct effect of child maltreatment on trauma symptoms was significant, β = 9.58 (*SE*= 1.51) 95% CI (6.5913 – 12.5772), but the effect of internal assets on trauma symptoms was not, β =.10 (*SE*= .14) 95% CI (-.1725 – .3646). The interaction between child maltreatment × internal assets was not statistically significant, β = -.29 (*SE*= .28) 95% CI (-.8436 – .2684), indicating that the direct effects from child maltreatment to trauma symptoms was not moderated by internal assets. This pattern of findings is not reflective of a moderated mediation, such that from a theoretical standpoint, internal assets did not moderate the relation between child maltreatment and trauma symptoms.

The second model assessed the moderating effect of internal assets on the relation between trauma symptoms and TDV victimization. The overall model was significant, $F(6, 124) = 6.45$, $p < .0001$, $R^2 = .24$. The direct effect of child maltreatment and trauma symptoms on TDV victimization were significant, β = .98 (*SE*= .48) 95% CI (.0389 – 1.9225) and β = .06 (*SE*=

.02) 95% CI (.0107 – .1064), respectively. However, the effect of internal assets on TDV victimization was not significant, β =-.00 (*SE*= .04) 95% CI (-.787 – .0688). The interaction between trauma symptoms × internal assets was not statistically significant, β =.01 (*SE*= .00) 95% CI (-.0024 – .0125), indicating that the direct effects from trauma symptoms to dating violence victimization was not moderated by internal assets. This pattern of findings is not reflective of a moderated mediation, such that from a theoretical standpoint, internal assets did not moderate the relation between trauma symptoms and dating violence victimization.

The third model assessed the moderating effect of external assets on the relation between child maltreatment and trauma symptoms. The overall model was significant, $F(5, 125) = 10.78$, $p < .0001$, $R^2 = .30$. The direct effect of child maltreatment on trauma symptoms was significant, β = 9.8895 (*SE* = 1.55) 95% CI (6.8202 – 12.9589), but the effect of external assets on trauma symptoms was not, β = .20 (*SE*= .14) 95% CI (-.0765 – .4788). The interaction between child maltreatment × external assets was not statistically significant, β =-.42 (*SE*= .29) 95% CI (-.9955 – .1579), indicating that the direct effects from child maltreatment to trauma symptoms was not moderated by external assets. This pattern of findings is not reflective of a moderated mediation, such that from a theoretical standpoint, external assets did not moderate the relation between child maltreatment and trauma symptoms.

The fourth model assessed the moderating effect of external assets on the relation between trauma symptoms and dating violence victimization. The overall model was significant, $F(6, 124) = 6.51$ $p < .0001$, $R^2 = .28$. The direct effect of child maltreatment and trauma symptoms on TDV victimization were significant, β = 1.09 (*SE*= .50) 95% CI (.2080 – .2.0719) and β = .06 (*SE*= .02) 95% CI (.0074 – .1037), respectively. However, the effect of external assets on TDV victimization was not, β =-.01 (*SE*= .04) 95% CI (-.0678 – .0847). The interaction

between trauma symptoms × external assets was not statistically significant, β =.01 (*SE*= .00) 95% CI (-.0012 – .0133), indicating that the direct effects from trauma symptoms to dating violence victimization was not moderated by external assets. This pattern of findings is not reflective of a moderated mediation, such that from a theoretical standpoint, external assets did not moderate the relation between trauma symptoms and dating violence victimization.

Dating violence perpetration. Four moderated mediation models were conducted to assess the moderating effect of internal and external assets on the relations between: (a) child maltreatment and trauma symptoms, and (b) trauma symptoms and TDV perpetration. The first model assessed the moderating effect of internal assets on the relation between child maltreatment and trauma symptoms. The overall model was significant, $F(5, 125) = 10.03$, $p < .001$, $R^2 = .29$. The direct effect of child maltreatment on trauma symptoms was significant, β = 9.58 (*SE*= 1.51) 95% CI (6.5913 – 12.5772), but the effect of internal assets on trauma symptoms was not, β =.10 (*SE*= .14) 95% CI (-.1725 – .3646). The interaction between child maltreatment × internal assets was not statistically significant, β = -.29 (*SE*= .28) 95% CI (-.8436 – .2684), indicating that the direct effects from child maltreatment to trauma symptoms was not moderated by internal assets. This pattern of findings is not reflective of a moderated mediation, such that from a theoretical standpoint, internal assets did not moderate the relation between child maltreatment and trauma symptoms.

The second model assessed the moderating effect of internal assets on the relation between trauma symptoms and TDV perpetration. The overall model was significant, $F(6, 124) = 3.82$, $p = .002$, $R^2 = .16$. The direct effects of child maltreatment and trauma symptoms on TDV perpetration were significant β = 1.20 (*SE*= .52) 95% CI (.1734 – 2.2306) and β = 0.06 (*SE*= .02) 95% CI (.0076 – .1121), respectively. However, the effects of internal assets on dating violence

perpetration were not, β =-.01 (*SE*= .04) 95% CI (-.0939 – .0672). The interaction between trauma symptoms × internal assets was not statistically significant, β =-.00 (*SE*= .00) 95% CI (-.0054 – .0110), indicating that the direct effects from trauma symptoms to dating violence perpetration was not moderated by internal assets. This pattern of findings is not reflective of a moderated mediation, such that from a theoretical standpoint, internal assets did not moderate the relation between trauma symptoms and dating violence perpetration.

The third model assessed the moderating effect of external assets on the relation between child maltreatment and trauma symptoms. The overall model was significant, $F(5, 125) = 10.78$, $p < .001$, $R^2 = .30$. The direct effect of child maltreatment on trauma symptoms was significant, β = 9.89 (*SE*= 1.55) 95% CI (6.8202 – 12.9589), but the effect of external assets on trauma symptoms was not, β =.20 (*SE*= .14) 95% CI (-.0765 – .4788). The interaction between child maltreatment × external assets was not statistically significant, β =-.42 (*SE*= .29) 95% CI (-.9955– .1579) indicating that the direct effects from child maltreatment to trauma symptoms was not moderated by external assets. This pattern of findings is not reflective of a moderated mediation, such that from a theoretical standpoint, external assets did not moderate the relation between child maltreatment and trauma symptoms.

The fourth model assessed the moderating effect of external assets on the relation between trauma symptoms and TDV perpetration. The overall model was significant, $F(6, 124) = 3.82$ $p = .002$, $R^2 = .16$. The direct effect of child maltreatment and trauma symptoms on TDV perpetration were significant, β = 1.27 (*SE*= .54) 95% CI (.1902 – .2.3418) and β = .06 (*SE*= .03) 95% CI (.0052 – .1106), respectively. However, the effect of external assets on TDV perpetration was not, β = .00 (*SE*= .04) 95% CI (-.0818 – .0852). The interaction between trauma symptoms × external assets was not statistically significant, β =.00 (*SE*= .00) 95% CI (-.0046 –

.0113), indicating that the direct effects from trauma symptoms to TDV perpetration was not moderated by external assets. Findings did not indicate a moderated mediation, such that external assets did not moderate the relation between trauma symptoms and dating violence perpetration.

Post Hoc Analyses

Given the non-significant results of the moderated mediation models, several post hoc analyses were conducted. First, the moderated mediation models were run separately with each individual internal (i.e., commitment to learning, positive identity, positive values, and social competencies) and external asset (i.e., support, empowerment, boundaries and expectations, and constructive use of time) to explore whether specific assets attenuated the relation between: (a) child maltreatment and trauma symptoms and (b) trauma symptoms and TDV victimization and perpetration. However, for each of these constructs, findings were not significant. Following this, assets were included into the moderated mediation models by context (i.e., personal, family, social, and school); however, findings remained non-significant for each context. Finally, independent sample t tests were conducted to examine the between group differences in specific internal and external assets according to the presence or absence of maltreatment. Maltreated youth reported significantly lower levels of support $t(130) = 3.58, p < .0001$, empowerment $t(130) = 3.96, p < .0001$, boundaries/expectations $t(130) = 2.49, p = .01$, and positive identity $t(130) = 2.47, p = .02$, than non-maltreated youth.

Discussion

The current study examined the concurrent associations between child maltreatment, trauma symptoms, youth internal and external assets, and TDV. These associations were tested in a sample of African American youth, who reported either a current or recent romantic relationship, and were living in one of three high-burden communities (the majority lived in

public housing developments). Significant indirect effects were found for relations between child maltreatment and TDV for both victimization and perpetration via trauma symptoms. However, none of the eight moderated mediation models that tested the moderating role of internal and external assets on the relations between: (a) child maltreatment and trauma symptoms, and (b) trauma symptoms and TDV perpetration and victimization were significant, as hypothesized. Thus, neither internal or external assets functioned as a protective factor to weaken relations between: (a) child maltreatment and trauma symptoms, and (b) trauma symptoms and TDV.

The present study contributed to the existing literature on child maltreatment, trauma symptoms, and TDV in several ways. While child maltreatment is a well-established precursor to TDV, little is known about the potential underlying mechanisms that may partially explain this association (Orcutt et al., 2003). First, only one study to date has explored the indirect effect of child maltreatment on TDV perpetration in adolescence via trauma symptoms (see Wolfe et al., 2004), and no studies, to my knowledge, have explored the indirect effect of child maltreatment and TDV victimization via trauma symptoms. African American youth living in high-burden communities are disproportionately affected by violence exposure, poverty, and discrimination (Suárez-Orozco et al., 2011), research in this area has been primarily conducted among white youth. Finally, the majority of the TDV literature is deficit-centered and relatively few studies take into account protective factors, particularly among minority youth.

Descriptive Analyses

According to participant's self-report, approximately 60.9% and 69.4% of dating adolescents engaged in at least one act of TDV perpetration or victimization, respectively, in the past three months. While it is difficult to compare prevalence rates of TDV due to differing sample characteristics and context as well as the varying item severity, the prevalence rates in the

current sample are somewhat higher than those observed in some other studies focusing on adolescents living in inner-city urban settings (e.g., Goncy et al., 2017). One reason for this may be that the current study focused on a composite measure of TDV that combined items assessing psychological and physical TDV instead of including separate measures of psychological and physical dating violence victimization and perpetration, respectively (Niolon et al., 2015). TDV perpetration and victimization were also highly correlated with each other, consistent with literature reporting high reciprocity rates in adolescence (e.g., O'Leary et al., 2008). Additionally, while previous research has estimated that 1 in 4 U.S. children experience child maltreatment (Finkelhor et al., 2013), 40.6% of dating adolescents in the present study reported at least one act of child maltreatment. This highlights the need to explore consequences of child maltreatment in community samples of urban, inner-city youth living in high-burden communities, as well as the impact that poverty and related psychosocial stressors may have on child maltreatment. Further, over 62% of participants in the current study reported trauma symptoms above the clinical cutoff of post-traumatic stress disorder (PTSD). This is significantly higher than the lifetime diagnoses of PTSD in community samples of youth, which range from 6.3 to 7.8% (Abram et al., 2004).

Consistent with previous literature (e.g., Mass et al., 2010; Ozer et al., 2009), child maltreatment was positively associated with trauma symptoms and TDV victimization and perpetration. As expected and paralleling IPV literature, trauma symptoms were also associated with TDV victimization and perpetration (Bell & Orcutt, 2001). Child maltreatment was negatively associated with external assets, which is consistent with research indicating that adults with histories of child maltreatment report lower levels of social support and belonging than adults without a history of child maltreatment (Sperry & Widom, 2013). Further, the means and standard deviations of internal ($M = 21.31$, $SD = 5.50$) and external assets ($M = 20.39$, $SD =$

5.49) in the current study are similar to that of the means and standard deviations of internal (M = 20.64, SD = 5.08) and external assets (M = 210.67, SD = 5.35) reported by African American youth in the U.S (Scales, 2011).

Regression analyses showed that sex was associated with TDV victimization but not perpetration. Specifically, results indicated that males reported higher rates of TDV victimization than females. While most research indicates that males and females report similar levels of TDV victimization (e.g., Bonomi et al., 2012; O'Leary et al., 2008), some literature indicates higher rates of TDV perpetration among females (Feiring et al., 2002; Champion et al., 2008). This higher rate of female perpetration is unique to dating violence and some researchers theorized that reasons for this may be because adolescent female to male aggression (e.g., slapping) is more normalized and accepted than male-to-female aggression (Offenhauer & Buckalter, 2011). Further, some studies suggest that males are more likely to perpetrate more severe instances of violence than females (Sears et al., 2006)

Relations between Child Maltreatment, Trauma Symptoms, and TDV

Hypotheses that child maltreatment would be associated with TDV perpetration and victimization via trauma symptoms, controlling for sex and age, were supported. This is consistent with longitudinal research indicating that child maltreatment leads to trauma symptoms (Ozer et al., 2008) and that trauma symptoms are risk factors for adult IPV (Bell & Orcutt, 2001). Further, it is consistent with literature indicating that trauma symptoms mediate the relation between child maltreatment and dating violence perpetration in adults (e.g., Kendra et al., 2012; Swopes et al., 2013) and adolescents (Wolfe et al., 2004). However, this is the first study to date that has explored trauma symptoms as a mediator for the relation between child maltreatment and TDV victimization. Further, this relation has not previously been explored

among urban, African American youth living in high-burden communities (Niolon et al., 2015). Study findings support the information processing and anger regulation deficit models positing that adolescents with trauma symptoms may be more likely to engage in "survival mode functioning" when encountered with a perceived threat (Chemtob et al., 1997), which is likely to be activated in the case of inappropriate contexts, such as those that may occur during a dating relationship. Trauma symptoms can also impede the development of appropriate conflict resolution and emotion regulation skills, which is likely to increase relationship conflict (Shepard & Wild, 2014).

Additionally, it may be that trauma symptoms are associated with a desensitization or tolerance of violence, which may lead to the downplaying of dating violence and interfere with help-seeking behavior (Capaldi & Gorman-Smith, 2003). Some researchers have found that among African American youth living in high-burdened communities, youth who experienced higher rates of exposure to community violence were more likely to view violence as normative compared to youth who experienced lower rates of exposure to community violence (Black et al., 2015; Capaldi & Gorman-Smith, 2003; Fredland et al., 2005). Further, studies have shown that traumatized youth reported low self-esteem and beliefs that they were unworthy, which may further impede help-seeking behaviors (Black & Weisz, 2003; Lewis & Fremouw, 2001) and increase the risk for TDV.

Although the cross-sectional nature of this study precludes the exploration of temporal precedence, it suggests a theoretical association between these constructs and sets the stage for future prospective research that can identify: (a) child maltreatment as a risk factor that leads to increased trauma symptoms, (b) trauma symptoms as a risk factor for subsequent TDV victimization and perpetration, and can test the mediating effect of trauma symptoms on

longitudinal relations between child maltreatment and TDV victimization and perpetration. A better understanding of such factors has important implications for clinical intervention and prevention of TDV victimization and perpetration, especially during adolescence, an important period of development and consolidation of social-cognitive identity (Coleman & Hendry, 1990). However, it is important to note that the effect sizes found were small and, as such, while the findings are statistically significant, there is a question of clinical significance. In other words, while the present study did indicate an indirect association between child maltreatment and TDV victimization and perpetration via trauma symptoms, treating trauma symptoms may not be enough to bring about a decrease in TDV.

Moderating Role of Youth Assets on Relations between Child Maltreatment and Trauma Symptoms

Hypotheses that the strength of the relation between child maltreatment and trauma symptoms would vary across levels of external and internal assets were not supported. Models were non-significant regardless of whether internal and external assets were assessed as a composite, respectively, were included in the model individually (e.g., support and commitment to learning), or were assessed based on context (e.g., peer, family, and school). This is inconsistent with research on adult populations (e.g., African Americans adults bereaved by homicide and adults recruited in primary care clinics) that found specific internal (e.g., ability to cope with stress) and external assets (e.g., social support) moderated the relation between adverse childhood experiences and mental health outcomes (Bottomley et al., 2017; Poole et al., 2017). Further, and in particular for external assets, it contradicts the stress buffering model, which theorizes that social support increases an individuals' ability to cope with a traumatic

event by weakening the stress appraisal response (Cohen & Willis, 1985) and supporting adaptive cognitive and emotional processing (Williams & Joseph, 1999).

Similarly, findings are inconsistent with the PVEST model, which posits that, in the face of stressors, protective factors such as social support from family and friends, increase resilience among African American youth (Spencer, 2007). However, the PVEST model integrates the social, historical, and cultural context of African American adolescents when examining resilience and stresses the effect that individuals' perceptions of their experience has on their development. These factors are not addressed in the current study and, thus, future research should consider key protective factors represented within this model that would attenuate the relation between child maltreatment and trauma symptoms. It may be that other protective factors represented in the PVEST model, such as future orientation or self-appraisal, are more likely to attenuate the relation between child maltreatment and trauma symptoms (Bolder & Patterson, 2001; Chen & Vazsonyi, 2011; McDade et al., 2011; Oshiri et al., 2018).

Research has indicated that the composite number of developmental assets is associated with positive academic, psychological, social and behavioral outcomes (Benson et al., 2011) regardless of race, ethnicity, gender or socioeconomic backgrounds (Filbert & Flynn, 2010; Leffert et al., 1998; Taylor et al., 2005). However, previous studies have not explored whether these assets decrease the likelihood of negative outcomes among youth who have encountered adversity. As such, it may be that the internal (i.e., commitment to learning, positive values, social competencies, and positive identity) and external (i.e., support, empowerment, boundaries and expectations, and constructive use of time) assets assessed in the present study are not protective of trauma symptoms among maltreated youth.

Further, most of the work in this area has explored promotive rather than protective factors and, while these constructs have demonstrated to directly decrease the likelihood of child maltreatment and/or psychopathology (Fergus & Zimmerman, 2005), few, if any studies, have identified factors that moderate or attenuate the relations between child maltreatment and trauma symptoms in youth. While post-hoc analyses in the present study indicated that maltreated youth had lower levels of support, empowerment, boundaries/expectations, and positive identity than non-maltreated youth, these assets did not weaken the relation between maltreatment and trauma symptoms. Thus, one explanation for the absence of a moderating effect may be that the presence of the internal and external assets are not enough to attenuate the pathway between child maltreatment and trauma symptoms. Additionally, maltreated youth had less variability in their reported levels of assets than non-maltreated youth, which may also partially explain the null findings. Further, only 54 participants reported experiencing child maltreatment, as compared to 90 participants who did not report previous maltreatment. Low base rates make it difficult to detect an effect and, as such, large effect sizes would be needed to reach adequate power (Hinklr et al., 2013).

Further, there may be other confounding variables that are influencing this moderated relation. Participants in the present study lived in high-burden communities where adolescents were exposed to high levels of concentrated disadvantage, including poverty and community violence, experiences that are also likely to impact level of trauma symptoms and youth assets. Future research should consider controlling for these types of stressful experiences to assess the specific impact that child maltreatment has on trauma symptoms and explore whether or not this impact varies according to level of youth assets. This, however, may be challenging given that most measures that assess constructs such as exposure to community violence are written so

generally that they are difficult to use a control variable. For example, a victimization experience is described so generally in an exposure to violence measure that it can't be determined who the perpetrator was (e.g., peer, dating partner, etc.).

There are several challenges with the child maltreatment measure that may contribute to the lack of significant findings. First, given the low base rates of child maltreatment, the present study used a dichotomous measure of maltreatment and, as such, severity, type, age of onset, recency, chronicity, perpetrator type, and duration were not assessed. Researchers have stressed the importance of capturing the heterogeneity of maltreatment according to these dimensions rather than simply assessing it occurrence (Margolin & Gordis, 2000). The literature has also consistently indicated that chronic maltreatment leads to worse outcomes than an isolated instance of maltreatment (e.g., Johnson-Reid et al., 2012). Some argue that the severity of the maltreatment itself may help explain some of the variability in the negative outcomes reported by victims of maltreatment (Evans et al., 2013). Thus, it may be that internal/external assets attenuate the relation between child maltreatment and trauma symptoms only with isolated or less severe occurrences of maltreatment.

Moderating Role of Youth Assets on Relations between Trauma Symptoms and TDV

Hypotheses that the strength of the relation between trauma symptoms and dating violence would vary across levels of external and internal assets were not supported. Post-hoc analyses also found that models were non-significant regardless of whether internal and external assets were assessed as a composite construct, were included in the model individually (e.g., support, commitment to learning, etc.), or were represented various contexts (e.g., peer, family, and school). This, again, is inconsistent with the PVEST model, which posits that risk factors

and outcomes are mitigated by protective processes, and as such, individuals' vulnerabilities can be counterbalanced by positive support systems or beliefs (Spencer, 2007).

The PVEST model describes "net stress" as a key component of adolescent development. Spencer (2007) theorizes that individuals experience stress as a result of an imbalance between challenges and availability of supports. Given that the established relation between trauma symptoms and TDV is so strong, it may be that the assets assessed in the current study are not enough to counterbalance an individuals' challenges (i.e., trauma symptoms) and, thus, they are still vulnerable to TDV. In other words, internal and external assets may not be acting as "*stress reducers*" and, thus, not facilitating the "*constructive reactive coping patterns*" and contributing to "*beneficial emergent identities*" (Spencer, 2008, p. 718). This may be particularly true for participants in the current sample who reported higher levels of trauma symptoms as compared to other samples of community youth (Abram et al., 2004).

Alternatively, as described above, it may be that the present study did not assess key protective factors that would potentially weaken the relation between trauma symptoms and TDV in African American youth. It may be that other Afro-centric protective or cultural factors, such as parental connectedness, monitoring, and communication or religiosity, would be more likely to weaken the strength of the association between trauma symptoms and TDV (Kast et al., 2016; Roosa et al., 2011; Taylor et al., 2004). Research has indicated that among minority adolescents, perceived parental caring was the most commonly identified protective factor against TDV (Kast et al., 2016). Further, there is a growing number of studies that have shown minority youth who endorsed a stronger versus weaker family orientation reported fewer behavioral problems and higher levels of social competencies (Kiang et al., 2012). Researchers posit that a strong sense of family cohesion or familism is associated with better adjustment

given that it may create a more positive, organized, and harmonic home environment (Roosa et al., 2011). In addition, family loyalty is protective against negative peer influences such as involvement with deviant peers among minority youth (Roosa et al., 2011). This is consistent with the PVEST model, which theorizes that youths' cultural values and beliefs about their family, as well as their role identity within the family, affects their vulnerability level, emergent identities, and stable coping responses. Thus, it may be that a strong sense of family cohesion, loyalty, and perceived parental caring, may lead to improved communication, problem solving skills, and better help seeking abilities and, therefore, be associated with decreased TDV even in the face of trauma. Religiosity, in turn, has also been identified as an important protective factor among African American youths that has been associated with resilient outcomes (Taylor et al., 2004).

It may also be that there is a sex difference in the effect of assets on the relation between trauma symptoms and TDV. As mentioned in the literature review, studies have indicated that the association between child maltreatment and dating violence may be moderated by sex. Specifically, meta-analytic research has demonstrated that the strength of the relation between exposure to IPV and IPV perpetration is stronger for males while the relation between exposure to IPV and IPV victimization is stronger for females (Whitfield et al., 2003). Thus, the effect of assets on these relations may also be moderated by sex. One study indicated that while among girls, there was no evidence of the protective effect of conflict resolution skills on the association between anger/hostility and TDV perpetration, the relation between anger/hostility and TDV sexual perpetration became weaker when boys endorsed high versus low conflict resolution skills (Smith-Darden et al., 2017). Thus, it may be that internal and external assets influence the

relation between trauma symptoms and TDV differently according to sex. In other words, there may be a maltreatment by internal/external asset by sex interaction.

Limitations

While the present study had several strengths, its limitations should be acknowledged. Based on the sample size, sex differences in the relations between child maltreatment, trauma symptoms, and TDV were not able to be tested. Previous research has indicated that, while dating violence is more reciprocal in adolescence than in adulthood, there is a difference in the association between child maltreatment and TDV according to sex. Specifically, research has indicated that maltreated women are more likely to be victimized by dating violence while maltreated men are more likely to perpetrate dating violence (Stith et al., 2000; Whitfield et al., 2003). This differential association is similar to the differences in expression of psychopathology among maltreated youth, as boys tend to report higher rates of externalizing symptoms whereas girls tend to report higher rates of internalizing symptoms (Mihalic & Elliott, 1997; Stith et al., 2000). Thus, the path between child maltreatment and trauma symptoms may have been stronger for girls than for boys. Further, there may be a differential association according to sex in the relations between child maltreatment and TDV perpetration and victimization. Specifically, research has indicated that while exposure to IPV is more strongly associated with future IPV perpetration in males as compared to females, it is more strongly associated with IPV victimization in females as compared to males (Stith et al., 2000; Whitfield et al., 2003). This differential association may be paralleled in adolescence and, as such, it may be that that maltreated girls are more likely to be victims of TDV, whereas maltreated boys are more likely to be perpetrators of TDV.

The cross-sectional nature of the present study precluded the examination of temporal precedence. In other words, while findings indicate a relation between child maltreatment, trauma symptoms, and TDV, it is not possible to determine the directionality of this relation. Although previous literature and theory suggests that child maltreatment predicts trauma symptoms, which would, in turn, predict TDV, it may also be that TDV predicts trauma symptoms. Indeed, longitudinal research has indicated that TDV victimization predicts symptoms of PTSD, which then predicts revictimization of TDV (Rancher et al., 2019). Therefore, TDV could be conceptualized as a traumatic stressor as well as an outcome of trauma. Further, most participants in the present study were living in areas of concentrated disadvantage characterized by high rates of community violence, geographic isolation, poverty, and discrimination, all of which are associated with increased trauma symptoms. Specifically, in 2014 the number of youth violence reports in these communities were more than ten times the average rate for the city. Thus, it is not possible, with concurrent data, to determine whether youth's reported trauma symptoms are a result of child maltreatments, other stressful life events, or TDV itself.

While the present study did not exclusively assess heterosexual dating couples, it did not differentiate heterosexual couples from sexual minority couples. Although the literature on sexual minority TDV is in its infancy, there is some crossectional research indicating that sexual minority individuals are more likely to report dating violence than their heterosexual peers during both late adolescence and early adulthood (Dank et al., 2013; Edwards et al., 2015; Porter & Williams, 2011). Recent longitudinal work has also indicated that youth who report both same and other-sex romantic partners have higher levels of dating violence both at baseline and over time as compared to youth who only report other-sex romantic partners (Martin-Storey &

Fromme, 2016). Further, research has indicated that gender minorities (e.g., individuals who identify as transgender genderqueer, or non-binary) are at a higher risk for IPV victimization and perpetration than individuals who identify as cisgender (Dank et al., 2014; Hoxmeier, 2016). Minority stress theory offers one explanation for this increased risk (Meyer, 2003). Specifically, it posits that sexual and gender minority youth are more likely to experience negative psychosocial outcomes such as increased harassment and stress, which may lead to elevated relationship conflict and a decreased ability to use adaptive conflict resolution strategies. This theory also emphasizes the importance of detangling the effect of multiple stressors. Thus, the exploration of risk and protective factors for TDV among sexual and gender minority youth is imperative for prevention and intervention efforts, particularly during early adolescence, as youth are typically learning skills related to dating and emotion regulation (Connolly & McIsaac, 2009). Relatedly, the present study used a gendered measure of TDV that referred to participants dating partners as "boyfriends" or "girlfriends," which was not inclusive of gender minority individuals.

The present study operationalized experience of child maltreatment by assessing whether youth had, at any point, experienced one or more type of maltreatment. While the most explored dimension of child maltreatment in the literature is by type or form (English et al., 2005), some researchers have adopted different approaches to capture the nature of child maltreatment, and have examined child maltreatment by type, severity, frequency, duration, perpetrator type, and developmental time period (Barnett et al., 1993). Additionally, the age of onset is an important factor to consider given that maltreatment may negatively impact children's ability to master developmental tasks (Manly et al., 2001). Others consider chronicity to be a key factor in understanding the long-term effects of child maltreatment (Bolger & Patterson, 2001; Manly et

al., 2001). The measure of child maltreatment used in the present study was not able to capture these aspects of the maltreatment (e.g., severity or duration) that may have influenced the relation between trauma symptoms and TDV. Additionally, the present study only used a three-month time frame to assess dating violence and, as such, some instances of dating violence may have been missed. Relatedly, the present study defined dating relationships by whether or not the adolescents identified that they had a "boyfriend" or "girlfriend". However, this terminology may have been overly exclusive, as some adolescents may not define their dating relationships in a similar manner. Some researchers consider dating or romantic relationships to mean "mutually acknowledged ongoing voluntary interactions" (Collins et al., 2009, p. 632), which may have been a more comprehensive operationalization.

Finally, the present study included exposure to intimate partner violence as a subtype of child maltreatment. While clinicians and researchers are increasingly recognizing exposure to IPV as a type of child maltreatment (e.g., Holden, 2003; Johnson et al., 2005), some disagree with this conceptualization. They argue that, although some U.S. state laws (e.g., New Mexico) require the mandated reporting of exposure to IPV, most U.S. states do not. There is also some concern that if the field moves towards a conceptualization of child maltreatment that includes exposure to IPV, it would increase the burden on the child welfare system, which is already under-resourced. Further, this conceptualization may increase the stigma for the adult victims of IPV. Indeed, operationalizing exposure to IPV as a subtype of maltreatment may lead to victim blaming and could result in decreases of IPV reports, particularly if the victim of IPV could be reported to child protective services for child maltreatment. Youth who are exposed to IPV are at higher risk for exposure to psychologically abusive environments and may experience the same short- and long-term social, emotional, and behavioral outcomes as maltreated youth (Cat & Van

Deusen, 2002; Roberts et al., 2010). However, it is important to also consider the repercussions of conceptualizing exposure to IPV as a subtype of child maltreatment, particularly among ethnic/racial minority victims of IPV who may feel further victimized by this conceptualization.

Future Directions and Implications

Overall, TDV is considered a significant public health problem associated with a number of detrimental outcomes (CDC, 2014; Connolly & Josephson, 2007). Thus, efforts to establish risk and, to a lesser extent, protective factors for TDV have been prevalent (e.g., McCloskey & Litcher, 2003; Parker et al., 2016). Current findings, consistent with previous literature and theory, indicated a concurrent association between child maltreatment, trauma symptoms, and TDV. However, longitudinal studies are needed to identify the temporal effects of child maltreatment on trauma symptoms and the effects of both of these variable on TDV. Specifically, future research should explore the prospective effect of child maltreatment on trauma symptoms while controlling for baseline child maltreatment, as well as the prospective effect of trauma symptoms on TDV perpetration and victimization while controlling for baseline trauma symptoms. Further, it is important to understand the predictive effect of child maltreatment on TDV via trauma symptoms, as it would elucidate our understanding of potential mechanisms through which this transmission of violence occurs and shed light on causality. Researchers may also consider controlling for other stressful life events (e.g. exposure to community violence) and mental health difficulties when exploring these relations to understand the specific effect of child maltreatment on trauma and subsequent TDV. Examining the directionality and strength of these temporal relations would have important implications for research and practice.

One recommendation based on the current study findings would be to incorporate trauma-informed care and address components of trauma-focused cognitive behavior therapy, an evidence-based treatment for youth impacted by trauma (TF-CBT; Cohen et al., 2006). For example, TDV prevention programs would do well to provide psychoeducation about trauma and teach affect identification and regulation skills, cognitive coping skills, and relaxation skills. Another suggestion would be to train teachers on trauma-informed practices and instruct them on how to make appropriate referrals for youth displaying trauma symptoms. Safe Dates (Foshee & Langwick, 2010), an evidence-based prevention program for middle and high school students designed to reduce the initiation of TDV perpetration and victimization already addresses important components that are likely to reduce the risk for TDV among traumatized youth. For example, their curriculum includes effective communication strategies, anger regulation skills, and help-seeking behavior. However, it may do well to address empowerment, survival-mode functioning, and conflict resolution skills, particularly if at baseline participants are reporting elevated levels of trauma symptoms.

Future research should also examine the prospective bidirectional relations between trauma symptoms and TDV, given that previous research has indicated that trauma symptoms are both a risk factor and consequence of TDV (Rancher et al., 2019). As such, it is important to identify protective factors that attenuate the prospective relations between: (a) TDV and trauma symptoms, and (b) trauma symptoms and TDV. Alternatively, future research would do well to use latent profile analyses (LPA) to identify profiles of youth with varying characteristics (e.g., maltreated youth with high levels of external assets) and examine whether they vary in terms of trauma symptoms and TDV perpetration and victimization (e.g., Benson et al., 2011). While this approach will not inform mediation processes, this categorical data analysis can be used to

identify subgroups of children with similar patterns of child maltreatment history, trauma symptoms, TDV, and internal and external assets. However, a larger sample is needed to conduct these analyses.

Further, given that most of the participants in our study were African American adolescents living in high-burdened neighborhood with elevated crime and poverty rates, it is important to determine the extent to which out findings generalize to African American youth living in other settings. Another avenue of future research is to determine whether the current findings are generalizable to youth with clinical, CPS, and juvenile justice involvement. It is also important to explore whether the observed relations are invariant based on sex. As mentioned above, the relation between child maltreatment and TDV perpetration/victimization, as well as the effect of internal/external assets on this relation, may vary by sex. Thus, one direction of future research would be to explore the moderating role of sex on the relations between child maltreatment and trauma symptoms, and trauma symptoms and TDV. It is also important to explore risk and protective factors for sexual and gender minority youth. Some studies have indicated that youth with sexual and gender minority identity report higher frequencies of TDV as compared to youth with heteronormative identities and that bisexual youth, in comparison to peers with same-or other-sex partners, report increasing levels of dating violence over time (Martin-Storey & Fromme, 2016). Importantly, research should also explore these association using an intersectionality framework and explore the risk and protective factors of TDV among black sexual and gender minority youth, given that research has found that this population is particularly at risk for a number of adverse health outcomes and health inequalities (Fields et al., 2016).

Future research would also do well to use a more emic or culture-specific approach to examine protective factors that may weaken the relations between study variables. For example, Garcia Coll and colleagues' (1996) social stratification model may be particularly relevant when studying resilience, as it strives to take into account the cultural characteristics unique to ethnic and racial minority cultures. Specifically, this model takes into account the intersection of social class, culture, ethnicity and race, as well as developmental competencies (e.g., social, emotional, and cognitive skills) and family values (e.g., structure), which are likely to result in differential associations when examining resilience among African American youth (Flores et al., 2005). Further, this model emphasizes the importance of examining racism, discrimination, oppression, and segregation when studying the development of minority youth (Coll et al., 1996).

According to this model, one strength of the current study is that it did take into account social position variables as it focused uniquely on African American youth with fairly consistent SES. Additionally, the present study followed the recommendation to explore the positive development of racial minority youth and focus on adaptation and adjustment rather than adversity (e.g., Dodge, 2011; Guerra et al., 2011). However, researchers have advocated toward using both qualitative and quantitative methods when examining positive developmental outcomes among minority youth (Cabrera, 2013). As such, it is imperative to use a mixed method approach in order to accurately identify the dynamic processes that lead to positive outcomes among minority youth.

Future researchers should also identify malleable protective factors that may mitigate relations between (a) child maltreatment and trauma symptoms and (b) trauma symptoms and TDV, being sensitive to the effects of culture (e.g., future orientation and family structure) and context. For instance, studies have consistently indicated that future orientation is associated with

positive youth development even in the face of adversity (Chen & Vazsonyi, 2011; McDade et al., 2011; Oshiri et al., 2018). One explanation for this is that youth with positive future orientations are more likely to use problem-focused coping skills (Oshiri er al., 2018). Self-efficacy, or having an internal locus of control, and self-regulation skills have also been linked to resilience and decreased internalizing symptoms among maltreated youth with low socioeconomic backgrounds (e.g., Bolder & Patterson, 2001; Kim & Cicchetti, 2003). Empathy, parental monitoring, and school belonging, in turn, have been linked to decreased TDV perpetration both concurrently and over time among African American and European American from low-income families with histories of stressful life experiences (e.g., exposure to community and/or family violence; Espelage et al., 2020). Extended family and kinship networks, in particular, are an important source of support for African American youth (Taylor et al., 1993) and, as such, research has consistently demonstrated that family support is associated with decreased negative outcomes (Myers & Taylor, 1998). Finally, self-confidence, positive family interactions, and neighborhood social cohesion have been identified as key protective factors for low-income, urban youth.

Researchers should also strive to include Afro-centric cultural values such as religiosity, as well as positive racial identity, acculturation, and family values/structure when exploring protective factors. Studies indicate that African Americans tend to report more religious affiliations than other races/ethnicities in the U.S. (Pew Forum on Religion & Public Life, 2009). Among African American youth, religiosity and spirituality is associated with increased self-esteem (Weber & Pargament, 2014) and resilient outcomes (Taylor et al., 2004). Further, researchers should take into account experiences of discrimination, prejudice, and oppression as risk factors for trauma symptoms, and consequently, TDV. Moreover, studies should explore the

cumulative effect of child maltreatment, segregation, racism, and social position (e.g., race/ethnicity, social class, gender) when examining risk factors of TDV, given that research has found that it is the accumulation of risk factors, rather than any specific risk factor, which leads to negative outcomes (Lamela & Figueiredo, 2018). Thus, another direction for future research would be to explore whether an index of risk factors predicts increased frequencies of TDV and the degree to which an index of protective factors predicts decreased frequencies of TDV (DeWit et al., 1995).

Finally, although exploration of child maltreatment by type has been historically the most common measurement approach to child maltreatment (Jackson et al., 2019), some consider that type alone could be oversimplifying the maltreatment experience (Lau et al., 2005). Researchers have argued that child maltreatment is one of the most complex variables in the social sciences (Gabrielli et al., 2017) and, thus, it is important to utilize more comprehensive operationalizations of child maltreatment that take into account severity, duration, age of onset, chronicity, and frequency. Extant research has demonstrated that a child who experiences continuous maltreatment will demonstrate worse outcomes than a child who experiences one, isolated incident of maltreatment (e.g., Johnson & Thompson, 2008). Thus, an important direction for future research would be to explore the differential association of child maltreatment, trauma symptoms, and TDV according to child maltreatment severity, duration, or frequency. Alternatively, researchers may consider distinguishing experiences of maltreatment by their level of threat (e.g., exposure to IPV, physical abuse, sexual abuse) or deprivation (e.g., emotional neglect, physical neglect). McLaughlin et al. (2014) theorize that these experiences are differentially associated to emotional, cognitive, and neurobiological development and, thus, should be explored separately. Specifically, while children exposed to threatening experiences

exhibit information-processing bias and may have increased emotional reactivity or anger, which could result in TDV perpetration, children exposed to deprivation do not tend to demonstrate these alterations in emotional processing and, rather, report deficits in cognitive functioning (McLaughlin et al., 2016).

Conclusion

Overall, this study highlighted the underlying role of trauma symptoms as a potential causal mechanism of relations between child maltreatment and TDV, and also the need to conduct additional research to identify protective factors that may mitigate relations between: (a) child maltreatment and trauma symptoms, and (b) trauma symptoms and TDV perpetration and victimization. While this study demonstrated concurrent relations between child maltreatment, trauma symptoms, and TDV, prospective relations among these variables are not well understood, particularly among ethnic/racial minority youth. Better understanding of the directionality and strength of longitudinal relations between child maltreatment, trauma symptoms, and TDV could inform the timing and content of clinical interventions. Further, the majority of the TDV literature, as well as literature on ethnic/racial minority youth, primarily focuses on risks and negative behavioral trajectories which discounts positive pathways of youth development (e.g., McLoyd, 2006). Focusing on protective factors could inform clinical interventions focused on decreasing negative outcomes following child maltreatment and may enhance our understanding of how to promote positive youth development among maltreated, racial minority youth. Further, this study emphasizes the need to identify and explore the influence of environmental and contextual factors on TDV among youth living in under-resourced communities. Although the current findings of non-significant moderating effects for relations between: (a) child maltreatment and trauma symptoms and (b) trauma symptoms and

TDV were not anticipated based on prior literature and theory, the current study findings emphasize the need to continue exploring protective factors that would attenuate these associations, considering the influence of environment and context.

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Appendix A

Adverse Childhood Experience (ACE) Questionnaire

Please remember that this survey is totally private. We will not share your answers with anyone.

The following section will ask you questions about what your life was like growing up. Please select the answer that best fits you.

During your whole life…

1. Did a parent or other adult in the household often... Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt?	Yes or No
2. Did a parent or other adult in the household often...Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?	Yes or No
3. Did an adult or person at least 5 years older than you ever...Touch or fondle you or have you touch their body in a sexual way? or Try to or actually have oral, anal, or vaginal sex with you?	Yes or No
4. Did you often feel that ...No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?	Yes or No
5. Did you often feel that ...You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	Yes or No
7. Was your mother or stepmother: Often pushed, grabbed, slapped, or had something thrown at her? Sometimes or often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?	Yes or No

Appendix B

Child Report of Posttraumatic Symptoms (CROPS)

Mark how true each statement feels for you in the past week. We value your opinion and want to learn from your experiences so would appreciate your answering as many of the questions as you can.
There is no right or wrong answer.

I daydream.	0=none, 1=some, 2=lots
I "space out" when people are talking to me.	0=none, 1=some, 2=lots
I find it hard to concentrate.	0=none, 1=some, 2=lots
I think about bad things that have happened.	0=none, 1=some, 2=lots
I try to forget about bad things that have happened.	0=none, 1=some, 2=lots
I avoid reminders of bad things that have happened.	0=none, 1=some, 2=lots
I worry that bad things will happen.	0=none, 1=some, 2=lots
I do special things to make sure nothing bad happens.	0=none, 1=some, 2=lots

Mark how true each statement feels for you in the past week. We value your opinion and want to learn from your experiences so would appreciate your answering as many of the questions as you can.
There is no right or wrong answer.

I do some things that I'm probably too old for.	0=none, 1=some, 2=lots
Things make me upset or mad.	0=none, 1=some, 2=lots
It is hard for me to go to sleep at night.	0=none, 1=some, 2=lots
I have bad dreams or nightmares.	0=none, 1=some, 2=lots
I get headaches.	0=none, 1=some, 2=lots
I get stomach aches.	0=none, 1=some, 2=lots
I feel sick or have pains.	0=none, 1=some, 2=lots

I feel tired or low energy.	0=none, 1=some, 2=lots
I feel all alone.	0=none, 1=some, 2=lots

Mark how true each statement feels for you <u>in the past week</u>. We value your opinion and want to learn from your experiences so would appreciate your answering as many of the questions as you can.
There is no right or wrong answer.

I feel strange or different than other kids.	0=none, 1=some, 2=lots
I feel like there's something wrong with me.	0=none, 1=some, 2=lots
I feel like it's my fault when bad things happen.	0=none, 1=some, 2=lots
I'm a jinx, or bad-luck charm.	0=none, 1=some, 2=lots
I feel sad or depressed.	0=none, 1=some, 2=lots
I don't feel like doing much.	0=none, 1=some, 2=lots
My future looks bad.	0=none, 1=some, 2=lots
I'm on the lookout for bad things that might happen.	0=none, 1=some, 2=lots
I am nervous or jumpy.	0=none, 1=some, 2=lots

Appendix C

Dating Violence Scale

The next section is going to ask you about your dating relationships. Please answer each question honestly.

Have you had a boyfriend/girlfriend in last 3 months?	Yes, No (if No, skip to next section), Decline to answer
If yes, How long have you been dating this boyfriend/girlfriend? Or if you are no longer dating, how long *did* you date this boyfriend or girlfriend?	1 = Less than 1 month, 2 = 1-3 months, 3 = 4-6 months, 4 = 6-9 months, 5 = 9-12 months, 6 = 12 or more months, 7=Decline to answer

Thinking about the last three months, how often has a BOYFRIEND OR GIRLFRIEND (someone that you dated or gone out with) done the following things to you? Only include it when the person did it to you first. In other words, don't count it if they did it to you in self-defense.

In the last 3 months, how often has a boyfriend or girlfriend done the following things to you?

Damaged something that belonged to you	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Said things to hurt your feelings on purpose	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Would not let you do things with other people	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Did something just to make you jealous	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Threatened to hit or throw something at you	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Scratched you	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Kicked you	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Pushed or shoved you	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Threw something at you that could hurt	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Punched or hit you with something that could hurt	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer

Thinking about the last three months, how often have YOU done the following things to a boyfriend or girlfriend (someone that you dated or gone out with)? Only include it when you did it to the person first. In other words, don't count it if you did it in self-defense.

In the last 3 months, how often have you done the following things to a boyfriend or girlfriend?

Damaged something that belonged to him or her	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Said things to hurt his or her feelings on purpose	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Would not let him or her do things with other people	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Did something just to make him or her jealous	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Threatened to hit or throw something at him or her	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Scratched him or her	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Pushed or shoved him or her	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Threw something at him or her that could hurt	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Punched or hit him or her with something that could hurt	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer
Kicked him or her	1 = Never, 2 = 1-3 times, 3 = 4-9 times, 4 = 10 or more times, 5 = Decline to answer