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Dimensions of Trauma and Specific Symptoms of Complex Posttraumatic Stress Disorder in Inner-City Youth: A Preliminary Study

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We examined relations of posttraumatic stress disorder (PTSD) symptoms with dimensions of trauma, including environment (Domestic vs. Community) and proximity (Indirect vs. Direct trauma) among inner-city youth. Participants ($n = 65$) reported traumatic events they had experienced on a version of the UCLA PTSD Reaction Index Trauma Exposure Screen, and reported PTSD symptoms with the PTSD Checklist—Civilian version (PCL-C). High rates of trauma and PTSD were found, consistent with other reports of inner-city youth. The 49% of youth surveyed met criteria for PTSD on the PCL-C symptom scale with a score cutoff of 35. Females reported elevated PTSD symptom scores and a higher incidence of Domestic trauma than did males but similar incidence of other trauma types. When males and females were combined, Domestic trauma significantly correlated with each of the PTSD symptom clusters of intrusions, numbing/avoidance, and hyperarousal. When participants with Community trauma were excluded from analyses to reduce confounding environmental influence, Domestic trauma marginally correlated with numbing/avoidance symptoms. Our findings suggest that Domestic trauma may result in more emotional numbing/avoidance symptoms than other types of trauma. Further analyses suggested that Community trauma may result in more intrusions and hyperarousal symptoms rather than

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emotional numbing. Environmental aspects of trauma, rather than the proximity of trauma, may have greater impact on presentation of PTSD. Future studies with larger samples are needed to confirm these findings.

Keywords: youth; adolescent; PTSD; trauma; complex PTSD

Urban violence is acknowledged by the World Health Organization as a serious health problem (Krug, Mercy, Dahlberg, & Zwi, 2002). A burgeoning body of research is directed at both the perpetrators and the victims of violence. Research to date indicates that the sequelae of violence in victims such as inner-city youth include psychiatric disorder, substance use, academic failure, and later juvenile justice involvement (Cooley-Strickland et al., 2009).

Inner-city youth is defined as a group of adolescents and young adults that live in urban communities among low-income families, and are most often of racial minority (Gómez, Johnson, Selva, & Sallis, 2004). This population is disproportionately affected by exposure to violence compared with suburban, higher income, and White populations (Cooley-Strickland et al., 2009; Kaufman, Hall, & Zagura, 2012). The report by the World Health Organization (Krug et al., 2002) suggests several gaps in our understanding of urban violence. These include knowledge regarding types of violence, magnitude, causes, and public health consequences of violence, especially with regard to gender.

The most obvious sequela of trauma is posttraumatic stress disorder (PTSD). Symptoms of PTSD include hyperarousal, avoidance, and reexperiencing events as intrusions or flashbacks (American Psychiatric Association [APA], 2000). According to the National Center for PTSD, current indices of PTSD rely on symptoms that apply to acute trauma such as car accidents, rape, or natural disasters and may not accurately capture the impact of chronic or repeated trauma such as child abuse, domestic violence, or community violence. The designation of complex PTSD has been suggested to indicate the set of symptoms that are associated with long-term or repeated trauma, especially when applied to children and adolescents, and cumulative childhood trauma predicts increasing PTSD symptom amounts and types in female adults and children (Cloitre et al., 2009). Studies of PTSD rates reveal that urban youth are more likely to experience a higher prevalence of PTSD than are youth from suburban or rural settings, most likely from increased exposure to violence (Breslau, Wilcox, Storr, Lucia, & Anthony, 2004; Copeland, Keeler, Angold, & Costello, 2007; Yoder, Longley, Whitbeck, & Hoyt, 2008). Moreover, the constellation of complex symptoms may be unique, given the chronic nature of exposure, and may require specialized treatment (Cloitre et al., 2010).

Violence may be divided into several types, but here we consider four broad classes of violence in the urban setting: Community, Domestic, Indirect (or witnessing) violence, and Direct victimization of violence. *Community violence* is defined as deliberate acts intended to cause physical harm to persons in the community (Cooley-Quille, Turner, & Beidel, 1995). Community violence afflicts urban youth at high rates, often in the form of street gang violence (Cooley-Strickland et al., 2009). Domestic violence differs from community violence because it often occurs in a household and tends to involve interrelationship conflict. According to the National Coalition Against Domestic Violence (2007), domestic violence consists of "willful intimidation, assault, battery, sexual assault or other abusive behavior perpetrated by one intimate partner against another." The perpetrator-victim relationship varies from state to state, with some including dating

relationships, and some defining an intimate partner as a family or household member (Giguere & Ney, 2009). Domestic violence occurs more frequently in urban versus rural communities, and poorer versus wealthier communities, as does community violence. Unlike with community violence, women tend to suffer domestic violence more than men (California Coalition Against Sexual Assault [CALCASA], 2008).

Direct trauma differs from indirect trauma in that the person experiencing the trauma is considered a victim with direct trauma but considered a witness or spectator with indirect trauma. This variable, which we consider as proximity, has been reported to affect emotional sequelae of trauma, including PTSD (Ward, Flisher, Zissis, Muller, & Lombard, 2001).

The goal of this study was to determine whether there are differential effects of types of trauma on PTSD symptoms. This topic is not well understood according to the literature, but it is thought, in some cases, that proximity of trauma (direct vs. indirect) could play a role in PTSD severity (Ward et al., 2001). Also, the differential effects on PTSD symptoms of community as compared to domestic trauma are not well understood, but some types of domestic trauma have been associated with specific PTSD symptoms, as is the case with domestic violence and emotional numbing (Rosenthal, Cheavens, Lynch, & Follette, 2006). Many studies focus on a specific type of trauma and do not examine interactions with other types of trauma. Ward et al. (2001) performed a study with children in Africa using categories of trauma to look at PTSD diagnosis and other sequelae. However, neither PTSD symptom burden nor PTSD symptom types were considered. Differential effects on PTSD symptom severity have been observed with direct victimization as compared to witnessing trauma in some additional studies of youth (Ruchkin, Henrich, Jones, Vermeiren, & Schwab-Stone, 2007) but not others (Muller, Goebel-Fabbri, Diamond, & Dinklage, 2000). We are unaware of any studies that examine our particular categories of trauma or their correlations with PTSD symptom types. Especially in the inner-city environment, where there are high rates of community and domestic trauma, it is important to understand the cumulative effects as distinct from the individual impact of these types of trauma. PTSD manifestations may vary among inner-city youth when compared to other populations, and it is important to be able to identify this potentially disabling disorder among this population to facilitate improved functional outcomes.

The impact of different domains of trauma has been studied in terms of resulting mental health disorders (Ward et al., 2001). However, specific PTSD symptom profiles have rarely been studied with reference to different types of trauma; we found only one study that has done so (Griffing et al., 2006). Griffing et al. (2006) studied the differential impacts of adult domestic violence or childhood physical and sexual abuse on the PTSD symptom clusters of women in shelters. The study revealed that childhood sexual abuse predicted elevated hyperarousal symptoms, whereas severity of current domestic violence predicted elevated avoidance and hyperarousal symptoms. Furthermore, severity of past trauma predicted levels of intrusions and hyperarousal. As the authors pointed out, the use of examining severity of individual PTSD symptom clusters lies in the ability to target individual symptoms for treatment, such as relaxation interventions for hyperarousal with victims of childhood sexual abuse.

Given that PTSD symptoms are diverse in nature, it is important to study symptom profiles with various populations of different gender, age, culture, and trauma history for more effective diagnosis and treatment. Also, understanding how specific PTSD symptoms manifest after exposure to different trauma types may further elucidate the nature of PTSD itself and reveal mechanisms of disruption of individual functioning. This study investigated trauma and

PTSD in a group of inner-city youth in Houston, Texas. Our primary intention was to examine specific trauma correlates of PTSD, also exploring effects of gender, with an overarching aim of informing and facilitating development of interventions. We hypothesized that different domains of trauma would be associated with specific symptom clusters of PTSD. Based on literature indicating gender differences in PTSD diagnostic prevalence (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), we further hypothesized that the amount and type of trauma experienced and resulting symptoms of PTSD would vary by gender.

METHODS

Participants

Data from 65 youth and young adults (mean age = 20 years, age range 12–28 years) were provided by Youth Advocates, Inc. (YA), a Houston, Texas service organization for the support and advancement of inner city youth and young adults. The participants conformed to standard definitions of inner-city youth; that is, most were non-White youth from low-income or poverty-level families living in urban areas (Gómez et al., 2004; Ssewamala, Sperber, Blake, & Ilic, 2012). Based on the zip codes in and around the YA location (77003, 77004, 77023) during survey administration in 1995, YA youth qualify as a Medically Underserved Population (MUP), according to the U.S. Department of Health and Human Services. MUPs are groups of persons who face economic, cultural, or linguistic barriers to health care. The U.S. Department of Health and Human Services determines MUP status according to calculations involving the percentage of low-income residents, primary care physician to resident ratio, infant-mortality rates of the area, and percentage of older adults (>65 years old) residents. The current sample demographics reflected the YA population, with a predominance of males and Hispanics. Race/ethnicity distribution included Hispanic, 65.0% ($n = 42$); African American, 11.0% ($n = 7$); Asian, 9.2% ($n = 6$); White, 6.1% ($n = 4$); biracial 1.5% ($n = 1$, African American/Asian), and unspecified 7.7% ($n = 5$). Analyses were conducted with approval of Baylor College of Medicine's Institutional Review Board.

Founded in 1988, YA has provided service for underserved and troubled teens for more than two decades, and currently serves more than 900 youth in the Houston metropolitan area at no cost to the youth. YA has three locations in Houston, where positive alternative activities are held (e.g., breakdancing, music, art, soccer) on evenings during the week. YA is not a treatment program but offers a peer-support community, educational support and tutoring, substance abuse education, life skills training, job search assistance, and, as needed, individual and group counseling and referrals for psychiatric or substance abuse treatment. YA youth are predominately self-referred, but a small proportion of youth (<5%) have been referred by Harris County Juvenile Probation Department, although none of the youth in this study were currently facing criminal charges.

Procedures

The surveys (see the "Materials" section) were administered by the YA staff, under the supervision of a licensed social worker and a neuropsychologist during one of the community events held at the YA Activity Hall. A booth was set up near the door of the activity hall. Each youth had the opportunity to approach and ask questions and to volunteer to take the survey. No compensation was offered, and participation was completely

voluntary. When the survey was completed, the youth dropped it into a slot in a closed box. No exclusions were made for participants, and the data collected comprises responses from the 65 youth who completed the survey (of approximately 90 youth who attended the activity).

Materials

UCLA PTSD Reaction Index Trauma Exposure Screen. Although the original topics queried were preserved, the UCLA PTSD Reaction Index Trauma Exposure Screen (Pynoos, Rodrigues, Steinberg, Stuber, & Frederick, 1998) was modified slightly to reflect the circumstances of the population tested. Modifications included (a) adding an "age experienced" option for each traumatic event; (b) combining items of earthquake and disaster into one question; and (c) adding four new items: *being a refugee*, *being forced to do something bad*, *seeing a family member/friend arrested*, and *being arrested*. For the complete list of the 17 traumatic events queried, please refer to Table 2. It should be noted that this instrument measures the types of trauma events experienced but not the frequency of occurrence of individual types of trauma; therefore, it is more accurately a measure of the diversity of trauma experienced rather than the cumulative frequency. The scale, in its child and adolescent original nonaltered form, has a reliability coefficient of .84 (Steinberg, Brymer, Decker, & Pynoos, 2004). We used the adolescent version modified as previously explained, although our sample age range was 12–28 years old, with a mean age of 20 years. This version was used for all participants, including the young adults, because we wanted to ensure that inner-city adolescents could comfortably understand the questions.

The PTSD Checklist—Civilian Version (PCL-C). The PTSD Checklist—Civilian version (Weathers, Litz, Herman, Huska, & Keane, 1993) is a highly reliable, validated (Andrykowski, Cordova, Studts, & Miller, 1998) self-report rating scale for assessing PTSD available in the public domain. The PCL comprises 17 items, each with a Likert score of 0–5 for severity of symptoms, corresponding to later versions of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*) symptoms of PTSD (APA, 2000) that are sorted into symptom clusters of B symptoms (thought intrusions and reliving the event), C symptoms (avoidance/emotional numbing symptoms), and D symptoms (hyperarousal, hypervigilance symptoms). It can be used as a dimensional measure of PTSD symptom severity, which enables measurement of the severity of individual PTSD symptom clusters and cumulative PTSD symptom burden severity, with a cutoff score representing a PTSD diagnosis. For the PTSD cluster B symptoms, there are five items queried; seven items are queried for the cluster C symptoms; and five items are queried for cluster D symptoms. The scale has a test–retest reliability of .96 and high validity as determined with correspondence to widely used instruments measuring traumatic events. There is some controversy about the appropriate cutoff score for civilians, with cut-points ranging from 30 to 50 out of 85 (Dobie et al., 2002). For this study, we used a cutoff point of 35 because studies of civilians and youth support the use of a lower cutoff to improve the sensitivity of the measure (Andrykowski et al., 1998; Hou et al., 2011).

Methods for Classifying Trauma

To address specific hypotheses, we grouped trauma types into composite classes, a method used previously in similar studies (e.g., Muller et al., 2000). We were interested

in the distinction between domestic (Domestic) and community (Community) trauma as well as the distinction between witnessed (Indirect) and direct (Direct) trauma. The Muller et al. study (2000) used a structured interview that also examined these four classes of trauma (Selner-O'Hagan, Kindlon, Buka, Raudenbush, & Earls, 1998). Unlike our trauma inventory, their instrument also made subtype distinctions of Community Indirect, Community Direct, Domestic Indirect, and Domestic Direct and analyzed these separately and in combinations (Muller et al., 2000), which we were not able to do because of a smaller sample size. There are no preexisting subscales in the version of the UCLA PTSD Reaction Index we modified to reflect the circumstances of the population tested; thus, to our knowledge, no psychometric data exists for this grouping. We grouped trauma scale events into composite classes of Community and Domestic trauma at our discretion (and based on available literature) and then regrouped events into composite classes of Indirect and Direct trauma. See Table 1 for individual traumatic events included in each class.

In addition, we analyzed a total trauma class (Total), which comprises all traumas reported, including those that did not fall neatly into the other classes (e.g., refugee, war, medical treatment).

Community and Domestic Trauma Composite Classes. For the Domestic trauma composite, items were chosen based on definitions of domestic violence provided by the U.S. Department of Justice (DOJ, 2013). We deemed that items worded as taking place ". . . at home . . ." were more likely to constitute events that would qualify as domestic violence. The trauma question worded as "being forced to have sex, seeing someone

TABLE 1. Individual Traumatic Events Included in the Trauma Composite Classes

Trauma Composite Class	Individual Traumatic Events by Class
Community	1. Forced to do bad, like gang 2. Beaten up/shot at/threatened 3. Witnessing beaten up/shot at/killed 4. Arrested 5. Witnessing arrest of family/friend
Domestic	1. Forced sex/witnessing/threatened 2. Hit/punched/kicked at home 3. Seen hit/punched/kicked at home
Indirect	1. Dead body (not funeral) 2. Seen hit/punched/kicked at home 3. Witnessing beaten up/shot at/killed 4. Witnessing arrest of family/friend
Direct	1. Forced sex/witnessing/threatened 2. Painful/frightening medical treatment 3. Hit/punched/kicked at home 4. Beaten up/shot at/threatened 5. Arrested

Note. Each trauma composite class consisted of individual traumatic events that best characterized the class. The traumatic events were not mutually exclusive to each class.

forced to have sex, or being threatened with forced sex" was grouped in our Domestic trauma class because of the nature of sexual trauma, and because it is frequently inflicted by someone well-known to the victim in a home environment (Bechtel & Podrazik, 1999). So, although about 30% of forced sex occurs with strangers within the adolescent and young adult population (Snyder, 2000), in our study we followed the precedent set by Cooley-Strickland et al. (2009) and Truman and Rand (2010) and the National Gang Threat Assessment (DOJ, 1998) in categorizing it as Domestic. Similarly, witnessing forced sex is most commonly inflicted upon juveniles and children by known perpetrators in the home (Snyder, 2000). Please see Table 1 for individual items in the Domestic trauma composite class.

Items were included in the Community composite if they were likely to happen on the streets or among gangs, and the specific location of trauma was not indicated (please see Table 1 for the specific items). Prevalence studies of violent assault and gang activity helped to guide our decision on these items. For example, a 1995 study of homicides in New York City revealed firearms were cause of death in 80.3% of street homicides and 49.6% of homicides in the home. More homicides occurred in the streets and other outdoor places (49.6%) than in victims' homes (19.3%), with street victims more likely to be male and between the ages 15 and 24 years (Tardiff et al., 1995). It is estimated that as much as 60% of crime is gang related in Texas inner-city communities; Houston has one of the highest concentrations of gang activity in Texas (Texas Fusion Center, Intelligence & Counterterrorism Division, & Texas Department of Public Safety, 2010). Gang members are most likely to be adolescents or young adults, and account for more than 60% of violent crimes (Howell, Egley, Tita, & Griffiths, 2011), with crimes less likely to involve rape and more likely involve assault, robbery, and homicide (Texas Fusion Center, Intelligence & Counterterrorism Division, & Texas Department of Public Safety, 2010). In conclusion, we determined that there is a greater likelihood that our inner-city youth would observe or experience arrests and firearm assaults because of community violence rather than domestic violence.

Indirect and Direct Trauma Composites. The Indirect trauma composite included four items from the Trauma Screen that specified "seeing" an event. Direct trauma included five items from the Trauma Screen that indexed direct victimization of the subject in isolation rather than as a group member. The wording of the rape item on the Trauma Screen is weighted more toward directly experiencing rape or the threat of rape, so we included it in the Direct trauma composite. Please see Table 1 for specific items.

Total Trauma. Total trauma included all 17 items on the Trauma Screen. These items are listed in Table 2.

Data Analysis Methods

Our primary interest was in determining if different types of trauma give rise to different patterns of PTSD symptoms. Because several types of trauma may co-occur in individuals (especially in this population), we attempted to isolate effects of each class of trauma on PTSD symptoms by using an exclusionary approach to analysis. This approach entailed considering two broad domains: environmental factors (comprising Domestic or Community trauma) and proximity (comprising Indirect or Direct trauma). The exclusionary approach entailed including in our analyses only individuals who had experienced only a single class of trauma (either Domestic or Community in the environmental domain or either Indirect or Direct in the proximity domain). In addition, we analyzed the data using an inclusionary approach, in which data from participants was included if he or she had

TABLE 2. Incidence of Traumatic Events by Percentage Sample Experienced and Gender Difference Statistics

Traumatic Event (N = total (male + female + unspecified)/n = female/n = male)	# Endorsed[a]	Females %	Males %	p Value M vs. F	Effect Size (W)
Witnessing beaten up/shot at/killed (64/12/50)	63	33.3	70.0	.040	0.29
Beaten up/shot at/threatened (65/13/50)	55	61.5	54.0	.760	0.06
Hearing of violent death/serious injury of Family/friend (65/13/50)	55	84.6	48.0	.030	0.29
Witnessing arrest of family/friend (64/12/50)	55	50.0	56.0	.760	0.05
Arrested (65/13/50)	45	23.1	50.0	.120	0.21
Seen hit/punched/kicked at home (63/13/48)	43	53.9	39.6	.530	0.12
Other frightening/dangerous/violent (64/12/50)	38	41.7	36.0	.750	0.05
Hit/punched/kicked at home (65/13/50)	37	46.2	34.0	.520	0.10
Dead body (not funeral) (63/11/50)	35	54.6	30.0	.160	0.20
Disaster (65/13/50)	32	38.5	32.0	.750	0.06
Accident (65/13/50)	31	23.1	34.0	.520	0.10
Painful/frightening medical treatment (65/13/50)	29	46.2	26.0	.190	0.18
Forced to do bad, like gang (65/13/50)	15	15.4	14.0	1	0.02
Forced sex/witnessing/threatened (64/12/50)	13	50.0	2.0	$<.001$	0.51
War (65/13/50)	9	0.0	12.0	.330	0.17
Refugee (65/13/50)	6	7.7	6.0	1	0.03
Bomb (65/13/50)	6	0.0	8.0	.570	0.13

Note. Percentages of entire sample (males + females) who endorsed traumatic event items are ordered from most commonly endorsed to least. As indicated, sample sizes varied by item because those who circled neither "yes" nor "no" for the items were not included.
[a]Total number of subjects who endorsed the symptom, p value is for the comparison of percentage trauma experienced between genders. Effect size is Cohen's w. $w = 0.1$ is small, $w = 0.3$ is medium, and $w = 0.5$ is large.

experienced a particular type of trauma, whether or not he or she had experienced other types of trauma. For example, in analyses of symptomatology of Domestic trauma, all individuals who had experienced Domestic trauma were included in the analysis, whether or not they had also experienced Community trauma. We predicted that trauma classes (Domestic, Community, Indirect, and Direct) would better differentiate symptoms using an exclusionary approach, which would support our overall hypothesis that different types of trauma may produce different PTSD symptom profiles.

A secondary goal was to examine the effects of gender on relations of PTSD symptoms to trauma classes. However, females made up only 20% of the sample, so data were sparse when considered by gender and trauma type. Therefore, the analyses of these variables must be considered preliminary, so no correction was made for multiple comparisons. The nonparametric Fisher's exact test was used to examine associations between gender and other categorical variables (individual traumas), and Wilcoxon rank sum test was used for continuous variables (trauma score, PTSD symptom score). Because data for continuous outcome measures (e.g., symptom scores) were not normally distributed, Spearman correlation coefficients were used to test relations between continuous variables within or across gender. Because of the small proportion of females in the sample, we conducted analyses of the relation between symptom and trauma types on a sample comprising males only, and separately, on a sample comprising males + females, to gain some hint of the impact of gender on the relation.

RESULTS

Individual Traumatic Events

Table 2 displays types of individual traumas by gender. Significantly more males than females witnessed someone beaten/shot/killed, which was also the most common trauma for males. For females, hearing of traumatic death/injury of family member/friend was most common. Furthermore, females were significantly more likely to experience sexual trauma than males.

Total and Composite Classes of Trauma

The sample mean Total trauma was 5.6 items (out of 17 possible, median = 5.0, $SD = 3.7$), with 81% of the sample, calculated with inclusion of the two participants who did not specify gender ($n = 53/65$), reporting multiple (2 or more) traumatic events.

Posttraumatic Stress Disorder

Symptom Scores by Gender and Age. Of the 65 participant sample, calculated with inclusion of the 2 participants who did not specify gender, 49% ($n = 32$) met criteria of PTSD according to the PTSD symptom scale using a cutoff score of 35. The 31% ($n = 20/65$) of the total sample met *DSM-IV* criteria for PTSD, as derived from the PTSD scale symptom types and quantities endorsed, not by clinical interview. Because PTSD symptom presentations may vary with age, we performed a Spearman correlation analysis of age on symptoms and found no significant relation between PTSD symptoms and age, $r = -.06$, $p = .68$.

The Wilcoxon rank sum test showed that the average PTSD symptom score (raw) for females (mean score = 45, median = 43, *SD* = 17) was significantly higher than for males (mean score = 33, median = 30, *SD* =14; $z = 2.42$, $p = 0.02$).

Symptom Cross-Correlations. To estimate the degree to which symptom clusters overlapped in this sample, we performed cross-correlations. Intrusion symptoms were related to emotional numbing/avoidance: male-only group, $r = .67$; male + female group, $r = .71$. Intrusions also correlated with hyperarousal: male-only group, $r = .61$; male + female, $r = .68$. Finally, emotional numbing/avoidance was related to hyperarousal: male-only group, $r = .71$; male + female, $r = .70$. All cross-correlations among symptom clusters (intrusions, emotional numbing/avoidance, and hyperarousal) were significant at the $p < .001$ level, within male-only and male + female samples. Of note, the dimensional approach does not require that the patient experience symptoms in each symptom cluster but only that the degree of symptomatology from clusters reach a specified level. The moderate correlations shown here indicate some shared variance among the symptom clusters but illustrate that a considerable amount of variance is not shared.

Relations Among Symptom Types and Trauma Classes. Table 3 reports correlations among PTSD symptom types and classes of trauma using both inclusionary and

TABLE 3. Spearman Correlations (*r*) of Trauma Classes and PTSD Symptoms

Trauma Class (n = male-only/males + females)	Total Symptom	Intrusions	Numbing/ Avoidance	Hyperarousal
Total (n = 50/65)	**.40*/.41****	**.37*/.43****	.27^{ns}/**.30***	**.34*/.37***
Classes With Inclusionary Criteria (male-only/male + female)				
Community (n = 50/65)	**.37*/.31***	**.43*/.39***	.26^{ns}/.22^{ns}	**.32*/.26***
Domestic (n = 50/65)	**.37*/.41****	**.28/.35***	**.30*/.34***	.22^{ns}/**.30***
Indirect (n = 50/65)	**.30*/.31***	**.31*/.37***	.20^{ns}/.23^{ns}	.24^{ns}/**.25***
Direct (n = 50/65)	**.33*/.32***	**.34*/.35***	.24^{ns}/.22^{ns}	**.32*/.33***
Classes With Exclusionary (excl.) Criteria				
Community (excl. Domestic; n = 27/31)	**.46***/.30^{ns}	**.45***/.32^{ns}	.33^{ns}/.16^{ns}	**.44***/.31^{ns}
Domestic (excl. Community; n = 9/12)	.57^{ns}/.33^{ns}	.56^{ns}/.17^{ns}	**.65**/.46^{ns}	.57^{ns}/.35^{ns}
Indirect (excl. Direct; n = 12/15)	.48^{ns}/.39^{ns}	.51^{ns}/.41^{ns}	.47^{ns}/.38^{ns}	.47^{ns}/.47^{ns}
Direct (excl. Indirect; n = 11/14)	.21^{ns}/.25^{ns}	.38^{ns}/.37^{ns}	.31^{ns}/−.02^{ns}	.27^{ns}/.36^{ns}

Note. Spearman correlations (*r*; trauma classes, symptoms) analyzed with model constructs of males and total sample. Female sample size alone (n = 13) precluded meaningful analyses. Spearman correlations (corresponding to effect size): small = .1–.3; moderate = .3–.5; and large if >.5. All trends $p < .06$ are in boldface. ^{ns} = nonsignificant associations. *$p < .05$. **$p < .001$.

exclusionary approaches. As might be predicted, the exclusionary approach appears to be more specific to relations between trauma classes and symptom types.

With classes of trauma using inclusionary analyses, Total and Domestic trauma showed significant correlations with all PTSD symptom types (intrusions, numbing/avoidance, hyperarousal). Using exclusionary analyses, Community trauma showed significant correlations with total symptoms, intrusions, or hyperarousal, but other composites did not, although Domestic trauma showed a marginally significant ($p = .05$) correlation with intrusions/hyperarousal.

The most apparent symptom pattern among classes of trauma was the significant association of emotional numbing/avoidance with Domestic trauma and Total trauma, but not with other trauma classes. This pattern was observed with an inclusionary approach but failed to reach significance with the exclusionary approach, probably because of sample size, although the effect size was large. Emotional numbing was not associated specifically with Community, Indirect, or Direct trauma.

Intrusions and hyperarousal were significantly associated with all trauma classes with the inclusionary approach. When we used an exclusionary approach, intrusions and hyperarousal were only related to Community trauma.

The other clear PTSD symptom pattern was that intrusion symptoms and hyperarousal symptoms frequently occurred together, but the pattern was slightly asymmetrical, with intrusion symptoms significantly correlating with some trauma classes that hyperarousal did not.

DISCUSSION

Overall Rates of Trauma and PTSD

The youth in our sample experienced a high amount of trauma, consistent with rates of other inner-city youth populations. For example, Breslau et al. (2004) surveyed various traumatic events among a large inner-city group of 1,698 participants with average age of 21 years, and, on average, 4.8 traumatic events per participant were endorsed, similar to our sample's 5.0 events per participant. Similarly, 81.0% of our participants reported two or more traumas as compared to Breslau et al.'s 84.2%. Also, types of trauma in our study corresponded closely to reports in the Breslau et al. study and other studies of similar groups (e.g., Kliewer & Sullivan, 2008).

Although our study does not compare our urban, low-income, and minority population with other populations such as suburban, high-income White populations, it has been reported that there is a greater exposure to community violence in urban, low-income, and minority populations. For example, a study on school-associated student homicides (Kaufman et al., 2012) found that most homicides occurred in urban areas, with Black and Latino offenders and victims, with high incidence of poverty, and with male-on-male violence driven by gang-related motives. Breslau et al. (2004) showed significantly higher risk of assaultive violence among inner-city males as compared to a previous study of suburban males (Breslau, Davis, Andreski, Peterson, & Schultz, 1997).

Almost half of the youth in our sample (49%) met criteria for PTSD with a cutoff score of 35 on the PCL-C (Weathers et al., 1993), and 31% of our sample met diagnostic criteria for PTSD using the *DSM-IV* criteria, as applied to the PCL-C survey. The Breslau et al. (2004) study of inner-city youth showed a lifetime prevalence of PTSD to be 7.1%,

which they determined by interview. Kessler et al. (1995) surveyed multiple ages and sites across the United States and found that in youth ages 15–24 years, male PTSD lifetime prevalence was 2.8%, whereas female lifetime prevalence was 10.3%, with total lifetime prevalence of all ages of 7.8%–8.4% (Kessler et al., 1995). However, in a sample of 428 homeless adolescents from multiple cities, the PTSD lifetime prevalence was 36.0% using a diagnostic interview (Yoder et al., 2008). These studies illustrate that PTSD rates may vary among communities depending on local conditions and measurement factors. Our PTSD rates could have been particularly high because of the nature and situations of youth motivated to join the YA organization. For example, youth who have sustained multiple or chronic trauma may be more likely to seek help in such organizations as YA, which would account for the high level of PTSD symptoms observed. Also, these data support the view that PTSD symptoms increase with diverse trauma experiences. Similar findings have been reported in other studies (Cloitre et al., 2009; Kilpatrick, Saunders, & Smith, 2003).

Gender Differences

We found rates of three of the composites (Community trauma, Direct trauma, and Indirect trauma) did not differ significantly by gender. However, females reported significantly more Domestic traumas than males in this study. In particular, significantly more females than males reported forced sex/witnessing/threatened with forced sex, consistent with Breslau et al. (2004). These findings also correspond to statistics regarding domestic trauma and females in the United States (CALCASA, 2008). However, because of sample size, our results regarding gender must be interpreted with caution. Our finding that females experienced Community trauma in amounts statistically similar to males could be interpreted as suggesting males and females spend a similar amount of time in the community, but at home females are more often the targets of violence than males. However, females may be more likely to report some or all classes of violence than males. For example, either males or females may underreport or overreport compared to their actual experience. Underreporting could occur in the context of worse memory in general, or for the specific events. Overreporting could be caused by cognitive distortions or altered memories, potentially from events with high emotional impact.

Concerning gender and overall rates of trauma, our study found no significant gender difference in rates of trauma. Gender comparisons of overall trauma vary among studies but have been infrequently examined in studies of inner-city youth. One study that did look at gender differences (Breslau et al., 2004) found that males reported significantly more traumatic events overall than females, which differs from our findings of similar rates of Community trauma among males and females. This difference may be speculated to arise from different instruments used or ethnic or cultural differences arising from different geographical locations. Other studies are consistent with our data in reporting minor or no gender differences in rates of trauma (Breslau et al., 1997; Cottler, Nishith, & Compton, 2001). In general, gender differences in trauma burden among inner-city youth are neither well studied nor understood.

Although females in our study did not differ from males in reporting cumulative trauma, they had significantly higher PTSD scores than males. Unfortunately, our sample was too small to explore effects of gender on specific instances of trauma and PTSD symptoms. However, it may be hypothesized that females in this study had higher PTSD scores either from a greater susceptibility to PTSD or from the greater number of Domestic traumas

endorsed in this study. As far as individual traumatic events, females endorsed significantly more hearing of violent death/serious injury of family/friend and forced sex/witnessing/threatened than males. It is possible that these particular events could have an impact on greater PTSD symptoms, although this was not measured in this study. Domestic trauma, especially sexual trauma, because of its private nature, may produce more PTSD symptom severity according to some studies (Dorahy et al., 2009; Rosenthal et al., 2006). Sexual assault itself, even if not in the home environment, has been shown to increase the probability of developing PTSD. Research demonstrates that females have higher rates of PTSD than males in general adult populations when comparing both sexes on their rate of trauma exposure (Kessler et al., 1995). However, inner-city youth populations are less well-understood because the overall rate of trauma compared among genders is often not calculated. Breslau et al. (2004) showed that among inner-city youth, the risk of developing PTSD following any trauma did not differ significantly between males and females. This study also found that females had significantly higher probability of developing PTSD from assaultive violence (e.g., rape and sexual assault). However, symptom burden was not measured by Breslau et al., making it only somewhat applicable to the present investigation.

Relation of Specific PTSD Symptom Types to Trauma Classes

Using a dimensional approach to PTSD, we examined relations of trauma class to intrusions, emotional numbing/avoidance, and hyperarousal symptoms. Consistent with predictions, different trauma classes produced unique symptom correlations and more differentiated symptom patterns when using the exclusionary analysis approach. Emotional numbing correlated only with Domestic trauma and Total trauma. Also, when we examined Domestic trauma in a more isolated manner with the exclusionary approach (i.e., excluding those with Community trauma), Domestic trauma had a more narrow symptom profile of a marginal correlation with emotional numbing/avoidance. This suggests that Domestic trauma may differ from Community trauma on some dimension to produce emotional numbing/avoidance.

One characteristic of domestic violence in general is its intimate nature because perpetrators are often known to the victim (Catalano, 2007). One study that looked at interpersonal strain in relation to PTSD symptoms found a stronger association of perceived lack of support from friends and romantic partners within patients who displayed emotional numbing than with patients who showed other PTSD symptoms (Beck, Coffey, Foy, Keane, & Blanchard, 2009). Griffing et al. (2006) studied women in women's shelters and, similar to this study, examined the correlations between types of trauma and PTSD symptom clusters. Despite some methodological differences, this study and the Griffing et al. study agree in findings that different types of trauma produced unique symptom profiles.

In our study, intrusions and hyperarousal correlated only with Community trauma using both inclusionary and exclusionary criteria. In particular, intrusions and hyperarousal were related to Community trauma but not Domestic trauma (unless participants had also experienced Community trauma), suggesting that Community trauma may play the greater role in engendering intrusion symptoms. Such findings of intrusions from Community traumas may be caused by susceptibility to sensory distortion or dissociation (Holmes & Bourne, 2008) and may be influenced by racial or ethnic differences. For example, some investigators have shown that positive symptoms of PTSD (intrusions and hyperarousal) are more prevalent in Hispanics than in other ethnic groups (Marshall, Schell, & Miles, 2009).

It may be speculated that intrusions and hyperarousal may occur more with Community trauma because of the greater unpredictability of violence in the community. That is, these incidents often involve more unfamiliar people and occur over a larger area than is typical for domestic violence. One may have to be extra vigilant to survive in a violent community, making hyperarousal potentially adaptive in this environment. However, this hypothesis remains speculative until addressed by research.

We observed a unique relationship between intrusion and hyperarousal symptoms. Specifically, all trauma classes that showed a correlation with hyperarousal symptoms also showed, without exception, correlations with intrusions. However, the relationship was asymmetrical in that not all trauma classes showing intrusion symptoms also showed hyperarousal symptoms. This suggests a possible dependence of hyperarousal on intrusions (McWilliams, Cox, & Asmundson, 2005), although the small sample size here requires further studies to confirm the relation.

We found no differences in impact of indirect and direct traumas on symptom types, with both proximities of trauma demonstrating similar relations to PTSD symptoms. However, this must be interpreted with caution because of small sample size and the paucity and inconsistency of other reported studies. For example, Muller et al. (2000) studied 65 high-risk, institutionalized adolescents and found no differences in the effects of direct versus indirect trauma on PTSD diagnosis. In contrast, and counterintuitively, Ward et al. (2001) studied 103 adolescents in South Africa and found that overall PTSD symptom correlated with witnessing violence perpetrated by a stranger but not with directly experiencing violence at the hands of a stranger.

Research and Policy Implications

Our data support a more fine-grained view of PTSD than that presented in the *DSM-IV*. This view encompasses various manifestations of symptom types and severities from which functional impairment may occur. The current *DSM-IV* criteria may not be sensitive enough to fully capture the PTSD symptoms in individuals with significant or chronic psychological distress who do not meet criteria for all three symptom types (Stein, Koverola, Hanna, Torchia, & McClarty, 1997). Indeed, other research has indicated that, in youth with chronic lifetime trauma, poor psychosocial functioning and distress are equal in symptom severity, even if all three PTSD symptom types are not present (Carrion et al., 2002). In our study, inner-city youth appear to have elevations in different symptom types depending on the kind of trauma experienced. For example, Community trauma only correlated significantly with two out of three symptoms clusters in our study. It is possible for inner-city youth to have significant impairment from overall PTSD symptom burden but to be underdiagnosed and treated because of meeting criteria in only two out of three symptom types of the *DSM-IV*.

It is important to address the larger implications of trauma and PTSD in the inner-city population. The diverse sequelae of trauma may not only impact success of inner-city youth themselves, but it can also impact future generations. This creates a cycle of violence and poverty in inner-city communities through generations to which PTSD may contribute. The current findings suggest that domestic violence may be a significant problem among inner-city females in particular and emphasize the need for education and interventions that specifically target this population. Furthermore, the data suggest that programs aimed at reducing community-based trauma may be less effective for those adolescents who are experiencing trauma within the home setting.

This study provides evidence that organizations such as YA, where participants in this study were surveyed, are in a strategic position to provide interventions for youth with PTSD and other sequelae of trauma. Studies of the ability of similar organizations to mediate the impact of PTSD symptoms or other sequelae of trauma are critically needed for strategic implementation of resources to address PTSD and functional outcomes of inner-city youth.

CONCLUSIONS, LIMITATIONS, AND FUTURE DIRECTIONS

Limitations of this study included the small number of females that participated, and the use of the *DSM-IV* symptom criteria for PTSD, which are currently under debate (Asmundson et al., 2000; Buckley, Blanchard, & Hickling, 1998; Taylor, Kuch, Koch, Crockett, & Passey, 1998). Although preliminary analyses established that there were no effects of age in the current sample, the wide age range of the present investigation may limit the specificity of our findings. The trauma class design is another potential limitation. The item queried of "forced sex/witnessing/threatened forced sex" was included in classes of Domestic trauma and in Direct trauma, and its inclusion in these categories, and not Community or Indirect trauma, could be debated (please see the "Methods" section for a detailed rationale). Although the instrument we used did not allow for a more stringent classification, a more informative design would use instruments with separate items for dimensions of sexual violence (Cooley-Strickland et al., 2009; DOJ, 1998; NCCEV, 2006).

More studies are needed to analyze the effects of PTSD symptom types and trauma types on behavior and functional outcome, and especially with regard to complex PTSD. These studies would help to further elucidate mechanisms of PTSD symptom types as well as enable subsequent mental health and behavioral interventions to help inner-city youth function successfully in school and daily living.

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