Clinical and Functional Correlates of Posttraumatic Stress Disorder in Urban Adolescent Girls at a Primary Care Clinic

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ABSTRACT

Objective: To identify clinical and functional correlates of posttraumatic stress disorder (PTSD) in trauma-exposed urban adolescent girls. **Method:** Ninety female adolescents aged 12 to 21 years (mean 17.3 years) who presented for routine medical care at an adolescent primary care clinic were assessed with self-report questionnaires and interviews for trauma exposure, posttraumatic stress symptoms, other psychopathology, and psychosocial, family, and school function. **Results:** Ninety-two percent ($n = 83$) endorsed at least one trauma. Witnessing community violence (85.6%) and hearing about a homicide (67.8%) were the most common traumatic events endorsed. Twelve (14.4%) and 10 (11.6%) traumatized girls met *DSM-IV* symptom criteria for full and partial PTSD, respectively. Compared with traumatized girls without PTSD, girls with PTSD were significantly more depressed, used more cigarettes and marijuana, and were more likely to have failed a school grade, been suspended from school, or been arrested. **Conclusions:** Urban adolescent girls are exposed to multiple types of trauma. Whereas most develop at least one posttraumatic stress symptom, girls who meet full symptom criteria for PTSD show evidence of other psychopathology, increased cigarette and marijuana use, and poorer school performance. Further research is needed to identify and treat inner-city girls with PTSD. *J. Am. Acad. Child Adolesc. Psychiatry,* 2000, 39(9):1104–1111. **Key Words:** posttraumatic stress disorder, adolescents, girls.

Inner-city youngsters are more likely than middle-class youngsters living in suburban or rural areas to be the victims of or witnesses to community-based violence (Boney-McCoy and Finkelhor, 1995; Gladstein et al., 1992). Several community-based studies have reported that more than 80% of inner-city adolescents have seen someone physically assaulted, 40% have seen someone shot or stabbed, and almost 25% of youngsters have witnessed a homicide (Bell and Jenkins, 1993; Schubiner et al., 1993; Schwab-Stone et al., 1995).

Compared with their male counterparts, female adolescents are less likely to witness community violence or be the victim of a violent crime. However, they are more likely to experience other types of highly traumatic events such as sexual assault (Boney-McCoy and Finkelhor, 1995; Cuffe et al., 1998; Giaconia et al., 1995). In addition, adolescent girls are 2 (Cuffe et al., 1998) to 6 times (Giaconia et al., 1995) as likely as adolescent boys to develop posttraumatic stress disorder (PTSD) after exposure to a traumatic event. Although most traumatized urban girls do not seek treatment from mental health providers, they do seek general medical care, including reproductive health services. Thus surveying female adolescents in primary care settings for trauma exposure and posttraumatic stress symptoms may be an effective means of identifying high-risk youngsters who have been exposed to community- and family-based forms of violence. The identification of posttraumatic stress symptoms and other psychopathology in adolescent girls can lead to timely psychiatric intervention at a critical stage in development as teenagers transition into young adulthood.

The psychological effects of chronic community- and family-based violence in children and adolescents are

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diverse and include the development of nonspecific symptoms of psychological distress (Richters and Martinez, 1993), depression (Freeman et al., 1993), aggressive behaviors (Singer et al., 1995), reduced expectations about the future (Schwab-Stone et al., 1995), as well as posttraumatic stress symptoms (Fitzpatrick and Boldizar, 1993; Horowitz et al., 1995). In this report we focus on the assessment of PTSD and its impact on adolescent girls' psychosocial and academic functioning.

There are several reasons for our interest in PTSD among inner-city adolescent girls. First, despite more than a decade of research on the scope and consequences of exposure to traumatic stress in combat veterans, rape survivors, survivors of natural disasters, and adult survivors of childhood abuse, comparatively little research has focused on adolescent girls, as a traumatized population, or on the phenomenology of their posttraumatic stress responses to community- and family-based violence. Epidemiological studies of adolescents and young adults have reported lifetime prevalence rates of PTSD ranging from 2% (Cuffe et al., 1998) to 9.1% (Breslau et al., 1991). However, rates of PTSD symptoms are much higher in inner-city populations. In one survey of 221 male and female adolescent youngsters living in Chicago housing projects, Fitzpatrick and Boldizar (1993) reported a 27.1% prevalence for lifetime PTSD. In a previous study conducted in the same hospital clinic, surveyed in this study, Horowitz et al. (1995) reported a 67% prevalence of lifetime PTSD symptomatology in 79 female adolescents. However, in both studies, standardized PTSD assessments were not used and the clinical impact of PTSD was not considered.

Second, there has been comparatively little research on the functional implications of a diagnosis of PTSD in urban, inner-city girls. Stein and colleagues (1997) investigated the impact of full and subsyndromal or partial PTSD on work, school, family, and social functioning in a large community-based study of adults. Adults with full PTSD were significantly more impaired in their work and school functioning than adults without PTSD. Adults with partial PTSD were significantly more impaired, academically and vocationally, than adults without PTSD and equally impaired in their family and social functioning as adults with the full disorder. In another community-based study of 18-year-olds, Giaconia and colleagues (1995) showed that youths with PTSD were significantly more likely than nontraumatized youths to report behavioral and emotional problems, interpersonal difficulties, suicidal behavior, health problems, and academic failure. Adolescents with partial PTSD symptomatology were significantly more likely than their nontraumatized counterparts to endorse behavioral, academic, and health problems. Both of the above-mentioned studies were conducted in community samples, and comparisons in level of functioning were made between participants with PTSD and participants without trauma. This study will explore differences in psychosocial and academic functioning between traumatized inner-city girls, with full, partial, and few or no PTSD symptoms.

The purpose of this study was 4-fold. First, we investigated the types of community- and family-based violence that urban inner-city adolescent girls have experienced. Second, we assessed rates of full and partial current PTSD symptomatology. Partial PTSD has been defined in a variety of ways in the trauma literature (Stein et al., 1997). For the purposes of this study, we used a definition based on the National Vietnam Veterans Readjustment Study in which partial PTSD is diagnosed when at least 1 reexperiencing symptom, 1 avoidance symptom, and 2 hyperarousal symptoms are present (Kulka et al., 1990). Third, we investigated the clinical correlates of PTSD including rates of depression, anxiety, and substance use. Fourth, we examined the impact of PTSD on the adolescent's psychosocial and academic functioning such as school failure/suspension, teen pregnancies, arrests, special school awards or achievements, and number of clinic visits.

METHOD

Subjects

Over a 6-month period a nearly consecutive series of adolescent girls who registered for routine medical appointments at a hospital-based, adolescent primary care clinic were asked by their health care provider to participate in the study. This clinic provides general medical and reproductive health care to an urban population from inner-city New Haven, CT. The research protocol was approved by the Human Investigations Committee of the Yale University School of Medicine/Yale-New Haven Hospital. Ninety-nine percent of subjects who were asked to participate agreed to do so and were reimbursed financially for their efforts. Of the 90 participants, 78 (88%) were African American, 3 (5%) were Latino, 3 (3%) were white, and 6 (4%) were of other ethnicity. Participants ranged in age from 12.8 to 20.8 years (mean = 17.3, SD = 1.6 years). Eighty-three percent of girls attended high school and had a mean of 10 (SD = 1.3) years of education. Sixty-nine percent of girls lived with a single adult caretaker, usually their mother. Only 6% of the sample lived with their biological father. Forty-nine percent of the families received some form of financial assistance. There were no significant demographic differences between our study sample and the population of this clinic.

Procedure

Each participant completed a battery of standardized, self-report questionnaires after her medical appointment. Two master's-level research associates interviewed each participant to establish the chronology of the traumatic events that participants experienced. Eighty-three subjects endorsed a qualifying *DSM-IV* trauma (American Psychiatric Association, 1994) and were interviewed by the research associate for current symptoms of PTSD using the Child PTSD Checklist (Newman and Amaya-Jackson, 1996). Further information was obtained about each participant's level of functioning from her medical chart and primary care provider. The entire assessment took 1 hour.

Instruments

The Child Exposure to Violence Checklist (CEVC) (Amaya-Jackson, 1998) is a 33-item checklist adapted from the measure "Things I've Seen and Heard" (Richters, 1990). It uses a 5-point Likert scale ranging from "never" to "more than 10 times" to assess frequency of exposure to community violence. For this study, scoring criteria were modified to a scale of 0 to 2 (no exposure, happened once, happened more than once). Experiences sampled include being the victim of, witness to, and/or perpetrator of shootings, stabbing, homicide, and family violence. When 20 adolescent psychiatric inpatients were given the CEVC at 2 time points, 1 week apart, the CEVC had a test-retest reliability of $r = 0.83$ for witnessed community violence, $r = 0.84$ for witnessed family violence, and $r = 0.53$ for perpetration of physical assault (Fehon et al., 1999).

The Childhood Trauma Questionnaire (CTQ) (Bernstein and Fink, 1998) is a 28-item self-report questionnaire designed to assess 5 components of childhood maltreatment: sexual, physical, and emotional abuse and physical and emotional neglect. Items are rated on a 5-point Likert scale with responses that range from "never true" to "very often true." A principal components analysis of the CTQ in an adolescent psychiatric population showed that the 5 factors all had moderate to high internal consistency, with Cronbach α coefficients ranging from .81 to .95.

Interviewers then constructed a traumatic events time line with participants that recorded the age at which each event occurred and the participant's emotional response to the event. After ascertaining which event was the most "distressing or upsetting," interviewers administered the Child PTSD Checklist (Newman and Amaya-Jackson, 1996), a 28-item scale that asks participants to rate the degree to which each of the 17 symptoms of PTSD was present during the past month. This scale is derived from *DSM-IV* (American Psychiatric Association, 1994) criteria and uses a 4-point (0–3) Likert severity scale, corresponding to "not at all" to "all of the time." The checklist can also be used to generate a diagnosis of PTSD based on 3 possible symptom thresholds (i.e., presence of symptoms "some of the time," "most of the time," and "all of the time").

A subset of 23 girls were also interviewed with the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL), a semistructured diagnostic interview for PTSD and other Axis I psychiatric diagnoses (Kaufman et al., 1997). Using a conservative approach of a symptom threshold of "most of the time" for each endorsed symptom, there was 87% agreement between diagnoses of current PTSD on the Child PTSD Checklist and on the K-SADS-PL ($\kappa = 0.60$).

Depressive symptoms were assessed with the 21-item Beck Depression Inventory (BDI) (Beck and Steer, 1987), which measures cognitive, affective, motivational, and somatic symptoms of depression. For adolescent populations, the BDI has an internal consistency of 0.79, a 5-day test-retest reliability of 0.69, and a 0.67 correlation with clinical ratings of depression (Strober et al., 1981).

Symptoms of anxiety were assessed using the Multidimensional Anxiety Scale for Children (March et al., 1997), a 39-item, 4-point Likert format screening scale for anxiety in children and adolescents. There are 4 main factors: physical symptoms, social anxiety, harm avoidance, and separation anxiety. Three-week and 3-month test-retest reliability is excellent, and scales have been normed by gender and age.

Alcohol and drug use was assessed using the Personal Experience Screening Questionnaire (PESQ) (Winters, 1991), a 40-item checklist that screens for problematic adolescent alcohol and drug use. The questionnaire assesses substance use severity and the psychosocial impact of substance use, and scores are normed for male and female adolescents aged 12 to 18 years.

We used the Family Adaptability and Cohesiveness Scale (FACES III) (Olson et al., 1985) to measure current family functioning. The FACES III is a 20-item, 5-point, Likert format scale that measures a family's style of engagement and support. Two dimensions related to family functioning, namely, rigidity versus adaptability and cohesiveness versus disengagement, are obtained.

Adolescents were asked about "failing a grade or being left back" during the previous school year. They also were asked about suspensions, threatened suspensions, running away from home, arrests, and incarcerations. This information was obtained on the Life Events Questionnaire for Adolescents (LEQ-A), a 45-item checklist of both positive and negative life events developed by Project Competence at the University of Minnesota (Masten et al., 1994). Discrete, negative, dependent events (10 items) include school failure, school suspension, legal difficulties, incarceration, and pregnancy. As a corroborative source of information, each participant's primary care provider was asked whether any of the patients had dropped out of school or been arrested. Clinic records established the number of clinic visits for each of the participants and the number of participants who became pregnant in the year preceding the study.

Statistical Analyses

We used frequency counts and descriptive analyses to assess rates of trauma exposure and PTSD symptoms. Demographic, psychopathological, and family-based differences in girls with full PTSD, partial PTSD, and no PTSD were assessed with a series of one-way analyses of variance with Tukey post hoc comparisons and χ^2 tests. For these analyses we used a sample size of 83 subjects (those participants who reported an emotional response of extreme distress to at least one qualifying trauma). The dependent variable was PTSD status. Independent variables included demographic factors (such as age and grade); psychopathological variables (such as depression, anxiety, and substance use); trauma variables (such as age at onset of trauma, years since index trauma, number of types of trauma, and measures from the CTQ of prior abuse and neglect); and family variables (parental marital status, family adaptability and cohesiveness). To examine the relationship of PTSD to functioning, we used a series of χ^2 analyses with PTSD status as the grouping variable and individual items from the LEQ-A (such as school suspensions, school failures, arrests, and special achievements) and information from the clinic records and primary care providers (such as number of clinic visits and pregnancies) as each of the independent variables. All tests were 2-tailed with significance set at $p < .05$.

RESULTS

Direct and Vicarious Exposure to Trauma

Table 1 lists a range of community- and family-based traumas and shows the number and percentage of the entire sample who experienced each type of trauma once and more than once. The mean number of types of trauma

TABLE 1
Self-Reported Violence Exposure, Victimization, and Perpetration Among Urban, Inner-City, Adolescent Girls (N = 90)

	Never		Once		More Than Once	
	n	(%)	*n*	(%)	*n*	(%)
Witness to community violence	13	(14.6)	16	(17.7)	61	(67.7)
Stabbing	55	(61.1)	14	(15.6)	21	(23.3)
Shooting	40	(44.4)	22	(24.4)	28	(31.2)
Homicide	78	(86.7)	9	(10.0)	3	(3.3)
Heard about homicide	29	(32.2)	19	(21.1)	42	(46.7)
Witness to domestic violence	56	(62.2)	6	(6.6)	28	(31.2)
Adults hitting	61	(67.8)	6	(6.6)	23	(25.6)
Shooting/stabbing in home	80	(88.9)	6	(6.6)	4	(4.5)
Gun in home	69	(76.7)	5	(5.6)	16	(17.8)
Victim of physical violence	46	(51.1)	11	(12.3)	33	(36.6)
Physically assaulted	73	(81.1)	8	(8.9)	9	(10.0)
Shot/stabbed	86	(95.5)	4	(4.5)	0	(0)
Threatened with homicide	66	(73.3)	15	(16.7)	9	(10.0)
Physical abuse (I/F)[a]	66	(83.5)	9	(11.4)	4	(5.1)
Sexual assault victim	57	(63.3)	13	(14.4)	20	(22.3)
Inappropriate touch/kiss (I/F)	80	(88.9)	6	(6.6)	4	(4.5)
Forced genital contact (I/F)	86	(95.6)	2	(2.2)	2	(2.2)
Inappropriate touch/kiss (X/F)	63	(70.0)	17	(18.9)	10	(11.1)
Forced genital contact (X/F)	78	(86.7)	8	(8.8)	4	(4.5)
Perpetrator of violence	43	(47.8)	22	(25.5)	25	(27.7)
Hurt someone else	61	(67.8)	18	(20.0)	11	(12.2)
Use of gun/knife in fight	58	(64.4)	17	(18.9)	15	(16.7)
Sexual assault	84	(93.5)	3	(3.3)	2	(2.2)

Note: I/F = intrafamilial; X/F = extrafamilial.
[a] Seventy-nine subjects answered this question.

experienced was 3.02 (SD = 1.99, range = 0–10). The most common types of traumas were witnessing community violence (85.5%) and hearing about the homicide of a friend or family member (67.7%). In terms of community-based violence, 55.5% of girls reported witnessing a shooting, 38.8% a stabbing, and 13.3% a homicide. Only 4.5% of participants stated they had been shot or stabbed themselves, but 36% of them admitted to using weapons, 24% had been arrested, and 20% had spent time in jail during the preceding year. Rates of family-based violence were slightly lower. Thirty-two percent of participants stated that they had seen adults hit each other in the home. Sixteen percent of girls reported physical abuse. Eleven percent of girls stated that they had experienced at least one episode of inappropriate sexual contact by a family member, but 30% identified at least one episode of inappropriate sexual contact by someone outside of the family. Ten percent of girls reported that they had been raped.

Prevalence of Full and Partial PTSD

Twelve girls met symptom criteria for a diagnosis of current PTSD, which represents 13% of the total sample and 14.5% of the 83 girls who experienced a qualifying trauma. Ten girls met symptom criteria for partial PTSD. This represents 11% of the total sample and 12% of the 83 girls who had experienced a qualifying trauma. Fifty-one (61.4%) of 83 traumatized girls met current reexperiencing symptom criteria, 25 girls (30.1%) met avoidance symptom criteria, and 24 girls (28.9%) met hyperarousal symptom criteria. Table 2 outlines the percentage of girls who endorsed each of the *DSM-IV* (American Psychiatric Association, 1994) based PTSD symptoms.

The most common posttraumatic symptoms for the entire traumatized sample included, in descending order, psychological distress at reminders (B4) (75.6%), active attempts to avoid people or places linked to the event (C2) (69.5%), recurrent intrusive thoughts (B1) (65.1%), and hypervigilance (D4) (63.4%). Amnesia for the event, flashbacks, and nightmares were less common and occurred in 22.2%, 27.7%, and 29.3% of the traumatized sample, respectively.

Girls with PTSD reported significantly more types of trauma: mean number of traumas 4.7 versus 3.2 and 2.4 in the partial PTSD and no PTSD groups, respectively

TABLE 2
Percentage of Adolescent Girls Who Endorsed Current PTSD Symptoms (n = 83)

Symptom	Amount of Time Symptom Endorsed During Past Month			
	None	Some	Most	All
Reexperiencing (cluster B)				
B1 Intrusive thoughts	34.9	36.3	12.0	16.8
B2 Nightmares	70.7	25.6	2.4	1.2
B3 Reliving	72.3	19.3	6.0	2.4
B4 Psychological distress	24.4	39.0	13.4	23.2
B5 Physiological reactivity	57.3	32.9	3.7	6.1
Avoidance (cluster C)				
C1 Avoids thoughts	45.8	27.7	18.1	8.4
C2 Avoids people/places	30.5	22.0	23.2	24.3
C3 Amnestic	77.8	14.8	4.9	2.5
C4 Diminished interests	58.5	25.6	11.0	4.9
C5 Detachment/numb	51.2	34.1	9.8	4.9
C6 Restricted range of affect	64.6	23.2	4.9	7.3
C7 Foreshortened future	50.0	30.5	9.8	9.8
Hyperarousal (cluster D)				
D1 Sleep difficulties	58.5	26.8	9.8	4.9
D2 Irritability	45.7	24.1	14.5	15.7
D3 Concentration problems	57.3	28.0	12.2	2.4
D4 Hypervigilence	36.6	35.4	7.3	20.7
D5 Exaggerated startle	62.2	29.3	6.1	2.4

Note: Values are percentages. PTSD = posttraumatic stress disorder.

(F = 6.12, df = 2,82, p = .003). They also reported a significantly earlier age at onset of trauma: mean age = 9.0 versus 12.3 and 12.0 years in the partial PTSD and no PTSD groups, respectively (F = 3.09, df = 2,82, p = .05).

Girls with PTSD reported significantly higher rates of emotional abuse (F = 15.21, df = 2,82, p < .001) and physical abuse (F = 5.39, df = 2,82, p = .006) than girls with partial PTSD or girls without PTSD. Compared with girls without PTSD, girls with full PTSD reported significantly more childhood sexual abuse (F = 6.11, df = 2,82, p = .003) and physical neglect (F = 5.18, df = 2,82, p = .007). There were no significant group differences in perceived family cohesiveness or adaptability among the 3 groups (F = 0.65, df = 2,82, not significant [NS]; F = 0.20, df = 2,85, NS).

Clinical Correlates of PTSD

There were no significant differences in age (F = 1.31, df = 2,82, NS) or grade (F = 2.27, df = 2,82, NS) among the 3 groups.

Table 3 illustrates psychopathological differences between girls with full PTSD, girls with partial PTSD, and girls without PTSD. Girls with PTSD were significantly more depressed than girls with partial PTSD (t = 2.41, df = 20, p = .02) and girls without PTSD (t = 5.30, df = 72, p = .001). Girls with PTSD also scored significantly higher on the PESQ than girls without PTSD (t = 3.20, df = 72, p = .002). Girls with PTSD were significantly more likely to use nicotine (χ^2 = 9.63, df = 1, p = .001) and marijuana (χ^2 = 5.12, df = 1, p = .02), but not alcohol (χ^2 = 0.21, df = 1, NS), than girls without PTSD.

Functional Correlates of PTSD

Table 4 compares aspects of academic and general functioning in girls with PTSD, girls with partial PTSD, and girls without PTSD. Girls with PTSD were significantly more likely to fail a class or grade (χ^2 = 8.88, df = 1, p = .002), to be suspended from school (χ^2 = 6.76, df = 1, p = .009), and to have been arrested (χ^2 = 6.52, df = 2, p = .03) than girls with partial PTSD or girls without PTSD. There were no significant differences in the number of clinic visits among these 3 groups of girls (F = 0.23, df = 2,81, NS).

DISCUSSION

Our results demonstrate that the vast majority of these urban female adolescents have experienced at least one family- or community-based trauma. The majority of these girls have been exposed to multiple types of trauma. Rates of witnessing community violence, specifically shootings and stabbings, are in keeping with other studies of the prevalence of violence exposure in inner-city youths

TABLE 3
Clinical Correlates of PTSD in Trauma-Exposed Urban Adolescent Girls (n = 83)

	Mean	SD	F Value	Group Differences[a]
Depression (BDI)				
Full PTSD	21.3	10.9	14.87***	FP > PP,N
Partial PTSD	12.9	6.3		PP > N
No PTSD	7.9	7.4		
Trait anxiety (MASC)				
Full PTSD	49.4	11.7	3.02**	FP > N
Partial PTSD	46.3	19.1		
No PTSD	39.5	13.1		
Substance use (PESQ)				
Full PTSD	17.3	5.2	5.1***	FP > N
Partial PTSD	13.8	4.5		
No PTSD	11.9	5.4		

Note: PTSD = posttraumatic stress disorder; BDI = Beck Depression Inventory; MASC = Multidimensional Anxiety Scale for Children; PESQ = Personal Experience Screening Questionnaire.

[a] Pairs of groups that differ significantly (p < .05) using Tukey post hoc tests. Groups: FP = full PTSD (n = 12); PP = partial PTSD (n = 10); N = no PTSD (n = 61).

TABLE 4
Functional Correlates of PTSD in Trauma-Exposed Urban Adolescent Girls (n = 83)

Aspect of Functioning	n	%	χ^2	p	Post Hoc Difference[a]
School suspension					
Full PTSD	9	75.0	6.9	.03	FP > N
Partial PTSD	4	40.0			
No PTSD	20	32.8			
School failure					
Full PTSD	7	58.3	14.1	<.001	FP > N
Partial PTSD	5	50.0			
No PTSD	9	16.4			
Arrested					
Full PTSD	6	50.0	6.5	.03	FP > N
Partial PTSD	3	33.3			
No PTSD	10	16.3			
Ran away					
Full PTSD	2	16.6	2.1	NS	
Partial PTSD	1	10.0			
No PTSD	3	4.9			
A special achievement					
Full PTSD	8	66.6	.31	NS	
Partial PTSD	7	70.0			
No PTSD	42	68.8			
Pregnancy					
Full PTSD	2	16.6	.47	NS	
Partial PTSD	1	10.0			
No PTSD	12	19.7			

Note: PTSD = posttraumatic stress disorder; NS = not significant.
[a] Pairs of groups that differ significantly in the post hoc analyses (p < .05). Groups: FP = full PTSD (n = 12); PP = partial PTSD (n = 10); N = no PTSD (n = 61).

(Gladstein et al., 1992; Schwab-Stone et al., 1995). An alarmingly high percentage of girls, 67.7%, reported hearing about the homicide of a friend or family member. Although vicarious trauma was responsible for only 16% of the cases of PTSD in this sample, it is indicative of the chronic and endemic nature of the violence to which urban, inner-city youths are exposed.

Thirty-six percent of respondents reported using weapons to threaten other people, i.e., they were perpetrators of violence. This number may seem high; however, most of the participants did not view the use of weapons as aberrant or traumatizing. Youngsters who have been victimized by violence often develop coping strategies that involve aggression. The use of these strategies allows them to restore a sense of control in their lives (Schwab-Stone et al., 1995; Singer et al., 1995). This may explain, in part, why the number of crimes perpetrated by female adolescents rose by 23% between 1980 and 1993 (Office of Juvenile Justice and Delinquency Prevention, 1996). In a recent study of PTSD in female juvenile delinquents, Cauffman et al. (1998) reported that 65.3% and 48.9% of offenders met criteria for lifetime and current PTSD, respectively. Females were approximately 50% more likely to have current PTSD than an equivalent male population of juvenile offenders (Steiner et al., 1997). In the sample surveyed in the current study, girls with PTSD were significantly more likely to be arrested than girls without PTSD.

Fourteen percent of girls met full symptom criteria for current PTSD. This rate is lower than rates of PTSD reported in previous studies of inner-city youths (Fitzpatrick and Boldizar, 1993; Horowitz et al., 1995). However, these studies reported on lifetime rates of PTSD rather than current rates. Furthermore, we used a relatively high symptom threshold of "most of the time" to establish diagnostic criteria, and this decreased our prevalence rate of current PTSD. When we used a lower symptom threshold of "some of the time," our prevalence rate of current PTSD rose to 50%.

Compared with many studies, our definition of partial PTSD was relatively stringent (Giaconia et al., 1995; Stein et al., 1997). We used criteria outlined in the National Vietnam Veterans Readjustment Study, which requires that at least 4 symptoms be present (1 reexperiencing, 1 avoidance, and 2 hyperarousal). Once again this stringent definition could explain why our rate of partial PTSD, 11%, was slightly lower than rates reported for high-risk groups in other studies (Cauffman et al., 1998; Giaconia et al., 1995).

Clinical correlates of PTSD included comorbid depression, trait anxiety, and cigarette and marijuana use. Adolescents with lesser amounts of PTSD symptoms, i.e., those with partial PTSD, although not as depressed as girls with full PTSD, nonetheless, were significantly more depressed than traumatized girls without PTSD. From our cross-sectional data we cannot ascertain whether PTSD predisposes to depression and substance use or vice versa. Prospective studies are needed to answer these questions.

From a functional standpoint, girls with PTSD were significantly more likely to fail a course or grade, to be suspended from school, or to be arrested than girls without PTSD. While these findings do not imply causality, they do parallel those of Giaconia and colleagues (1995). It may be that PTSD symptoms such as insomnia, intrusive recollections, and poor concentration make it difficult to succeed in school. Neuropsychological testing may help better define specific cognitive deficits in these children. It is also possible that severe trauma and PTSD may lead to the use of externalizing behaviors that might contribute to higher rates of school suspensions and involvement with law enforcement.

Limitations

There are limitations to this study. First, our sample is not an epidemiologically defined sample. Subjects included girls who sought medical treatment at a hospital-based adolescent primary care clinic. They are, however, a non–psychiatric treatment-seeking group (only 2 girls had ever received any type of mental health service) and are representative of the clinic's population. We acknowledge that inner-city girls who do not seek medical treatment might be more likely to have experienced greater amounts of trauma and posttraumatic stress sequelae. We are planning to study this even higher-risk population through liaisons with community-based organizations and schools. Second, the study design was cross-sectional, making it impossible to determine the order of onset of other psychopathology in relation to PTSD. Prospective studies will be helpful in this regard. Third, we did not establish the rate of *DSM-IV* (American Psychiatric Association, 1994) PTSD based on a structured diagnostic interview. We used the Child PTSD Checklist, a psychometrically sound self-report questionnaire, that correlated highly with a K-SADS-PL diagnosis of current PTSD in a subset of participants.

Clinical Implications

Urban, inner-city minority girls are exposed to multiple types of community- and family-based traumatic events. The majority of girls have not sought and have not been offered any "official" form of mental health service. However, in addition to providing general medical care, primary care providers who work in these settings typically counsel youngsters about life problems in general and function as the sole source of health care for these youngsters.

In response to witnessing community violence or vicarious trauma (the most common types of traumas), most girls develop one or two symptoms of PTSD. Girls meeting full symptom criteria for PTSD are significantly more depressed and anxious and use more nicotine and marijuana than their traumatized counterparts. They report more school failure and suspension. School failure, truancy, and suspensions, therefore, might be behavioral markers of partial or full PTSD in populations at high risk for developing PTSD. Research and resources should be focused on the early identification and treatment of PTSD in urban, inner-city girls. Hospital-based and school-based primary care clinics might be one place to begin this work.

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Does Mothering a Doll Change Teens' Thoughts About Pregnancy? Judith Kralewski, RN, MSN, CPNP, Catherine Stevens-Simon, MD

Objective: To determine the effect of age on the efficacy of the computerized, infant simulator doll Baby Think It Over (BTIO) for increasing middle school girls' knowledge about the responsibilities of parenthood and discouraging plans for teen childbearing. We hypothesized: 1) 8th grade students would be less apt than 6th grade students to equate BTIO care with mothering because they would rationalize that their infant would be easier to care for than BTIO; and 2) BTIO would be a more effective teen pregnancy prevention program with 6th grade students than with 8th grade students. *Methods:* Nulliparous 6th ($n = 68$) and 8th ($n = 41$) grade girls attending an urban middle school in a predominantly lower socioeconomic, Hispanic, neighborhood were asked to care for BTIO for 3 days and 2 nights. Responses to a self-administered questionnaire were used to assess the girls' understanding of the responsibilities and difficulties associated with parenting, their feelings about the similarity of BTIO care and real infant care, and their childbearing intentions before and after caring for BTIO. *Results:* Only 32 (29%) of the 109 girls thought that real infant care would be like BTIO care. Although 8th grade students were less apt than 6th grade students to equate BTIO care with real infant care (17% vs 37%), 6th grade students were more likely than 8th grade students to endorse statements suggesting that real infant care would be easier than BTIO care (37% vs 24%). Multivariate analyses revealed that this was largely because 6th grade students found BTIO care more difficult than did 8th grade students. Also, regardless of age or grade, the more difficult a girl found it to care for BTIO than anticipated, the more likely she was to endorse statements indicating that it would be easier to care for her own infant than it had been for her to care for BTIO. Little learning about the difficulties of parenting took place during the study. On average, the 6th grade students did not find BTIO care more difficult than anticipated and the 8th grade students actually found it easier than anticipated. Finally, caring for BTIO had no affect on the intent of students to become teen parents; 13 (12%) of the 109 students wanted to be teen parents before they cared for BTIO and 16 (15%) wanted to be teen parents after they cared for the doll. *Conclusion:* The results of this study demonstrate that the propensity or people this age for rationalizing their own immunity to the nocuous aspects of potentially desirable situations (the personal fable of omnipotence) allows those who perceive parenthood to be attractive to overlook the negative aspects of any parenting experience they have. Pediatrics 2000;105(3). URL: http://www.pediatrics.org/cgi/content/full/105/3/e30.
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