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Robert L. Listenbee, Administrator

Beyond Detention

Even though research indicates that the majority of youth in the juvenile justice system have been diagnosed with psychiatric disorders, reports issued by the Surgeon General and the President's New Freedom Commission on Mental Health show that juvenile detainees often do not receive the treatment and services they need.

This bulletin series presents the results of the Northwestern Juvenile Project, the first large-scale, prospective longitudinal study of drug, alcohol, and psychiatric disorders in a diverse sample of juvenile detainees. Individual bulletins examine topics such as suicidal behaviors in youth in detention, posttraumatic stress disorder and trauma among this population, functional impairment in youth after detention, and barriers for youth who need to receive mental health services.

Nearly all detained youth eventually return to their communities and the findings presented in this series provide empirical evidence that can be used to better understand how to meet youth's mental health needs and provide appropriate services while in detention and after their release. The Office of Juvenile Justice and Delinquency Prevention hopes this knowledge will help guide innovative juvenile justice policy and create a better future for youth with psychiatric disorders in the justice system.

PTSD, Trauma, and Comorbid Psychiatric Disorders in Detained Youth

Karen M. Abram, Linda A. Teplin, Devon C. King, Sandra L. Longworth, Kristin M. Emanuel, Erin G. Romero, Gary M. McClelland, Mina K. Dulcan, Jason J. Washburn, Leah J. Welty, and Nichole D. Olson

Highlights

This bulletin examines the results of the Northwestern Juvenile Project—a prospective longitudinal study of youth detained at the Cook County Juvenile Temporary Detention Center in Chicago, IL. The authors discuss their findings on the prevalence of trauma and posttraumatic stress disorder (PTSD) among juvenile detainees and PTSD's tendency to co-occur with other psychiatric disorders.

Some findings include the following:

- Of the study sample, 92.5 percent of youth had experienced at least one trauma, 84 percent had experienced more than one trauma, and 56.8 percent were exposed to trauma six or more times.
- Witnessing violence, the most common trauma, was far more common in this study sample than in most community studies of youth and young adults.
- More than 1 in 10 detainees had PTSD in the year prior to the interview.
- Among participants with PTSD, 93 percent had at least one comorbid psychiatric disorder. Among males, having any psychiatric diagnosis significantly increased the odds of having comorbid PTSD.



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Each year there are approximately 2.11 million arrests of youth, accounting for 16 percent of all violent crime and 26 percent of all property crime arrests (Puzzanchera, 2009). On a typical day, approximately 81,000 youth are detained (Sickmund, 2010). The number of youth with psychiatric disorders in the juvenile justice system is a considerable public health problem. Two-thirds of males and three-quarters of females in juvenile detention have one or more psychiatric disorders (Teplin et al., 2002; Wasserman et al., 2002).

The related literature suggests that posttraumatic stress disorder (PTSD) may be more common in youth in the juvenile justice system than in community samples (Cauffman et al., 1998; Steiner, Garcia, and Matthews, 1997; Wasserman et al., 2002). PTSD is an anxiety disorder that may develop in response to traumatic events—or traumas—in which there is severe injury or the threat of death. Symptoms include flashbacks, avoidance of reminders, emotional numbing, and increased arousal (American Psychiatric Association, 1994).

Lifetime diagnoses of PTSD in community samples of youth and young adults range from 6.3 percent of youth (by age 18; Giaconia et al., 1995) to 2.8 percent of males and 10.3 percent of females (ages 15–24; Kessler et al., 1995). "Current" diagnoses (i.e., diagnoses active at the time of the assessment) are 3.5 percent among females ages 16–22 who had ever experienced a trauma (Cuffe et al., 1998).

Estimates of the prevalence of PTSD among youth in the juvenile justice system vary considerably, depending on sample type, the measure used, and the time frame assessed (i.e., within the past year, within the past month, or at the time of the interview) (Wasserman et al., 2002; Steiner, Garcia, and Matthews, 1997; Burton et al., 1994; Cauffman et al., 1998; Duclos et al., 1998). For example, estimates of PTSD are 2.3 percent among American Indian male detainees (past year; Duclos et al., 1998); 4.8 percent among male youth in "secure placement" (past month; Wasserman et al., 2002); 24.2 percent among male juvenile felons in "secure custody" (at the time of the interview; Burton et al., 1994); and 32.3 percent among "incarcerated" male youth (at the time of the interview; Steiner, Garcia, and Matthews, 1997). Far fewer data are available on females in the juvenile justice system. Duclos and colleagues (1998) found no cases of PTSD within the past year in 64 American Indian female juvenile detainees. In contrast, Cauffman and colleagues (1998) found that 47 of 96 incarcerated females (48.9 percent) had PTSD in the past 3 months.

PTSD often co-occurs with other psychiatric disorders (Giaconia et al., 2000; Brady, 1997; Jacobsen, Southwick, and Kosten, 2001). Comorbid disorders have an adverse impact on the prognosis and treatment of individuals with PTSD. Youth with PTSD and comorbid disorders have significantly more behavioral and health problems and more impaired interpersonal relationships than those with PTSD and no comorbid disorders (Giaconia et al., 2000). In a community sample, Giaconia and colleagues (1995) found that nearly four-fifths of those who ever had PTSD had one or more additional disorders. Studies of detained adolescent males in Russia (Ruchkin et al., 2002) and detained adolescent females in Australia (Dixon, Howie, and Starling, 2005) found that all of the detainees with PTSD had at least one additional, or comorbid, psychiatric disorder, such as depression, substance use disorder, or conduct disorder.

Unfortunately, most studies examining PTSD in youth in the juvenile justice system are too small in sample size (Steiner, Garcia, and Matthews, 1997; Burton et al., 1994; Cauffman et al., 1998), lack generalizability (Duclos et al., 1998), or lack sufficiently standardized diagnostic assessments (Burton et al., 1994) to generate reliable national estimates. To date, no large-scale study has examined the prevalence of trauma and PTSD across demographic subgroups that make up increasing proportions of the juvenile justice population—African Americans, Hispanics, females, and younger children. Furthermore, there is no known epidemiological study of detainees in the United States that has examined PTSD and comorbid psychiatric disorders.

PTSD is associated with severe functional impairment (Giaconia et al., 1995). Left untreated, PTSD may become chronic (Burger and Lang, 1998; Kessler et al., 1995; Terr, 1991), with enormous personal and societal costs (Kessler, 2000).

In this bulletin, the authors present the prevalence of PTSD and trauma among youth in detention, compare the prevalence of psychiatric disorders among those with and without PTSD, and examine the prevalence of PTSD among those with and without other psychiatric disorders.

Methods

This section provides a brief overview of the authors' methods. Additional, detailed information on the methodology can be found in Abram et al. (2003, 2004, 2007) and Teplin et al. (2002, 2003).

Participants and Sampling Procedures

Participants were part of the Northwestern Juvenile Project (NJP), a longitudinal study of 1,829 youth (ages 10–18) arrested and detained between November 20, 1995, and June 14, 1998, at the Cook County Juvenile Temporary Detention Center (CCJTDC) in Chicago, IL. The random sample was stratified by gender, race/ethnicity (African American, non-Hispanic white, Hispanic), age (10–13 years, older than 14 years), and legal status (processed as a juvenile or as an adult) to obtain enough participants to examine key subgroups (e.g., females, Hispanics, younger children).

The gender, age, and offense distributions of the CCJTDC detainees are similar to detained juveniles nationwide (Snyder and Sickmund, 2006). As in other urban facilities, most youth detained in the center belong to racial/ethnic minority groups. The CCJTDC population is 77.9 percent African American, 5.6 percent non-Hispanic white, 16 percent Hispanic, and 0.5 percent other racial/ethnic groups.

The authors chose the detention center in Cook County (which includes Chicago and surrounding suburbs) for three reasons:

- Nationwide, most juvenile detainees live in and are detained in urban areas (Pastore and Maguire, 2000).

ABOUT THIS SERIES

Studies in this series describe the results of statistical analyses of the Northwestern Juvenile Project, a longitudinal study of youth detained at the Cook County Juvenile Temporary Detention Center in Chicago, IL, between 1995 and 1998. The sample included 1,829 male and female detainees between ages 10 and 18. The data come from structured interviews with the youth.

Topics covered in the series include the prevalence of suicidal thoughts and behaviors among juvenile detainees, posttraumatic stress disorder and trauma within this population, functional impairment after detention (at work, at school, at home, or in the community), psychiatric disorders in youth processed in juvenile or adult court, barriers to mental health services, violent death among delinquent youth, and the prevalence of psychiatric disorders in youth after detention. The bulletins can be accessed from the Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) Web site, ojjdp.gov.

In addition to the funding that OJJDP provided, the research also was supported by the National Institute on Drug Abuse, the National Institute of Mental Health, the National Institute on Alcohol Abuse and Alcoholism, the Substance Abuse and Mental Health Services Administration (Center for Mental Health Services, Center for Substance Abuse Prevention, and Center for Substance Abuse Treatment), the Centers for Disease Control and Prevention (National Center for Injury Prevention and Control and National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention), the National Institutes of Health Office of Research on Women's Health, the National Institute on Minority Health and Health Disparities, the Office of Rare Diseases, the Office of Behavioral and Social Sciences Research, the U.S. Departments of Labor and Housing and Urban Development, the William T. Grant Foundation, and the Robert Wood Johnson Foundation. The John D. and Catherine T. MacArthur Foundation, the Open Society Foundations, and the Chicago Community Trust provided additional funds.

- Cook County is ethnically diverse and has the third-largest Hispanic population in the United States (U.S. Census Bureau, 2001). Studying this population is important because Hispanics are the largest minority group in the United States (U.S. Census Bureau, 2000).

- The detention center's size (daily census of approximately 650 youth, intake of 20 youth per day) ensured that a large enough pool of participants would be available.

The authors began collecting data on PTSD 13 months after sampling for the larger study began. Therefore, the final sample size for this study was 898 and was composed of 532 males (59.2 percent) and 366 females (40.8 percent); 490 were African American (54.6 percent), 252 were Hispanic (28.1 percent), 154 were non-Hispanic white (17.1 percent), and 2 were from other racial/ethnic groups (0.2 percent). Participants ranged in age from 10 to 18; the mean age was 14.8, and the median age was 15.

Detainees were eligible to be sampled regardless of their psychiatric morbidity, state of drug or alcohol intoxication, or fitness to stand trial. Participants were interviewed in a private area, almost always within 2 days of intake. Most interviews lasted 2 to 3 hours, depending on how many symptoms were reported.

Measures

The authors used the Diagnostic Interview Schedule for Children, version IV (DISC–IV; Shaffer et al., 2000), based on criteria from the American Psychiatric Association's (APA's) *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM–IV; APA, 1994), to assess PTSD. They also used DISC version 2.3, based on the APA's *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (DSM–III–R; APA, 1987) criteria, to assess the occurrence of the following psychiatric disorders in the last 6 months: affective disorders (major depressive episode, dysthymia, and manic episode); anxiety disorders (panic, separation anxiety, overanxious, generalized anxiety, and obsessive-compulsive); behavioral disorders (attention-deficit hyperactivity, conduct, and oppositional defiant); and substance use disorders (alcohol and drug abuse or dependence). At the time the study began, DISC version 2.3 was the most recent DISC available.

The PTSD module assessed whether youth had ever experienced any of eight traumatic experiences (listed in table 1). Participants then identified the event that was "the most difficult for you in your entire life." DISC–IV assessed PTSD diagnosis within the past year for this "worst" trauma. The data are based on youth's self-reports because it was not feasible to interview caretakers.

Findings

The study described in this bulletin has two main advantages over existing studies: (1) the inclusion of a stratified, random sample large enough to examine demographic characteristics and comorbid disorders, and (2) the use of a standardized measure of PTSD—DISC–IV.

Following is an overview of the results of the study.

Trauma

Overall rates. Table 1 shows that 92.5 percent of participating youth had experienced at least one trauma. Most (84.0 percent) had experienced more than one trauma. Significantly more males (93.2 percent) than females (84.0 percent) reported a traumatic experience. No significant differences in overall prevalence of trauma across race/ethnicity for males and females were found. Among both male and female detainees, significantly more youth ages 14–18 (94.2 percent of males; 86.5 percent of females) reported trauma than youth ages 10–13 (82.4 percent of males; 59.1 percent of females).

Specific traumas. As table 1 illustrates, the three most frequently reported traumas among both males and females were having seen or heard someone get badly hurt or be killed ("witnessing violence," reported by 74.9 percent of males and 63.5 percent of females), having been threatened with a weapon (reported by 59.3 percent of males and 47.3 percent of females), and being in a situation where they thought they or someone close to them was going to be badly hurt or die (reported by 53.5 percent of males and 49.1 percent of females).

Significantly more males than females reported having been in a bad accident. Significantly more females than males reported being forced to do something sexual. Among males, non-Hispanic whites were more likely to have been attacked physically or beaten badly than were African Americans. Among females, Hispanics were more likely to have been attacked physically or badly beaten than were African Americans.

Posttraumatic Stress Disorder

Table 2 shows that 11.2 percent of the sample experienced PTSD in the year prior to the interview. Although prevalence rates appeared to differ by gender and across race/ethnicity for males and females, none of these differences were statistically significant.

Precipitating traumas. The authors examined precipitating traumas for persons diagnosed as having PTSD. Among male participants, witnessing violence ("having seen or heard someone get hurt very badly or be killed") was the most frequent precipitating trauma for PTSD, significantly higher among males (58.9 percent) than females

(23.5 percent). Among female participants, thinking "you or someone close to you was going to be hurt very badly or die" was the most frequent precipitating trauma, significantly higher among females (27.8 percent) than males (9.5 percent). Other precipitating traumas were too rare to analyze further.

The authors also examined the age at which the participants had experienced their worst precipitating trauma. Most participants (88.7 percent) reported that their worst traumas occurred within 2 years prior to the interview. However, being forced to do something sexual—when that was identified as the worst trauma—occurred 5 years before the interview for most participants.

Prevalence of Comorbid Psychiatric Disorders Among Youth With and Without PTSD

Among participants without PTSD, 64 percent had at least one type of psychiatric disorder (affective, anxiety, behavioral, and/or substance use). However, among participants with PTSD, 93 percent had at least one type of comorbid

Table 1. Prevalence of Trauma by Gender and Race/Ethnicity

	Total (*n* = 898)	Males				Females				Analyses Comparing Gender[1]
		Total (*n* = 532)	African American (*n* = 247)	Non-Hispanic White (*n* = 107)	Hispanic (*n* = 177)	Total (*n* = 366)	African American (*n* = 243)	Non-Hispanic White (*n* = 47)	Hispanic (*n* = 75)	
Ever Traumatized										
Ever experienced any trauma listed	92.5	93.2	94.0	89.8	90.8	84.0	85.8	76.8	81.6	M > F
Mean number of traumas	14.6	14.6	15.2	14.7	11.9	14.2	13.2	11.6	19.4	NS
Type of Trauma[2]										
Ever been in a situation where you thought you/someone close to you was going to be hurt very badly or die? (*n* = 439)	53.2	53.5	54.2	52.7	50.8	49.1	47.0	53.7	55.2	NS
Ever been attacked physically, or beaten badly? (*n* = 332)	35.3	35.7	32.3	57.8	43.8	30.9	26.7	32.6	46.9	NS
Ever been threatened with a weapon? (*n* = 490)	58.4	59.3	59.2	75.0	54.6	47.3	47.9	36.8	50.6	NS
Ever been forced to do something sexual that you did not want to do? (*n* = 130)	4.4	2.4	2.2	5.3	2.9	29.6	31.0	27.4	24.9	F > M
Ever been in a bad accident, like a car accident? (*n* = 234)	33.1	34.0	35.5	38.2	26.1	21.9	19.0	33.3	27.9	M > F
Ever been in a fire, flood, tornado, earthquake, or other natural disaster where you thought you were going to die or be seriously injured? (*n* = 93)	10.5	10.5	11.4	8.0	7.1	10.6	10.7	8.4	11.4	NS
Other than on TV/movies, ever seen/heard someone get hurt very badly or be killed? (*n* = 595)	74.1	74.9	76.0	60.6	74.2	63.5	65.2	60.0	58.1	NS
Ever been very upset by seeing a dead body/pictures of a dead body of someone you knew well? (*n* = 224)	23.5	23.1	24.5	16.8	18.9	27.9	30.2	23.2	21.0	NS

Note: Data are given as percentages unless otherwise indicated. Each cell is weighted to reflect the population of the detention center. Because females comprise only 7.3 percent of the detention center population, overall rates cannot be computed by averaging the rates of male and female participants.

[1] M = male; F = female; NS = not significant.

[2] Participants may have experienced more than one trauma.



psychiatric disorder, 54 percent had two or more types of comorbid disorders, and 11 percent had all four types of comorbid disorders.

Males and females with PTSD were between 2 and 3.7 times more likely to have any substance use disorder, alcohol use disorder, and both alcohol and drug use disorders than did males and females without PTSD. Males with PTSD also were between 3.2 and 9 times more likely to have a comorbid psychiatric disorder, an anxiety disorder, or a drug use disorder compared to males without PTSD. Having PTSD did not significantly increase the odds of having an affective or behavioral disorder for either males or females. Males with PTSD were 3.4 times more likely to have a comorbid psychiatric disorder than females with PTSD.

Table 2. Prevalence of Posttraumatic Stress Disorder by Gender and Race/Ethnicity in Year Prior to Interview

Variable	PTSD (%)
Males (*n* = 531)	10.9
Race/Ethnicity	
African American (*n* = 247)	9.2
Non-Hispanic White (*n* = 107)	8.0
Hispanic (*n* = 177)	19.6
Age, years	
10–13 (*n* = 156)	6.8
14–15 (*n* = 151)	11.8
16+ (*n* = 224)	11.0
Females (*n* = 361)	14.7
Race/Ethnicity	
African American (*n* = 239)	14.7
Non-Hispanic White (*n* = 47)	10.5
Hispanic (*n* = 75)	16.9
Age, years	
10–13 (*n* = 33)	13.1
14–15 (*n* = 194)	12.8
16+ (*n* = 134)	17.9
Total (*n* = 892)	**11.2**

Note: Each cell is weighted to reflect the population of the detention center. Because females make up only 7.3 percent of the detention center population, overall rates cannot be computed by averaging male and female participants. This is also true for race/ethnicity and age.

Prevalence of PTSD Among Youth With and Without Specific Psychiatric Disorders

Among males, 15 percent of those with any psychiatric disorder had PTSD compared to only 2 percent of those with no other psychiatric disorder. Any affective, anxiety, behavioral, or substance use disorder significantly increased the odds of having comorbid PTSD, compared with males who had no other psychiatric disorder. Similarly, among females, 16 percent of those with any psychiatric disorder had PTSD compared to 11 percent of those with no other psychiatric disorder. Any alcohol use disorder and having both an alcohol and drug use disorder significantly increased the odds of having PTSD among females. No significant difference in prevalence rates of PTSD was found between males and females with specific psychiatric disorders.

Discussion of Findings

Trauma

Exposure to trauma is common among detained youth. More than 90 percent of the participants experienced at least one traumatic event; 56.8 percent were exposed six or more times. These findings are comparable to reports from smaller studies of youth in correctional facilities (Carrion and Steiner, 2000; Cauffman et al., 1998; Crimmins, 1999; Steiner, Garcia, and Matthews, 1997).

It is difficult to compare findings from NJP with community studies because findings vary, depending on the sample (e.g., urban, suburban, minority) and which traumas were assessed. However, the overall prevalence of trauma in NJP's participants is substantially greater than reported in most studies of youth and young adults (ages

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15–24), especially for severe and violent trauma (Breslau et al., 1991, 1998; Costello et al., 2002; Cuffe et al., 1998; Lipschitz et al., 2000; Singer et al., 1995). Also, witnessing violence, the most common trauma, was far more common in this study sample (63.5 percent of the females and 74.9 percent of the males) than in most community studies of youth and adults (4.9 percent to 35.6 percent, males only) (Breslau et al., 1991, 1998; Costello et al., 2002; Giaconia et al., 1995; Kessler et al., 1995). The authors' findings are most comparable to general population studies of urban teenagers (Lipschitz et al., 2000; Schwab-Stone et al., 1995, 1999; Shakoor and Chalmers, 1991; Singer et al., 1995).

Posttraumatic Stress Disorder

The authors found that more than 1 in 10 detainees (11.2 percent) had PTSD in the year prior to the interview. These estimates are lower than those reported by Burton and colleagues (1994) (24 percent, current disorder), Cauffman and colleagues (1998) (48.9 percent of females, past 3 months), and Steiner, Garcia, and Matthews (1997) (31.7 percent of males, current disorder). The authors used different instruments and methods than did Burton, Cauffman, and Steiner, which may explain the variation. Burton used a symptom checklist, whereas Cauffman and Steiner used the PTSD module of the *Psychiatric Diagnostic Interview, Revised* (Othmer et al., 1981), which assesses symptoms of PTSD independent of a particular trauma. In contrast, DISC (used by these authors) assesses PTSD based on the participant's perceived worst trauma.

On the other hand, the prevalence of PTSD in the authors' study sample was greater than that reported by Garland and colleagues (2001) (3.1 percent, past year), Wasserman and colleagues (2002) (4.8 percent, males only, past month), and Duclos and colleagues (1998) (1.3 percent, past year). The authors' findings may differ from these studies because of the point at which the sample was drawn. The authors sampled youth immediately after they were detained and before their adjudication hearings. Garland and Wasserman sampled *convicted* juveniles in secure placement. Duclos' findings may be different from those reported in the current study because that sample was composed only of American Indian detainees.

The prevalence of PTSD in this study sample (during the 12 months prior to the interview) exceeds *lifetime* estimates of PTSD reported in community samples, which range from 3.5 percent to 9.2 percent (Breslau et al., 1991, 1998; Giaconia et al., 1995; Kessler et al., 1995). More than half of the participants with PTSD reported witnessing violence as the precipitant in the current study. These findings likely reflect the fact that the study participants, like most juvenile detainees nationwide, live in urban areas that have high rates of violence (Duhart, 2000; Peeples and Loeber, 1994). These findings also are consistent with research linking traumatic victimization in childhood and subsequent psychosocial problems, such as delinquency, perpetration of violence, and drug use (e.g., Famularo, Kinscherff, and Fenton, 1992; Flannery, Singer, and Wester, 2001; Kilpatrick et al., 2003; Schwab-Stone et al., 1999; Widom, 1989).

Comorbid Disorders

Juvenile detainees with PTSD almost invariably have a comorbid disorder. In this study, 93 percent had at least one comorbid disorder and more than half had two or more types of comorbid disorders. The prevalence rate of drug use disorder—the most common comorbid disorder among youth with PTSD—is more than 2 times greater for females and 3 times greater for males than rates of drug dependence found in a sample of predominantly white high school seniors with PTSD (Giaconia et al., 1995). Rates of PTSD among detainees with substance use disorders in this study also are similar to or greater than rates among youth with substance use disorders receiving psychiatric or substance use treatment (Deykin and Buka, 1997; Garland et al., 2001).

Although comorbidity is a significant problem for both male and female detainees with PTSD, males were more likely than females to have comorbid disorders. The National Comorbidity Survey reported similar findings among adults (Kessler et al., 1995); however, the opposite

"More than 1 in 10 youth in the sample met criteria for PTSD in the year prior to the interview."

pattern was reported in a sample of chemically dependent adolescents (Deykin and Buka, 1997). This gender difference warrants further study.

Demographic Characteristics

Most of the demographic differences in the NJP sample corroborated prior investigations of community samples (Breslau et al., 1997, 1998, 1999; Giaconia et al., 1995; Kessler et al., 1995). Although male detainees were significantly more likely than female detainees to have experienced trauma, female detainees were as likely to have PTSD as were male detainees. In community samples, females are twice as likely as males to develop PTSD following exposure to trauma (Breslau et al., 1998; Kessler et al., 1995).

Like prior studies in the community, the authors found few racial/ethnic differences in rates of trauma or PTSD (Breslau et al., 1991; Kessler et al., 1995). Those few differences pertained to the *type* of trauma reported most frequently. In the NJP sample, African American males were more likely to have witnessed violence than were non-Hispanic whites, consistent with the high levels of violence exposure among inner-city, minority youth (Bell and Jenkins, 1991). Non-Hispanic white males were more likely to have experienced actual and threatened violence than were other males. Among females, Hispanics were most likely to have experienced violent victimization.

Study Limitations

The authors' findings are drawn from one site and may pertain only to youth in urban detention centers with a similar demographic composition. In addition, the findings are based on a sample of pretrial detainees and may not be generalizable to adjudicated juveniles serving sentences.

Also, because it was not feasible to interview caretakers, the data are subject to the reliability and validity of the youth's self-reports. Youth and their caretakers, however, are comparable reporters of youth's anxiety disorders (Jensen et al., 1999). Although arrest and detention may affect recall of traumas, a youth's recall of events may be less subject to the distortions of time than recall by adults (Breslau et al., 1998).

DISC, like most measures, probes for PTSD based on the single-worst trauma that the participant identified; hence, the authors were unable to estimate the age at onset of PTSD or the vulnerability to PTSD by *type* of trauma (Breslau et al., 1998).

Despite these limitations, the authors' findings have important implications for research on PTSD and for mental health policy.

Directions for Future Research

The authors suggest the following three directions for future research:

- **Increase studies of vulnerability to PTSD among high-risk youth.** More than 90 percent of the sample had been exposed to one or more traumas. More than 1 in 10 youth in the sample met the criteria for PTSD in the year prior to the interview. Future research must determine the relative risk of PTSD for types of trauma (e.g., witnessing murder, being shot, witnessing ongoing domestic violence, sudden loss of a loved one) among youth who are *frequently* exposed to trauma and violence, such as the study participants. Such studies could document factors that increase resilience to PTSD among high-risk youth and guide the development and implementation of prevention strategies (Miller et al., 1999; Kliewer et al., 1998).
- **Conduct longitudinal studies of chronic community violence and its relationship to PTSD.** Research suggests that chronic exposure to violence may have more deleterious effects on children than acute violence (Bell and Jenkins, 1991). Living with widespread or chronic community violence in the inner city has been compared with living in a war zone (Schwab-Stone et al., 1995). Future research must study the effects of chronic community violence on high-risk youth as they become adults (Cuffe et al.,



1998) and should examine the role that witnessing violence plays in perpetuating the cycle of violence. Such research could improve both trauma-informed care and violence prevention interventions among youth and adults in high-crime areas.

- **Standardize measures of PTSD and trauma.** There is a scarcity of research on the validity and reliability of diagnostic measures of PTSD (Ohan, Myers, and Collett, 2002). Moreover, the definitions of trauma in DSM–IV are somewhat ambiguous (World Health Organization, 1997); hence, little consistency exists among diagnostic instruments that measure traumas. For example, most measures assess violent victimization (DISC–IV and the Composite International Diagnostic Interview [CIDI] 2.1) (Davis and Siegel, 2000). Some measures (DISC–IV, CIDI 2.1) assess victimization by *any* perpetrator; others specifically ask about victimization by family members (DIS–IV [Robins, 1996] and the National Comorbidity Survey Replication [2001–2002]). These differences reduce the validity and reliability of diagnoses. A consensually understood and empirically validated framework must be created to define and measure traumatic events.

Implications for the Juvenile Justice System

The juvenile justice system must collaborate with mental health professionals to improve mental health services for youth in the juvenile justice system. The National Center for Mental Health and Juvenile Justice's *Blueprint for Change* provides a practical framework for juvenile justice and mental health systems to use when developing policies and programs aimed at improving mental health services for youth in the juvenile justice system (Skowyra and Cocozza, 2007). Such collaborations must:

- **Improve the detection of PTSD in residential facilities for juveniles.** PTSD is frequently overlooked, even in the best psychiatric settings (Cascardi et al., 1996; Mueser et al., 1998). Traumatic experiences are rarely included in standard screens or volunteered by patients (Brady, 1997). Because PTSD frequently co-occurs with other psychiatric disorders (Giaconia et al., 1995; Kessler et al., 1995), it can be difficult to detect without targeted questions and systematic screening. Screening also should determine the relative onset of comorbid disorders, which may indicate which disorder should be the primary target for treatment.

- **Fully explore the treatment ramifications of comorbid disorders and tailor treatment to each individual.** Even brief psychosocial and pharmacologic interventions for detainees with PTSD must address comorbid disorders, especially substance use disorders. Detoxification or withdrawal from substances can worsen the symptoms of PTSD (Brady, 1997). Exploration of traumatic experiences, a common psychotherapeutic tool for treatment of PTSD, may worsen symptoms of comorbid mood disorders or precipitate self-medication and relapse for those in recovery (Brady, 1997). Medication management requires special attention to the potential for abuse and drug interactions (Jacobsen, Southwick, and Kosten, 2001; Arroyo, 2001). Finally, the high-risk behaviors associated with certain psychiatric disorders, such as attention-deficit hyperactivity disorder, mania, and substance use disorder (Deykin and Buka, 1997; Wozniak et al., 1999), may increase the likelihood of experiencing additional traumas.

- **Avoid retraumatizing youth.** It is important for the juvenile justice system, law enforcement, and the mental health system to incorporate knowledge about trauma into existing services (i.e., trauma-informed care) (Hodas, 2006). The conditions of confinement often exacerbate symptoms of mental disorder, including PTSD (Coalition for Juvenile Justice, 2000). Juvenile justice providers must reduce the likelihood that *routine* processing will retraumatize youth. Common practices, such as handcuffing and searching, may exacerbate symptoms of PTSD (Prescott, 1998; Veysey, 1998). In detention centers, symptomatic detainees undergoing

psychiatric crises are often isolated or restrained. These practices can trigger or escalate symptoms of PTSD (e.g., severe anxiety, aggression, and numbing of emotions) (Prescott, 1998; Veysey, 1998). Psychiatrists can work with correctional staff to implement strategies to manage emergencies humanely—and, ultimately, more cost effectively.

- **Improve the continuity of care for victims of trauma.** It is estimated that juvenile detainees typically remain in facilities for only 2 weeks before release (Snyder and Sickmund, 2006). Hence, both correctional service systems and community psychiatry systems must address these youths' mental health needs. Yet, youth who experience trauma rarely receive services in the community (Costello et al., 2002). The treatments most likely to succeed will address past traumas and the diagnostic complications that often follow. Timely interventions may avert subsequent and often chronic social problems common among traumatized youth (Bell and Jenkins, 1991; Davidson et al., 1991; Giaconia et al., 1995). To the extent that PTSD is correlated with subsequent perpetration of violence, effective treatment is also a matter of public safety (Cauffman et al., 1998; Fehon, Grilo, and Lipschitz, 2001; Wekerle et al., 2001).

Conclusion

The number of youth with psychiatric disorders in juvenile detention is alarming: two-thirds of males and three-quarters of females in juvenile detention have one or more psychiatric disorders (Teplin et al., 2002). In the current study, the authors found that more than 1 in 10 have posttraumatic stress disorder. The presence of PTSD increases the likelihood that at least one other psychiatric disorder is present, a challenge to the criminal justice and mental health systems. Youth with PTSD and comorbid disorders have significantly more behavioral and health problems and more impaired interpersonal relationships than those with PTSD and no comorbid disorders.

This nation's delinquent children are among its most traumatized. The resources used to punish them must be balanced with the resources needed to treat them.

For More Information

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