PSYCHIATRIC DISORDER, COMORBIDITY, AND SUICIDAL BEHAVIOR IN JUVENILE JUSTICE YOUTH

GAIL A. WASSERMAN
LARKIN S. MCREYNOLDS
CRAIG S. SCHWALBE
JOSEPH M. KEATING
SHANE A. JONES
Columbia University

Results of collaborations with juvenile justice agencies nationwide were examined to provide generalizable estimates of psychiatric disorder and suicidality among justice system youth. Diagnostic assessments were aggregated from 57 sites (N = 9,819) from an automated computer-assisted self-interview (Voice Diagnostic Interview Schedule for Children). Disorder was predicted from setting type (system intake, detention, corrections), adjusting for demographic and offense characteristics, and for cross-site variability within settings. Race by comorbid disorder interactions were examined in predicting substance use disorder (SUD). White youth, repeat offenders, and those with further justice system penetration reported higher rates of most disorders; girls reported higher rates of internalizing conditions only. Although presence of another disorder increased SUD for most groups, SUD was high in American Indians regardless of either affective disorder or recent suicide attempt. Findings highlight (a) varying mental health needs across settings, (b) prior justice contact relating strongly to need, (c) girls' elevated rates of internalizing disorder, and (d) racial/ethnic differences in diagnostic profiles.

Keywords: V-DISC; juvenile justice; psychiatric disorder; prevalence; American Indians

Over the past decade, accumulating research has documented the high burden of mental health need in juvenile justice populations (e.g., Fazel, Doll, & Langstrom, 2008). Most of that research has described characteristics of youth in one or another county or state (e.g., Teplin, Abram, McClelland, & Dulcan, 2002) and has considered only a single point in juvenile justice processing (Karnik et al., 2009). As a result, such reports are limited in both generalizability and their capacity to guide policy for identification and clinical management of justice youth. Variations in mental health burden across setting types would have strong policy and administrative implications; mental health assessment protocols and clinical staffing ratios should differ accordingly, much as they do for programming that aims to be responsive to gender (Office of Juvenile Justice and Delinquency Prevention National Training and Technical Assistance Center, 2010) or offense seriousness (Lipsey & Wilson, 1998).

AUTHORS' NOTE: *Joseph M. Keating is now at the Department of Pulmonary and Critical Care and Sleep Medicine, New York University School of Medicine.* *This work was supported by the Carmel Hill Fund. All who contributed significantly to the work are listed as authors, in addition to the following. Reni John was instrumental in the ongoing management of our many agency collaborations. We are indebted to the contributions of the late William J. Ruane, ever an advocate for the mental health of children, particularly those with few others to speak on their behalf.* *Correspondence concerning this article should be addressed to Gail A. Wasserman, New York State Psychiatric Institute, 1051 Riverside Drive, Unit 78, New York, NY 10032; e-mail: wassermg@childpsych.columbia.edu.*

CRIMINAL JUSTICE AND BEHAVIOR, Vol. 37 No. 12, December 2010 1361-1376
DOI: 10.1177/0093854810382751

Two recent reviews consider mental health in juvenile justice youth. A meta-analysis examines the prevalence of disorder in youth in detention and correctional settings (Fazel et al., 2008); another broader review considers physical and mental health conditions among juvenile detainees (Golzari, Hunt, & Anoshiravani, 2006). The Fazel et al. (2008) meta-analysis examined 25 studies (N = 17,000), utilizing eight different instruments but with variability in instrument choice and an administration format that limited which disorders could be considered. Both reviews underscore the variability that may be attributable to different inquiry formats (e.g., clinical judgment, mental health screens, diagnostic interviews), and differences that follow even from use of different versions of a single instrument. For example, because of the version of the Diagnostic Interview Schedule for Children (DISC) employed, the studies reviewed by Golzari and Fazel use different time frames, different versions of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*), and different administration formats (interview vs. self-report) and assess different sets of disorders.

These features explain some differences across studies. As examples, Fazel et al. (2008) note that lower rates of Major Depressive Disorder are reported in studies relying on clinician interviews, and lower rates of all examined disorders are found in studies utilizing one or another version of the DISC (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). Similarly, the rates reported in the Golzari et al. (2006) review are quite variable, though restricted to detainees. Taken together, these reviews suggest a clear interpretive advantage to examining data spanning multiple sites at all levels of juvenile justice contact while still relying on a uniform instrument and protocol. Furthermore, although they constitute the great bulk of justice system youth (Sickmund, 2002; Snyder & Sickmund, 2006), neither review considered disorder among those entering the justice system (e.g., via initial court contact, probation intake, or juvenile assessment center).

Recently, results from a pooled analysis of mental health screening on the Massachusetts Youth Screening Instrument–Second Version (MAYSI-2) in 283 juvenile justice sites have also become available (Vincent, Grisso, Terry, & Banks, 2008). Although this report has the advantage of reliance on multisite pooling of data, the MAYSI-2 is a nondiagnostic symptom scale (Grisso, Vincent, & Seagrave, 2005) so that comparisons to clinical prevalence studies are not readily made. Furthermore, although this pooled analysis included youth from three levels of justice penetration (probation intake, pretrial detention, and secure corrections), cross-setting differences were not examined.

As another concern, studies of American Indian youth in the justice system (Duclos et al., 1998; Novins, Duclos, Martin, Jewett, & Manson, 1999) report high rates of disorder but have not included systematic comparisons either with nonjustice counterparts or with other ethnicities in justice settings. In light of continued concern about this group's psychiatric vulnerability, some formal examination is warranted. In particular, because substance use disorder (SUD) is a major concern for American Indians (Costello, Farmer, Angold, Burns, & Erkanli, 1997; Kunitz et al., 1999) in community settings, clarifying rates of disorder and comorbidity with SUD across race/ethnicity for justice youth would aid in treatment planning.

Earlier, we reported on prevalence of disorder in various juvenile justice settings (e.g., McReynolds et al., 2008; Wasserman, McReynolds, Ko, Katz, & Carpenter, 2005; Wasserman, McReynolds, Lucas, Fisher, & Santos, 2002). Here, to increase generalizability, we aggregated data for nearly 10,000 youth from those and several other sites nationwide. Use of this large data set, collected via uniform measures and protocols, allows us to examine previously unaddressed concerns, such as variations in the burden of disorder

across justice settings and the particular mental health needs of justice-involved American Indian youth. We consider policy implications that emerge from these comparisons.

METHOD

JUVENILE JUSTICE CONTEXT

The juvenile justice system has been described as a funnel (Sickmund, 2002), with numbers of youth decreasing as the seriousness of sanctions increases. Less serious cases receive milder sanctions, for example, "diversion" to one or another community program, whereas formal court actions include waiver to the adult system and incarceration. Following system intake, some youth (18% nationwide; Snyder & Sickmund, 1999) are detained pretrial, generally to prevent interim disappearance or reoffending. Few reported youth crimes actually result in conviction and sentencing, and only a fraction of those lead to secure care. For example, only about 60% of delinquency cases are formally referred to the courts from law enforcement; of those referred, approximately two thirds are adjudicated as delinquent, and only about a quarter of those adjudicated are referred for secure placement (Snyder & Sickmund, 2006). Since placement decisions reflect factors such as prior justice contacts and offense seriousness, youth who penetrate the system further should differ systematically from those who do not in demographic and justice characteristics. Because justice system samples also reflect their larger communities, their ethnic composition should also differ across regions.

Beginning in 1999, we entered into collaborative agreements with juvenile justice agencies in 18 states. Collaborating agencies represent settings at three levels of increasingly restrictive justice system contact ("penetration"), including system intake sites (e.g., probation or family court intake), detention centers, and postadjudicatory correctional facilities. Table 1 summarizes information on participating sites at these three levels. For some collaborations, data were provided for multiple levels; as an example, data were available from 10 intake settings, four detention centers, and four correctional sites in Oklahoma.

PROCEDURE

Sites used standardized data collection protocols, assessing youth shortly after admission, employing universal or systematic random sampling, and measuring a core set of disorders. Sites provided assessment results and deidentified information on youth demographic and offense characteristics. The study was approved by Institutional Review Boards at Columbia University and New York State Psychiatric Institute and at collaborating institutions.

MEASURES

Diagnostic status. The DISC (Shaffer et al., 2000) is the most extensively tested structured child or adolescent diagnostic interview (Shaffer et al., 1996). The Voice DISC (V-DISC) is the audio computer-assisted self-report version (Wasserman et al., 2002). Both have been widely used in research on prevalence of psychiatric disorder among justice-involved youth (e.g., Teplin et al., 2002; Wasserman et al., 2002; Wasserman et al., 2005), demonstrating validity against disciplinary problems (Friman et al., 2000) and offense history (Wasserman et al., 2002) and with adequate psychometrics (Shaffer et al., 2000). The

TABLE 1: Collaborating Agencies by Justice Setting Type

System Intake (n = 3,803, 27 sites)			*Detention (n = 1,055, 8 sites)*			*Secure Postadjudication (n = 4,961, 22 sites)*		
State	*n*	*Sites*	*State*	*n*	*Sites*	*State*	*n*	*Sites*
Alabama	467	4	Alabama	187	2	Arizona	1,203	3
Florida	985	1	Montana	78	1	Illinois	100	1
Montana	30	1	Ohio	87	1	Iowa	554	1
New York	1,250	5	Oklahoma	703	4	Minnesota	37	1
Oklahoma	84	8				Nebraska	420	1
Texas	987	8				New Jersey	140	1
						New Mexico	353	1
						North Carolina	220	2
						Ohio	826	2
						Oklahoma	120	4
						South Carolina	258	1
						Washington State	661	3
						Washington, DC	69	1

Note. $N = 9{,}819$.

V-DISC generates disorders present in the past month, although some diagnoses are based on symptoms that may have been present across a longer time frame (i.e., conduct disorder; American Psychiatric Association, 1994). Protocols examined 20 disorders in four diagnostic clusters: affective and anxiety disorders, disruptive behavior disorder (DBD), SUD, and lifetime and recent (past month) suicidal behavior. We considered DBDs and SUDs to be externalizing disorders, whereas affective and anxiety disorders reflected internalizing disorders. Consistent with earlier work, analyses did not consider impairment (Wasserman et al., 2002), and separation anxiety disorder did not contribute to the anxiety cluster (Schalling, 1978). Data were scored with Version F algorithms.

Demographic and offense characteristics. Sites provided information on race/ethnicity, age, gender, and last school grade completed as well as current offense, age at first offense, and number of prior justice contacts from official records.

DATA REDUCTION

Comparable variables were available in each data set, except for prior justice contact. Most agencies provided *number of prior justice referrals* ($n = 7{,}681$), but some, instead, provided *age at first offense* ($n = 8{,}794$); for 6,941 youth, both were available. We dichotomized number of prior referrals, characterizing youth as either first-time or repeat offenders; youth without this information were considered repeat offenders if current age was greater by a year or more than age at first offense; otherwise, they were considered first-time offenders. More fine-grained distinctions were impossible because agencies generally provided youths' ages in years only. The 285 youth missing information on both indicators were excluded from regression analyses.

Collaborating agencies provided information regarding "most serious" current offense, utilizing an agreed-on rank ordering of offense seriousness, with *interpersonal* offenses (person or weapon related) the most serious, followed by *property* offenses and then by

substance-related offenses. Youth with multiple current offenses were coded to the most serious offense. Interpersonal offenses included rape, assault, robbery, arson, homicide, and all weapons charges, although actual interpersonal offenses differed somewhat from those considered in the FBI's Violent Crime Index (Federal Bureau of Investigation, 2003) primarily because few youth committed more seriously violent acts. We designated current offenses as interpersonal (persons or weapons related) or noninterpersonal (property or substance related).

Because of relatively small numbers, we combined 55 Asian youth with 139 coded as Other. Altogether, 319 youth were identified as American Indian, primarily from Oklahoma (n = 82), Arizona (n = 66), Nebraska (n = 56), and Washington (n = 40). Because data collection did not capture tribal designations, and because of relatively small numbers, we aggregated these into a single group. The 37 youth missing data on race/ethnicity and 195 for whom race was designated as Other were excluded from regressions. Most (84.8%) youth completed the entire V-DISC assessment; data were included in prevalence estimates and in regression analyses predicting diagnostic clusters only for those who completed assessment for all disorders within a given cluster. Finally, some youth reappeared in their respective sites during data collection; we included only data from their first contact.

DATA ANALYSIS

As noted, individual data are nested within three types of juvenile justice settings (system intake, detention, secure care). We employed a nonlinear mixed model estimation procedure, PROC NLMIXED (SAS Institute, 2008), when considering differences in diagnostic status (Raudenbush & Bryk, 2002). Models account for the clustering of individuals within facility or agency. For analyses predicting number of disorder clusters (a continuous outcome), we examined a similar model via linear regression. To simplify interpretation of interactions, we first examined gender interactions with race and with offense history (coded as repeat vs. first-time offending) in three separate analyses that each considered only two of the three most prevalent racial/ethnic groups at a time. A similar set of three analyses predicted each diagnostic outcome. In 18 analyses, there was a single significant gender by race interaction: African American females reported significantly lower rates of SUD than did either their White counterparts or males of either race. Accordingly, final models do not consider gender or race interactions.

Analyses first considered system intake settings as the reference group and were then repeated with secure care as the reference group to allow for all cross-setting comparisons. To examine differential comorbidity with SUD across race/ethnicity, we considered unadjusted rates of SUD conditional on presence of other disorder clusters, followed by logistic regression to test for race by disorder interactions in predicting SUD, adjusting for other features (setting, gender, age, repeat offender status).

RESULTS

SAMPLE CHARACTERISTICS

Demographic and offense characteristics. Data were available for 9,819 youth; 38.7% from intake, 10.7% from detention, and 50.5% from postadjudicatory settings. Approximately

TABLE 2: Sample Characteristics by Justice Setting Type

	System Intake (n = 3,803)		*Detention (n = 1,055)*		*Secure Postadjudication (n = 4,961)*		*Total (N = 9,819)*	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Female	1,045	27.5	222	21.0	1,042	21.0	2,309	23.5
Race								
African American	1,412	37.2	404	38.3	1,630	33.0	3,446	35.1
Hispanic	673	17.7	123	11.7	1,052	21.3	1,848	18.8
White	1,635	43.0	433	41.0	1,908	38.6	3,976	40.5
American Indian	19	0.5	65	6.2	234	4.7	318	3.2
Other	60	1.6	15	1.4	119	2.4	194	2.0
Age (years)[a]	15.0	1.5	15.8	1.5	16.3	1.1	15.8	1.5
Age at first offense (years)[a]	13.8	1.8	13.9	2.1	13.0	2.0	13.4	1.9
Interpersonal offense	1,161	30.8	265	27.1	1,846	37.2	3,272	33.7
Repeat offender	1,569	41.6	858	88.4	4,404	91.9	6,831	71.7
Any disorder	1,163	35.1	469	58.9	2,684	63.7	4,316	51.9
Anxiety disorder	672	18.7	269	26.9	981	20.3	1,922	20.4
Affective disorder	209	5.7	111	11.2	427	8.8	747	7.9
Disruptive behavior disorder	530	15.1	267	32.2	1,575	35.7	2,372	27.1
Substance use disorder	602	16.7	342	38.8	2,209	47.0	3,153	34.3
Past-month suicide attempt	72	1.9	38	3.7	121	2.5	231	2.4
Lifetime suicide attempt	401	10.8	177	17.7	800	16.3	1,378	14.4
> 1 disorder	542	16.4	292	36.7	1,742	41.3	2,576	30.9
> 1 cluster	402	12.1	243	29.6	1,382	32.8	2,027	24.3

Note. Some entries are based on a slightly reduced *N* because of missing data.
[a]Values are means and standard deviations.

75% were male; most were White or African American, with smaller proportions of Hispanics and American Indians (Table 2). The average youth was 15.8 years old and began offending at 13.4 years. For approximately a third, current offense was interpersonal. Almost three quarters were repeat offenders. Demographic and offense characteristics varied as expected with system penetration. For example, the proportion of males increased across setting, $\chi^2(2) = 54.2$, $p < .0001$; the proportions of older youth, $F(2) = 983.52$, $p < .0001$, of youth who had committed their first offenses at younger ages, $F(2) = 172.67$, $p < .0001$, of those with current interpersonal offenses, $\chi^2(2) = 60.76$, $p < .0001$, and of repeat offenders, $\chi^2(2) = 2778.82$, $p < .0001$, increased with system penetration. Although the overall association between setting and race/ethnicity was significant, $\chi^2(8) = 283.93$, $p < .0001$, there was no clear trend, so that differences in these unadjusted analyses likely reflect the demographics of individual sites within settings.

Disorder characteristics. As Table 2 shows, more than half the sample met criteria for one or another disorder. One in five reported anxiety disorder, almost one in ten reported affective disorder, approximately 30% reported DBD, and a third met criteria for SUD. Almost 14% reported lifetime suicide attempts, and 2.4% reported a recent suicide attempt. A third met criteria for more than one disorder, and about a quarter met criteria for disorders in multiple clusters. Prevalence of disorder increased significantly with justice penetration, $\chi^2(2) = 624.23$, $p < .0001$, for each disorder cluster: for affective, anxiety, disruptive, and substance disorders, respectively, $\chi^2(2) = 44.58$, 32.34, 432.91, and 840.38, all $p < .0001$.

TABLE 3: Logistic Regressions Predicting Diagnostic Status and Suicide Attempt History

	Affective Disorder (n = 8,994)	*Anxiety Disorder (n = 8,930)*	*Disruptive Disorder (n = 8,435)*	*Substance Use Disorder (n = 8,821)*	*Past-Month Suicide Attempt (n = 9,100)*	*Lifetime Suicide Attempt (n = 9,100)*
	OR	*OR*	*OR*	*OR*	*OR*	*OR*
Justice setting (compared to intake)						
Detention	1.62***	1.77***	2.22***	2.09***	1.54	1.54**
Secure	1.20	1.22*	2.68***	2.53***	0.96	1.26*
Female	2.07***	2.14***	1.18*	1.03	2.88***	3.26***
Age	1.04	0.93***	0.94**	1.23***	0.93	1.04
Race (compared to White)						
African American	0.87	1.10	0.57***	0.50***	0.81	0.46***
Hispanic	0.93	0.98	0.79	1.26*	0.93	0.78*
American Indian	0.86	0.58**	0.88	2.00***	1.28	0.92
Repeat offender	1.95***	1.20*	1.71***	1.74***	2.78***	1.66***

Note. OR = odds ratio.
*$p < .05$. **$p < .01$. ***$p < .001$.

Rates of both recent and lifetime suicide attempts also increased with justice penetration, $\chi^2(2) = 11.78$ and 62.43, $p < .003$ and .0001, respectively. Comorbidity increased across setting, for the likelihood of both multiple disorders, $\chi^2(2) = 554.73$, $p < .0001$, and multiple clusters, $\chi^2(2) = 444.32$, $p < .0001$.

PREDICTING DIAGNOSTIC STATUS AND SUICIDALITY

Table 3 presents logistic regression analyses predicting each of six diagnostic and suicidality outcomes. First, with intake setting as the reference group, adjusting for other characteristics, detainees reported significantly higher rates of all disorders, particularly externalizing disorder (DBD odds ratio [OR] = 2.22, confidence interval [CI] = 1.65, 2.98; SUD OR = 2.09, CI = 1.57, 2.77; affective OR = 1.62, CI = 1.15, 2.27; anxiety OR = 1.77, CI = 1.41, 2.23). Compared to youth in intake settings, those in corrections were around 2.5 times as likely to endorse externalizing disorder (for DBD, OR = 2.68, CI = 2.16, 3.34; for SUD, OR = 2.53, CI = 2.06, 3.10) and significantly more likely to meet criteria for anxiety disorder (OR = 1.22, CI = 1.03, 1.46). Compared to those in secure care, detainees reported significantly higher rates of both affective and anxiety disorders (OR = 1.35, CI = 1.00, 1.83 and OR = 1.45, CI = 1.17, 1.79, respectively).

Compared to males, adjusting for other features, females' rates were significantly elevated for internalizing disorders and for DBDs. Females' reports of affective and anxiety disorders were approximately double males' reports (ORs = 2.07 and 2.14, CIs = 1.71, 2.50 and 1.89, 2.43, respectively) and slightly elevated for DBDs (OR = 1.18, CI = 1.02, 1.37). The gender difference in DBD is primarily explained by higher rates of oppositional defiant disorder (ODD) in girls, relative to boys (OR = 2.06, CI = 1.69, 2.51, $p < .0001$), with no gender difference found for either conduct or attention-deficit/hyperactivity disorder (data not shown). Older youth were slightly less likely to endorse anxiety disorder (OR = 0.93, CI = 0.89, 0.97) or a DBD (OR = 0.94. CI = 0.90, 0.98) and more likely to endorse SUD (OR = 1.23, CI = 1.18, 1.28).

Compared to Whites, African Americans were approximately half as likely to meet criteria for either DBD (OR = 0.57, CI = 0.46, 0.70) or SUD (OR = 0.50, CI = 0.41, 0.61). Hispanic youth reported significantly higher rates of SUD (OR = 1.26, CI = 1.00, 1.58) than did White counterparts. American Indian youth, compared to Whites, were only 40% as likely to report anxiety disorder (OR = 0.58, CI = 0.41, 0.84) but twice as likely to report SUD (OR = 2.00, CI = 1.41, 2.85). We did not examine types of SUD because of substantial overlap among all racial/ethnic groups: for example, among American Indians, 77.1% of those reporting alcohol abuse or dependence also reported marijuana abuse or dependence. Adjusting for other features, repeat offenders were more likely to meet criteria for all disorder types (affective OR = 1.95, CI = 1.48, 2.58; anxiety OR = 1.20, CI = 1.01, 1.43; DBD OR = 1.71, CI = 1.38, 2.13; SUD OR = 1.74, CI = 1.42, 2.13).

Compared to those at system intake, both detainees (OR = 1.54, CI = 1.15, 2.06) and those in secure care (OR = 1.26, CI = 1.01, 1.56) reported significantly elevated rates of lifetime suicide history. Compared to those in secure care, detainees reported a higher rate of recent (OR = 1.61, CI = 1.03, 2.52) suicidal behavior. As expected, compared to males, females were nearly 3 times as likely to report recent (OR = 2.88, CI = 2.15, 3.86) and lifetime (OR = 3.26, CI = 2.80, 3.79) suicide attempts. Compared to Whites, African American (OR = 0.46, CI = 0.37, 0.56) and Hispanic (OR = 0.78, CI = 0.62, 0.98) youth were less likely to report lifetime suicide attempts. Consistent with their increased risk for affective disorder, repeat offenders were almost 3 times as likely to report a recent attempt (OR = 2.78, CI = 1.75, 4.42) and more than 1.5 times as likely to report lifetime suicide attempts (OR = 1.66, CI = 1.33, 2.07).

We detected a single significant gender by race interaction. Although as noted African Americans of either gender were less likely to report SUD than were Whites, African American females were particularly less likely to meet criteria for SUD compared to White counterparts or to males of either race (OR = 0.31, CI = 0.22, 0.44, $p < .001$).

COMORBIDITY

Compared to those at system intake, detainees and those in correctional settings reported significantly more disorder clusters ($\beta = .13$ and .23, $p < .0001$, respectively). Females, older youth, and repeat offenders reported more disorder clusters ($\beta = .06$, .03, and .09, $p < .0001$, .05, and .0001, respectively). Compared to African Americans, Whites reported significantly more disorder clusters ($\beta = -.12$, $p < .0001$).

RATES OF COMORBIDITY CONDITIONAL ON SUD

Considering again only those completing all modules in the clusters examined, rates of other disorders and suicidal behavior (Table 4) generally increased with presence of comorbid SUD. This pattern is fairly consistent across race/ethnicity, except that American Indians' affective disorder and recent suicide attempt did not increase with SUD. In adjusted analyses predicting SUD, comparing American Indians to all others, the race/ethnicity interaction with affective disorder was significant (OR = 0.41, CI = 0.17, 0.98, $p < .05$): Compared to the increasing trend among all other groups, there were no SUD differences for American Indians.

TABLE 4: Rates of Substance Use Disorder Conditional on Comorbidity Status by Race/Ethnicity

	African American		*Hispanic*		*White*		*American Indian*	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
No affective disorder	629	21.3	696	44.0	1,188	34.9	167	63.7
Affective disorder	80	37.0	84	62.2	168	55.1	16	59.3
No anxiety disorder	533	22.0	598	43.1	1,042	35.2	150	62.0
Anxiety disorder	159	23.5	181	55.4	312	42.9	32	69.6
No disruptive behavior disorder	335	13.8	355	30.7	512	21.6	84	49.7
Disruptive behavior disorder	315	51.7	357	76.9	691	64.2	76	80.0
No past-month suicide attempt	694	22.1	767	45.4	1,319	36.1	176	63.3
Past-month suicide attempt	24	36.9	22	55.0	54	55.7	8	61.5
No lifetime suicide attempt	621	21.3	640	43.6	1,022	33.1	137	60.1
Lifetime suicide attempt	97	33.8	149	57.1	351	52.9	47	74.6

DISCUSSION

Adjusting for other features, youth in detention and correctional settings reported expectably higher rates of most disorders, as well as more comorbidity and more lifetime suicide attempts, relative to those at system intake. Compared to those in corrections, detainees reported significantly higher rates of both affective and anxiety disorders, along with higher rates of recent suicide attempts. Risk for disorder varied with gender, age, and whether or not the youth was a repeat offender. Race differences highlighted increased risk for many types of disorder among White youth. Compared to White youth, American Indians were significantly more likely to endorse SUD; although for other racial/ethnic groups presence of affective disorder elevated risk for SUD, American Indians' SUD rates were high regardless of presence or absence of affective disorder. Findings highlight the (a) importance of justice setting in defining mental health needs, (b) strength of prior justice contact as an indicator of need, (c) elevated rates of internalizing disorder among justice system girls, and (d) racial/ethnic differences in diagnostic profiles.

The present investigation relied on a version of the DISC that corresponds to *DSM-IV*, employing a 1-month time frame and youth self-report.[1] Despite differences in instrument and administration between this report and others considered in recent reviews (Fazel et al., 2008; Golzari et al., 2006), rates reported here are within the ranges observed for all types of disorder. Comparisons may be made to a results from the national Survey of Youth in Residential Placement (detention and correctional settings together; Sedlak & McPherson, 2010), which reported that 22% of respondents reported a suicide attempt in their lifetimes (a rate similar to that reported here for the same settings). The same survey noted that 85% of respondents reported lifetime *use* of any illegal substance, in contrast to the 40% to 50% in the present report who met criteria (a far more stringent definition) for an SUD. Prevalence of disorder (based on a comparable range of disorders and without consideration of impairment) measured on other versions of the DISC among community child and adolescent populations (Roberts, Roberts, & Xing, 2007; Shaffer et al., 1996) range between 17% and 26%. Those reported here are 2 to 4 times what is reported for community samples, although comparisons are complicated by the gender (75% males) and age (generally 15–18 years) constraints on most justice samples. The increased rate of disorder

among populations (adult and child) in contact with the justice system is expectable, given that many of the same features that are associated with criminal or delinquent behavior (i.e., Hawkins et al., 1998) are also associated with disorder (Dohrenwend, 2000), such as poverty and stressful life events.

JUSTICE SYSTEM CONTACT

With justice system penetration, not only do rates of externalizing disorder increase expectably, but rates of internalizing disorder, suicide history and comorbidity rise as well. Repeat offenders were, on average, more than 1.5 times more likely to meet criteria for each disorder type and were almost 3 times as likely to report recent suicide attempts. Other work (Lopez-Williams, Vander Stoep, Kuo, & Stewart, 2006; Wasserman et al., 2008) has underscored the importance of more extensive delinquent history as a marker for mental health service needs. Since both the burden and complexity of those needs increase with system penetration, justice authorities need to consider this when deriving assessment protocols and addressing clinical staffing needs, although evidence suggests that they do not do so consistently. For example, a recent report on the national Survey of Juvenile Facility Directors (Young, Dembo, & Henderson, 2007) found that only 36% of residential facilities used standardized mental health assessments (and 48% used standardized substance abuse assessments). The prevalence of disorder in the population served should direct policy and practice directly, including assessment staffing ratios, line staff training, and whether or not a one- or two-stage screening or assessment protocol is efficient (Wasserman et al., 2004). If, as is the case for youth in secure care, two thirds present with one or another disorder, then first-stage screening followed by scheduling additional clinical evaluations for large numbers of screen-positive youth is likely to entail delay and coordination difficulties for both youth and service systems.

A recent national survey of services provided in residential facilities (Hockenberry, Sickmund, & Sladky, 2009) allows for comparisons between detention and secure care settings. Detention settings are approximately half as likely as secure settings to provide universal (i.e., for all youth) mental health evaluations, although we find here only small (though statistically significant) differences in the burden of disorder between these settings.

GENDER AND AGE

Girls were significantly more likely to meet criteria for internalizing disorders, for ODD, and for comorbid disorders and to report suicide attempts. In single-site studies of justice youths' diagnostic status, the same pattern is reported (Teplin et al., 2002; Wasserman et al., 2005). Elevations in girls' risk of internalizing disorder consistently appear in epidemiological community studies (e.g., Roberts, Alegria, Roberts, & Chen, 2005). In the MAYSI-2 national meta-analysis (Vincent et al., 2008), females were significantly more likely to score above the caution cutoff on all scales (Angry-Irritable, Depressed-Anxious, Somatic Complaints, and Suicide Ideation) other than Alcohol-Drug use.

The relatively large (and growing) proportion of girls being arrested nationwide may reflect policy changes that encourage arrest in domestic violence incidents (Gavazzi, Yarcheck, & Chesney-Lind, 2006; Snyder & Sickmund, 2006). To the degree that girls

arrested for domestic violence are likely to engage in a pattern of family rule breaking and confrontation (cardinal symptoms of ODD), our finding of higher rates of ODD in girls would support that possibility. On the other hand, although community boys generally report higher rates of externalizing disorder, we find few differences for DBDs other than ODD, no doubt because representation in any justice sample assumes substantial externalizing symptoms.

We found that anxiety disorders decreased with age whereas SUD, DBD, and comorbidity all increased. Community surveys generally find consistently increasing age trends for SUD, with age trends for DBDs and anxiety disorder peaking in adolescence (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). Our findings are consistent with these developmental trends for SUD, but findings for DBD and anxiety disorder likely reflect the particular characteristics of justice youth and the restricted age range studied here (10–18 years). Compared to older individuals, for example, it is more unlikely for younger children to appear in a justice setting without serious conduct problems, a mechanism that would contribute to a decreasing age trend.

RACE

Relative to African American adolescents, Whites reported significantly elevated rates of both types of externalizing disorder and of lifetime suicide attempts. In several large epidemiological community studies, ethnic or racial minority parents generally report lower rates of child disorder relative to Whites (Lau et al., 2006; Roberts et al., 2005), although child self-report uncovers fewer racial/ethnic differences. In community surveys, White adults report higher rates of disorder than do African American or Hispanic counterparts (Breslau et al., 2006; Breslau, Kendler, Su, Gaxiola-Aguilar, & Kessler, 2005).

Expectably, we also found a twofold likelihood of SUD among American Indians compared to White counterparts. Other reports (Duclos et al., 1998; Novins et al., 1999) of American Indian youth in justice contact do not offer systematic comparison to other justice-involved racial/ethnic groups. Studies that provide these comparisons in community samples consistently indicate higher rates of both alcohol and drug and marijuana use among American Indian early adolescents (Costello et al., 1997) and adults (Compton, Thomas, Stinson, & Grant, 2007; Stinson, Ruan, Pickering, & Grant, 2006). We also found that the rate of recent suicide attempt was elevated among American Indians, although low power limited detection of statistical significance. Adolescent American Indian and Alaska Native males have a completed suicide rate 50% higher than Whites and almost double that of African Americans (Centers for Disease Control and Prevention, 2009; Mullany et al., 2009). In contrast to their elevated rates of SUD and recent suicide attempts, American Indian youth in the present sample were approximately 40% less likely to meet criteria for an anxiety disorder. Beals et al. (1997) also found lower anxiety disorder in a community sample of adolescent American Indians than reported for other racial/ethnic groups (Shaffer et al., 1996). Alternatively, among American Indians, cultural differences in disclosure may influence self-report of anxiety more so than for other disorders.

We found that although the presence of most comorbid disorders elevated the likelihood of SUD for other racial/ethnic groups, this was not the case for American Indians' affective disorder and recent suicide attempts, which were unrelated to presence of SUD. In a large

national comorbidity study, adult SUD increases the likelihood of all other types of mental health problems (Kessler et al., 1996) especially externalizing disorders (Kessler et al., 2001, 2003); unfortunately, these reports do not examine differences for American Indians. In the Great Smoky Mountain Study (Costello et al., 1997) comorbidity of substance use and psychiatric disorder was significantly more likely among American Indian children than among Whites. In comparison to other race/ethnicities, then, SUD may be a more isolated disorder for American Indian youth. Future national investigations of child and adolescent disorder should ensure sufficient sampling of American Indians to better characterize these patterns.

LIMITATIONS

Data are neither nationally representative nor based on random site selection. Sites with higher rates of disorder may have felt the need to acquire new assessments for youth in their care. Some portion of regional variability in both racial/ethnic distribution and in justice case processing has been addressed by controlling for race/ethnicity and setting type. Although analyses addressed these concerns by controlling for within-setting variability across facilities, findings may possibly be driven by sites where associations are particularly strong; given the large sample size, however, this seems unlikely. Other multisite studies of disorder without such adjustment have usefully aggregated data (Kandel et al., 1999; Lahey et al., 1996). As a further limitation, data on disorder are cross-sectional, although associations are based on formal case records. Although different information regarding the role of disorder in continuation or desistence along delinquent pathways (e.g., Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991) would be provided by following individual youth as they transition across justice settings, the present cross-sectional data offer a valid perspective on the burden of disorder that justice administrators and clinicians must address.

We were not provided information on tribal affinity. The Bureau of Indian Affairs tallies 564 federally recognized tribes, reflecting a multitude of different cultures (U.S. Department of the Interior, Bureau of Indian Affairs, 2010). Aggregating individuals from these diverse backgrounds into a single group ignores complex differences. This measurement error would bias results toward the null; however, we were able to uncover meaningful associations between disorder and race/ethnicity for American Indians. There might be similar concerns in aggregating data across subgroups of Latinos or African Americans, where, once again, this level of detail was not available.

CONCLUSIONS

The practices and policies of child-serving agencies should flow from sound science. National surveys of practices and services exist for residential facilities, although comparable information is unavailable for system intake settings. Although residential facilities vary considerably in availability of mental health services (Hockenberry et al., 2009), we do not know what factors contribute to that variability. On the other hand, since even secure facilities do not commonly assess *all* youth, it is unclear how they would map staffing and services onto projected mental health needs. The differences in diagnostic patterns

uncovered in this large and diverse examination of justice-involved youth have substantial consequences for assessment and treatment practices. Rates of disorder and suicidality are greatly increased in detention and corrections settings relative to system intake settings; rates are also elevated for those in intake settings relative to their community counterparts, especially considering the restricted age and gender distribution of justice youth. As the rate and complexity of disorder increases, how agencies structure mental health assessment protocols and the training of assessment staff should change accordingly. In fact, training standards for those responsible for managing youths' needs beyond the assessment process should also reflect the pervasiveness of both disorder and comorbidity. Regardless of the justice setting in which youth are seen, all will eventually transition back into their home communities, pointing to the importance of coordination between justice agencies and community service providers. Although challenging, efforts to promote linkage are likely to increase service access (Wasserman et al., 2009).

American Indians are noticeably absent from most national studies of the prevalence of disorder in both adults and adolescents. Because of their high rates of SUD and their possibly different pattern of comorbidities with SUD, future work should not only include American Indians but also strive to better define possible tribal differences in the expression of disorder.

NOTE

1. Corresponding to the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders*, the time frame for conduct disorder is 6 months whereas that for substance use disorders is 1 year.

REFERENCES

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.

Beals, J., Piasecki, J., Nelson, S., Jones, M., Keane, E., Dauphinais, P., . . . Manson, S. M. (1997). Psychiatric disorder among American Indian adolescents: Prevalence in Northern Plains youth. *Journal of the American Academy of Child & Adolescent Psychiatry*, *36*, 1252-1259.

Breslau, J., Aguilar-Gaxiola, A., Kendler, K. S., Su, M., Williams, D., & Kessler, R. C. (2006). Specifying race-ethnic differences in risk for psychiatric disorder in a USA national sample. *Psychological Medicine*, *36*, 57-68.

Breslau, J., Kendler, K. S., Su, M., Gaxiola-Aguilar, A., & Kessler, R. C. (2005). Lifetime risk and persistence of psychiatric disorders across ethnic groups in the United States. *Psychological Medicine*, *35*, 317-327.

Centers for Disease Control and Prevention. (2009). *Web-based Injury Statistics Query and Reporting System (WISQARS)*. Retrieved from http://www.cdc.gov/ncipc/wisqars

Compton, W. M., Thomas, Y. F., Stinson, F. S., & Grant, B. F. (2007). Prevalence, correlates, disability, and comorbidity of DSM-IV drug abuse and dependence in the United States. *Archives of General Psychiatry*, *64*, 566-576.

Costello, E. J., Farmer, E. M., Angold, A., Burns, B. J., & Erkanli, A. (1997). Psychiatric disorders among American Indian and White youth in Appalachia: The Great Smoky Mountains Study. *American Journal of Public Health*, *87*, 827-832.

Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry*, *60*, 837-844.

Dohrenwend, B. P. (2000). The role of adversity and stress in psychopathology: Some evidence and its implications for theory and research. *Journal of Health and Social Behavior*, *41*, 1-19.

Duclos, C. W., Belas, J., Novins, D. K., Martin, C., Jewett, C. S., & Manson, S. M. (1998). Prevalence of common psychiatric disorders among American Indian adolescent detainees. *Journal of the American Academy of Child & Adolescent Psychiatry*, *37*, 866-873.

Fazel, S., Doll, H., & Langstrom, N. (2008). Mental disorders among adolescents in juvenile detention and correctional facilities: A systematic review and metaregression analysis of 25 surveys. *Journal of the American Academy of Child & Adolescent Psychiatry*, *47*, 1010-1019.

Federal Bureau of Investigation. (2003). *Crime in the United States 1998: Uniform crime reports*. Washington, DC: U.S. Department of Justice.

Friman, P. C., Handwerk, M. L., Smith, G. L., Larzelere, R. E., Lucas, C. P., & Shaffer, D. M. (2000). External validity of conduct and oppositional defiant disorders determined by the NIMH Diagnostic Interview Schedule for Children. *Journal of Abnormal Child Psychology*, *28*, 277-286.

Gavazzi, S. M., Yarcheck, C. M., & Chesney-Lind, M. (2006). Global risk indicators and the role of gender in a juvenile detention sample. *Criminal Justice and Behavior*, *33*, 597-612.

Golzari, M., Hunt, S. J., & Anoshiravani, A. (2006). The health status of youth in juvenile detention facilities. *Journal of Adolescent Health*, *38*, 776-782.

Grisso, T., Vincent, G. M., & Seagrave, D. (2005). *Mental health screening and assessment in juvenile justice*. New York, NY: Guilford.

Hawkins, J. D., Herrenkohl, T., Farrington, D. P., Brewer, D. D., Catalano, R. F., & Harachi, T. (1998). A review of predictors of youth violence. In R. Loeber & D. P. Farrington (Eds.), *Serious and violent juvenile offenders: Risk factors and successful interventions* (pp. 106-146). Thousand Oaks, CA: Sage.

Hockenberry, S., Sickmund, M., & Sladky, A. (2009). *Juvenile Residential Facility Census*, *2006: Selected findings* (NCJ 228128). Washington, DC: Office of Juvenile Justice and Delinquency Prevention.

Kandel, D. B., Johnson, J. G., Bird, H. R., Weissman, M. M., Goodman, S. H., Lahey, B. B., . . . Schwab-Stone, M. (1999). Psychiatric comorbidity among adolescents with substance use disorders: Findings from the MECA study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *38*, 696-699.

Karnik, N. S., Soller, M., Redlich, A., Silverman, M., Kraemer, H. C., Haapanen, R., & Steiner, H. (2009). Prevalence of and gender differences in psychiatric disorders among juvenile delinquents incarcerated for nine months. *Psychiatric Services*, *60*, 838-841.

Kessler, R. C., Aguilar-Gaxiola, A., Bijl, R., Borges, G., Caraveo-Anduaga, J. J., DeWit, D. J., . . . Wittchen, H.-U. (2003). Cross-national comparisons of comorbidities between substance use disorders and mental disorders: Results from the international consortium in psychiatric epidemiology. In W. J. Bukoski & Z. Sloboda (Eds.), *Handbook for drug abuse prevention theory*, *science and practice* (pp. 448-471). New York, NY: Plenum.

Kessler, R. C., Aguilar-Gaxiola, A., Bijl, R., Borges, G., Caraveo-Anduaga, J. J., DeWit, D. J., . . . Ustun, T. B. (2001). Mental-substance comorbidities in the ICPE surveys. *Psychiatrica Fennica*, *32*, 62-80.

Kessler, R. C., Nelson, C. B., McGonagle, K. A., Edlund, M. J., Frank, R. G., & Leaf, P. J. (1996). The epidemiology of co-occurring addictive and mental disorders: Implications for prevention and service utilization. *American Journal of Orthopsychiatry*, *66*, 17-31.

Kunitz, S. J., Gabriel, K. R., Levy, J. E., Henderson, E., Lampert, K., McCloskey, J., . . . Vince, A. (1999). Alcohol dependence and conduct disorder among Navajo Indians. *Journal of Studies on Alcohol*, *60*, 159-167.

Lahey, B. B., Flagg, E. W., Bird, H. R., Schwab-Stone, M. E., Canino, G. J., Dulcan, M. K., . . . Regier, D. A. (1996). The NIMH Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) Study: Background and methodology. *Journal of the American Academy of Child & Adolescent Psychiatry*, *35*, 855-864.

Lau, A. S., Garland, A. F., Yeh, M., McCabe, M. M., Wood, P. A., & Hough, R. L. (2006). Race/ethnicity and inter-informant agreement in assessing adolescent psychopathology. *Journal of Emotional and Behavioral Disorders*, *12*, 145-156.

Lipsey, M. K., & Wilson, D. B. (1998). Effective intervention for serious juvenile offenders: A synthesis of research. In R. Loeber & D. P. Farrington (Eds.), *Serious and violent juvenile offenders: Risk factors and successful interventions* (pp. 197-247). Thousand Oaks, CA: Sage.

Loeber, R., Stouthamer-Loeber, M., Van Kammen, W. B., & Farrington, D. P. (1991). Initiation, escalation and desistance in juvenile offending and their correlates. *Journal of Criminal Law and Criminology*, *82*, 36-82.

Lopez-Williams, A., Vander Stoep, A., Kuo, E. S., & Stewart, D. G. (2006). Predictors of mental health service enrollment among juvenile offenders. *Youth and Detention Facilities*, *4*, 266-280.

McReynolds, L. S., Wasserman, G. A., DeComo, R. E., John, R., Keating, J. M., & Nolen, S. (2008). Psychiatric disorder in a juvenile assessment center. *Crime & Delinquency*, *54*, 313-334.

Mullany, B., Barlow, A., Goklish, N., Larzelere-Hinton, B. A., Cwik, M., & Craig, M. (2009). Toward understand suicide among youths: Results from the White Mountain Apache Tribally Mandated Suicide Surveillance System, 2001–2006. *American Journal of Public Health*, *99*, 1840-1848.

Novins, D. K., Duclos, C. W., Martin, C., Jewett, C. S., & Manson, S. M. (1999). Utilization of alcohol, drug, and mental health treatment services among American Indian adolescent detainees. *Journal of the American Academy of Child & Adolescent Psychiatry*, *38*, 1102-1108.

Office of Juvenile Justice and Delinquency Prevention National Training and Technical Assistance Center. (2010). *Gender responsive programming for girls*. Retrieved from https://www.nttac.org/index.cfm?event=genderResponsiveProgramming

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.

Roberts, R. E., Alegria, M., Roberts, C. R., & Chen, I. G. (2005). Mental health problems of adolescents as reported by their caregivers: A comparison of European, African, and Latino Americans. *Journal of Behavioral Health Services and Research*, *32*, 1-13.

Roberts, R. E., Roberts, C. R., & Xing, Y. (2007). Rates of DSM-IV psychiatric disorders among adolescents in a large metropolitan area. *Journal of Psychiatric Research*, *41*, 959-967.

SAS Institute. (2008). *SAS 9.2*. Cary, NC: Author.

Schalling, D. (1978). Psychopathy-related personality variables and the psychophysiology of socialization. In R. D. Hare & D. Schalling (Eds.), *Psychopathic behavior: Approaches to research* (pp. 85-106). New York, NY: John Wiley.

Sedlak, A. J., & McPherson, K. S. (2010). *Youth's needs and services: Findings from the Survey of Youth in Residential Placement* (NCJ 227728). Washington, DC: Office of Juvenile Justice Delinquency Prevention.

Shaffer, D. M., Fisher, P. W., Dulcan, M. K., Davies, M., Piacentini, J. C., Schwab-Stone, M. E., . . . Regier, D. A. (1996). The NIMH Diagnostic Interview Schedule for Children (DISC-2.3): Description, acceptability, prevalence and performance in the MECA study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *35*, 865-877.

Shaffer, D. M., Fisher, P. W., Lucas, C. P., Dulcan, M. K., & Schwab-Stone, M. E. (2000). NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC-IV): Description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*, 28-38.

Sickmund, M. (2002). *Crime funnels: US response to crime.* Pittsburgh, PA: National Center for Juvenile Justice.

Snyder, H. N., & Sickmund, M. (1999). *Juvenile offenders and victims: 1999 national report.* Washington, DC: Office of Juvenile Justice and Delinquency Prevention.

Snyder, H. N., & Sickmund, M. (2006). *Juvenile offenders and victims: 2006 National report.* Washington, DC: Office of Justice Programs.

Stinson, F. S., Ruan, W. J., Pickering, R., & Grant, B. F. (2006). Cannabis use disorders in the USA: Prevalence, correlates and co-morbidity. *Psychological Medicine*, *36*, 1447-1460.

Teplin, L. A., Abram, K. M., McClelland, G. M., & Dulcan, M. K. (2002). Psychiatric disorders in youth in juvenile detention. *Archives of General Psychiatry*, *59*, 1133-1143.

U.S. Department of the Interior, Bureau of Indian Affairs. (2010). *What we do*. Retrieved from http://www.bia.gov/WhatWeDo/index.htm

Vincent, G. M., Grisso, T., Terry, A., & Banks, S. (2008). Sex and race differences in mental health symptoms in juvenile justice: The MAYSI-2 national meta-analysis. *Journal of the American Academy of Child & Adolescent Psychiatry*, *47*, 282-290.

Wasserman, G. A., McReynolds, L. S., Ko, S. J., Katz, L. M., & Carpenter, J. (2005). Gender differences in psychiatric disorders at juvenile probation intake. *American Journal of Public Health*, *95*, 131-137.

Wasserman, G. A., McReynolds, L. S., Ko, S. J., Katz, L. M., Cauffman, E., Haxton, W., & Lucas, C. P. (2004). Screening for emergent risk and service needs among incarcerated youth: Comparing MAYSI-2 and Voice DISC-IV. *Journal of the American Academy of Child & Adolescent Psychiatry*, *43*, 629-639.

Wasserman, G. A., McReynolds, L. S., Lucas, C. P., Fisher, P. W., & Santos, L. (2002). The Voice DISC-IV with incarcerated male youth: Prevalence of disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*, *41*, 314-321.

Wasserman, G. A., McReynolds, L. S., Musabegovic, H., Whited, A. L., Keating, J. M., & Huo, Y. (2009). Evaluating Project Connect: Improving juvenile probationers' mental health and substance use service access. *Administration and Policy in Mental Health and Mental Health Services Research*, *36*, 393-405.

Wasserman, G. A., McReynolds, L. S., Whited, A. L., Musabegovic, H., Huo, Y., & Keating, J. M. (2008). Juvenile probation officers' mental health decision making. *Administration and Policy in Mental Health and Mental Health Services Research*, *35*, 410-422.

Young, D. W., Dembo, R., & Henderson, C. (2007). A national survey of substance abuse treatment for juvenile offenders. *Journal of Substance Abuse Treatment*, *32*, 255-266.

Gail A. Wasserman is a professor of clinical psychology in child psychiatry in the Division of Child and Adolescent Psychiatry at the College of Physicians and Surgeons at Columbia University. She directs Columbia's Center for the Promotion of Mental Health in Juvenile Justice (www.promotementalhealth.org), a research and policy entity that offers guidance to juvenile justice agencies in how to best structure their services to allow for efficient identification and referral for services for youth with mental health service needs. She has been conducting research on developmental psychopathology for 30 years. She has authored or coauthored approximately 100 articles for academic and practitioner audiences.

Larkin S. McReynolds, PhD, is an assistant professor of clinical epidemiology at Columbia University's Mailman School of Public Health and a research scientist with the NYS Office of Mental Health, Office of Performance Measurement and Evaluation. She also serves as the research director for the Center for the Promotion of Mental Health in Juvenile Justice. Her current research interests include gender-specific (and neutral) risks for reoffending associated with psychiatric disorder, suicidal and self-injurious behavior among justice-involved youth, evaluating mental health screening and assessment protocols in a variety of juvenile justice settings, and evaluating risk assessment procedures for screening sex offenders for civil commitment.

Craig S. Schwalbe, PhD, LSW, is an assistant professor at Columbia University's School of Social Work. His research examines evidence-based approaches to probation with high-risk youth. His published research includes studies of actuarial risk assessment predictive validity and of probation approaches and strategies employed with justice-involved youth in treatment as usual settings.

Joseph M. Keating, BS, a former data analyst for the Center for the Promotion of Mental Health in Juvenile Justice, is currently a research coordinator at the New York University School of Medicine. His current research involves examining the consequences of obstructive sleep apnea on daytime functioning. He earned his BS from Fordham University and a premedical studies postbaccalaureate certificate from Columbia University.

Shane A. Jones, BA, a former data manager for the Center for the Promotion of Mental Health in Juvenile Justice, is currently a freelance consultant in New York. His interests include topics in both mental health and education. He received his BA in psychology from Columbia University.