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# Psychiatric Disorder in a Juvenile Assessment Center

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Juvenile assessment centers (JACs) were developed to address service fragmentation and promote the sharing of information among agencies providing services to youth involved with the juvenile justice system. To date, there are no reports that describe the diagnostic profiles of the youth served by such centers. The authors hypothesize that the rates of psychiatric disorder among youth at JAC intake would be lower than rates reported for youth in secure care, that girls would show higher rates of some disorders, and that those with substance disorders would show higher rates of other, co-occurring disorders. Disorder was measured on the Voice Diagnostic Interview Schedule for Children in 1,012 randomly selected youth (248 girls). Rates of disorder for JAC youth are lower than those reported for incarcerated samples and more comparable to other general intake samples; JAC youth's diagnostic profiles remain elevated compared to youth in the general population, and girls report higher rates of disorder in three of four diagnostic clusters examined. Clinical and policy implications are discussed.

**Keywords:** *juvenile justice; psychiatric disorder; prevalence; Voice DISC; juvenile assessment center (JAC)*

Youth in contact with the juvenile justice system have a variety of social, educational, and health needs (e.g., American Academy of Pediatrics Committee on Adolescence, 2001; Office of Juvenile Justice and Delinquency Prevention, 1994; Snyder & Sickmund, 2006) that justice agencies struggle to address. Recent investigations document high levels of mental health

and co-occurring substance use problems (Abram, Teplin, McClelland, & Dulcan, 2003; Teplin, Abram, McClelland, & Dulcan, 2002; Wasserman, McReynolds, Lucas, Fisher, & Santos, 2002) as well as increased risk for suicidal behavior (e.g., Penn, Esposito, Schaeffer, Fritz, & Spirito, 2003; Rohde, Seeley, & Mace, 1997; Sanislow, Grillo, Fehon, Axelrod, & McGlashan, 2003) relative to youth in the general community. For the most part, these studies have examined youth in secure care, whether it be detention or post-adjudicatory incarceration, and have consistently reported that two thirds endorse one or another disorder (Skowrya & Coccozza, 2006). Most justice youth, however, are not confined, but are managed in their communities (Snyder et al., 2006). Because incarcerated youth are likely to be a more seriously impaired subset of the general intake population of young offenders, their service needs might be expected to be higher than those for the larger youth intake population. Only a few studies, however, have documented rates of disorder among this larger youth intake population. Among formal probation referrals, for example, approximately 45% of youth reported mental health and substance-use disorders (Wasserman, McReynolds, Ko, Katz, & Carpenter, 2005; Wasserman & McReynolds, 2006), compared to 20% of youth in general population studies (U.S. Department of Health and Human Services, 1999) and 65% of securely held youth (Skowrya et al., 2006).

Although the proportion of girls with justice-system contact has shown recent strongly increasing trends, with few exceptions (Teplin et al., 2002; Wasserman et al., 2005) little is known about their mental health status and service needs. Antisocial and disruptive behavior is far more common in young males than in young females: Girls' conduct disorder (CD) rates are

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approximately half that of boys' rates (American Psychiatric Association, 1994), and across all types of criminal activity, only 28% of arrested youth are female (Snyder et al., 2006). This disparity may reflect a "gender paradox" (Eme & Kavanaugh, 1995; Keenan, Loeber, & Green, 1999; Loeber & Keenan, 1994; Tiet, Wasserman, Loeber, McReynolds, & Miller, 2001). A gender paradox occurs when the gender less likely to be disordered has a more severe form or presentation of the disorder; more specifically, this suggests that antisocial females will be more impaired across a range of co-occurring social, health, or educational domains than are antisocial males.

As a consequence, delinquent girls, relative to delinquent boys, may be expected to have elevated mental health problems (Eme et al., 1995; Kataoka et al., 2001). In community samples, moderate co-occurrence of internalizing (anxiety and affective) and externalizing (disruptive behavior and substance use) disorders is reported in both genders (Moffitt, Caspi, Rutter, & Silva, 2001); sometimes co-occurrence is higher among adolescent and young adult females than in males (Ferdinand, Stijnen, Verhulst, & Van der Reijden, 1996; Overbeck, Vollebergh, Meeus, Engels, & Luijpers, 2002). Even higher associations might be expected in adolescents with conduct or substance problems that are sufficiently severe as to result in justice-system contact (Overbeck et al., 2002). Associations between conduct and mood symptoms (and corresponding diagnoses) increase with age, particularly for females, perhaps reflecting secondary adverse mental health consequences for antisocial girls (Moffitt et al., 2001).

Despite high rates of disorder and regardless of gender, justice-involved youth often do not access the mental health services they need. Even more so than for youth in the general community, there are insufficient mental health services to treat justice-involved youth who need them (U.S. Department of Health and Human Services, 1999). Justice agencies are particularly ill equipped to address youths' mental health service needs (Skowrya et al., 2006), especially as the migration of effective mental health assessment and treatment practices into these service systems has been slow (Schoenwald & Hoagwood, 2001). As an example, incarcerated youth in South Carolina had a significantly lower lifetime utilization of outpatient and acute mental health services than did their counterparts being served by a local community health center (Pumariega et al., 1999). In a California study, only 6% of incarcerated youth received a mental health referral (Rogers, Zima, Powell, & Pumariega, 2001), although, as noted above, as many as 65% of incarcerated youth endorse one or another disorder.

To make use of a more integrated approach to intake, screening, and service delivery for delinquents, in 1993, the Florida legislature charged that

state's department of juvenile justice (FL-DJJ) with creating a "juvenile assessment center" (JAC) in Tampa. JACs were developed to serve as a focal point of the justice system through which youth might be connected to all related agencies and services (e.g., child welfare, mental health and alcohol and drug treatment, and other social services). Implementation spread statewide in the following year. Other states have followed suit, with most relying heavily on the Florida model (Silverthorn, 2003). In 1995, reviewing the various models of JACs being utilized across the country, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) developed a prototype for JACs that included four essential components: (a) a *single point of entry* facilitated by a 24-hour/day centralized intake, (b) an immediate and comprehensive *needs assessment* to promote more appropriate placement, (c) a comprehensive and integrated *management information system* to track services provided and treatment progress, and (d) integrated *case management* to allow agencies to better coordinate and monitor the services provided to a particular youth. The National Council on Crime and Delinquency (NCCD) reviewed these efforts in a comprehensive report (NCCD, 1999).

Although the utilization of a comprehensive needs assessment is a central facet of the JAC approach (Oldenettel & Wordes, 2000), there are no reports that describe the diagnostic profiles of the youth served by such centers. Two published reports (Cocozza et al., 2006; Oldenettel & Wordes, 2000) consider the demographic and offense characteristics of youth seen in a JAC; one of those (Oldenettel & Wordes, 2000) reviewed the characteristics of all 1998 intakes at the Orange County (Orlando, Florida) JAC (OC-JAC). For that year, 75% were male, and most were either African American (48%) or White (37.5%). Seventy-two percent were between 15 and 18 years old. Nearly half (42%) were charged with a misdemeanor, most commonly a property offense. More than half resided in single-parent households.

Beginning operation in November 1994, the OC-JAC provides intake and assessment capabilities for approximately 10,000 young people a year, with intake staff completing detention screening on all youth. It functions as a centralized processing, referral, and evaluation center for all juveniles taken into custody from the community by police or other officials in response to concerns of delinquent behavior. Current practice at the OC-JAC includes universal screening for suicide and emergent risk, with those thought to be at increased risk for mental health problems seen by a clinical evaluator.

Our goals were to add to the sparse literature on the prevalence of disorder in general intake populations of juvenile offenders, to examine gender differences in disorder in a JAC population, and to describe youth

with co-occurring juvenile justice and mental health problems in terms of offense, demographic, and mental-health characteristics. We anticipated that rates of disorder would be higher than those seen in general community samples of adolescents yet lower than those reported for youth in secure care settings. We also anticipated that youth with substance disorders would show higher rates of other, co-occurring disorders and that girls would show elevated rates of most mental health concerns.

## Method

### Setting

In January 2003, Chief Judge Belvin Perry Jr., 19th Judicial Circuit, commissioned the Debborah Dickerson Mental Health Juvenile Justice Task Force, composed of representatives from local school, juvenile justice, and mental health agencies and advocates (see authors' note for participants). Its mission was to design and implement a model service-delivery system to address the mental health needs of youth in the Orange County juvenile justice system. To assess these youth's mental health status, the task force established an agreement with the Center for the Promotion of Mental Health in Juvenile Justice (CPMHJJ) at Columbia University for assistance in estimating the prevalence of psychiatric disorder for youth in its care. In late 2004, the FL-DJJ coordinated diagnostic screening during the intake process for youth referred to the OC-JAC. Diagnostic screening made use of the Voice Diagnostic Interview Schedule for Children (Voice DISC, or V-DISC; Shaffer et al., 1996; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), an extensively researched computer-assisted self-interview widely used in juvenile justice settings.

### Subjects

Between November 1, 2004, and February 28, 2005, 3,211 youth were processed through intake at the OC-JAC. Although it was our intent to offer the assessment to all incoming youth, limitations in staff resources resulted in the assessment's being offered to 1,090 youth (34%). Of these, 78 (7.2%) did not complete the V-DISC assessment or their V-DISC data were not retrieved. Among these 78 individuals, 39 either refused participation or requested to terminate the interview before completion; 27 youths' electronic V-DISC data were corrupted or accidentally deleted before sending

to CPMHJJ, and the remainder were excluded for reasons such as youth misbehavior, technical difficulties, and scheduling conflicts.

## Procedure

Participation was voluntary. The research protocol was reviewed and approved by the institutional review boards of FL-DJJ and Columbia University. Following a daylong training in using the V-DISC software, probation staff supervised the administration process from a distance. Youth were asked to self-administer the V-DISC within hours after arriving at the OC-JAC. Other assessments were completed on the same day. After data collection was complete, FL-DJJ provided CPMHJJ with hard and electronic copies of data files, including additional demographic and justice information, for all approached youth. Following data linkage at CPMHJJ, identifiers were removed.

## Measures

*Demographic and justice characteristics.* Information on age, ethnicity, school grade, date of probation intake, age at first referral, number of prior referrals, and most serious offense for the current referral were extracted from justice records. Current offenses were designated as sexual (0.4%), person-related nonsexual (15.0%), property (25.7%), substance related (9.2%), weapon related (6.0%), or “other” (34.2%). “Other” offenses included probation violation, pick-up/court order, disturbing the peace, and resisting arrest without violence. Data for youth whose current offense was classified as “other” but who were brought in for either a probation violation or a pick-up/court order were recoded to reflect their originating offense. Offense categories were further classified as violent (person or weapon related) or nonviolent, and as felonies or misdemeanors.

From the demographic section of the V-DISC, we extracted information on youths’ reports of the person(s) with whom they resided. Youth living with a natural, adoptive, or stepparent or grandparent were coded as “living with a close relative.”

*Psychiatric assessment.* The DISC is a family of highly structured psychiatric interviews based on *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) criteria and has been used in research investigating prevalence of disorders among youth in the justice system (Atkins, Pumariega, & Rogers, 1999; Duclos

et al., 1998; Garland et al., 2001; Randall, Henggeler, Pickrel, & Brondino, 1999). The voice version generates disorders present in the past month by prerecorded questions delivered via headphones (viewed simultaneously on a computer screen). By reducing the need for an interviewer, the V-DISC offers advantages for low-resource settings, such as those in juvenile justice, that screen for provisional diagnostic status (Wasserman, Jensen, Ko, Trupin, & Coccozza, 2003); the V-DISC is in wide use across a range of juvenile justice settings nationwide (see [www.promotementalhealth.org](http://www.promotementalhealth.org) for more information). The V-DISC's validity has been demonstrated in reference to substance use (Wasserman et al., 2002), parent report (Wasserman et al., 2005), and risks for suicidal behavior (Wasserman & Reynolds, 2006).

We examined 20 disorders grouped into four diagnostic clusters (Wasserman et al., 2002): disruptive behavior disorders (DBDs), substance use disorders (SUDs), affective disorders, and anxiety disorders. The V-DISC inquires about the degree to which a young person judges an endorsed disorder to be functionally impairing in home, school, or peer settings. Because of concerns regarding the capacity of justice-involved youth to accurately report impairment (Wasserman et al., 2002), analyses consider criteria without impairment. Because of expectably elevated rates of separation anxiety disorder (Schalling, 1978), analyses for the *anxiety* cluster were based on all other measured anxiety disorders. We considered DBDs and SUDs to be externalizing disorders, whereas affective and anxiety disorders reflected internalizing disorders. Other aspects of youth's mental health considered include number of disorders, number of diagnostic clusters, and cross-domain psychopathology (e.g., co-occurring internalizing and externalizing disorder).

## Analysis

We first examined demographic, offense, and mental health characteristics. Next, we considered rates of disorder among those with and without a co-occurring SUD and among males and females separately. Then, from the pool of potential contributors to each diagnostic cluster, we retained those associated ( $p < .20$ ) with one or another cluster in bivariate analyses. Ethnicity was retained in all models. Next, logistic regression analyses (SPSS Version 14.0) predicted the likelihood of each diagnostic cluster from youth characteristics, including gender, ethnicity, age, residence with close relative, age at first referral, number of prior referrals, and whether the most serious current offense was violent. Interactions with gender were considered.



## Results

### Demographic and Offense Characteristics

Table 1 shows sample characteristics for youth who did and did not complete the DISC by gender (for participants only). Among approached youth, those who completed the DISC had fewer prior referrals ( $t_{77.9} = 2.85, p = .006$ ) and were older at first justice system contact ( $t_{1072} = 2.29, p = .022$ ) than those who did not complete the DISC; there were no other significant differences between those who did and did not complete the DISC.

Most participants were male and African American or White; the mean age was approximately 15 years. About 80% of the sample lived with a close relative. After reclassifying youth currently appearing for an "other" offense according to their originating offenses, approximately 40% had been charged with property offenses, nearly a quarter with person-related nonsexual offenses, and approximately 14% with either a substance-related or "other" offense. Table 1, and subsequent analyses, reflect this reclassification.

For more than half of the participants, current charges were at the felony level; for approximately a third, the most serious current offense was characterized as violent. On average, participants had more than three prior referrals. The characteristics of the present sample were generally comparable to those for all youth assessed at the OC-JAC during the period of data collection in terms of gender, age, and ethnicity (S. Dalsemer, personal communication, May 22, 2006). The present sample was also quite similar to the 1998 OC-JAC population (Oldenettel & Wordes, 2000) in terms of age, gender, and ethnicity, but because of our reclassification of some "other" offenses to reflect their originating offense, the present sample included a greater proportion of felony offenders than described in 1998 (56% vs. 27%).

Among participants, males and females differed somewhat in demographic and offense characteristics (Table 1). Males had significantly more prior juvenile justice referrals ( $t_{546.3} = 5.05, p = .000$ ) than females and were a few months younger at first referral ( $t_{486.7} = 4.63, p = .000$ ). Significantly more females were charged with a felony offense than were males ( $\chi^2_1 = 29.09, p = .000$ ). There were no other significant gender differences in demographic or offense characteristics.

### Mental Health Characteristics

Table 2 shows rates of disorder and diagnostic clusters for the sample as a whole and by gender. Nearly one third of participants reported meeting

**Table 1**  
**Sample Demographic and Offense Characteristics**

Characteristic	Participants			
	Total ( <i>N</i> = 1,012 <sup>a</sup> )	Males ( <i>n</i> = 764 <sup>a</sup> )	Females ( <i>n</i> = 248 <sup>a</sup> )	Nonparticipants ( <i>n</i> = 78)
	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)
Age, year	15.4 (1.6)	15.4 (1.5)	15.4 (1.6)	15.3 (2.0)
Last completed school grade	9.3 (1.6)	9.3 (1.6)	9.4 (1.6)	8.8 (1.7)
Number of prior referrals <sup>b</sup>	3.3 (3.9)	3.7 (4.1)***	2.4 (3.1)	5.5 (6.6)
Age at first referral <sup>c</sup>	13.2 (2.2)*	13.1 (2.3)***	13.8 (1.9)	12.6 (2.4)
Gender				
Male	764 (75.5)	764 (100.0)	—	59 (84.3)
Female	248 (24.5)	—	248 (100.0)	11 (15.7)
Lives with close relative	811 (80.1)	606 (79.3)	205 (82.7)	—
Ethnicity				
African American	542 (53.6)	408 (53.4)	134 (54.0)	48 (70.6)
Hispanic	155 (15.3)	114 (14.9)	41 (16.5)	10 (14.7)
White	306 (30.2)	236 (30.9)	70 (28.2)	10 (14.7)
Other	9 (0.9)	6 (0.7)	3 (1.2)	0 (0.0)
Most serious current offense <sup>b</sup>				
Sex offense	13 (1.3)	13 (1.7)	0 (0.0)	1 (1.3)
Person related (nonsexual)	250 (24.7)	166 (21.8)	84 (33.9)	17 (22.4)
Property	396 (39.2)	314 (41.2)	82 (32.9)	24 (31.6)
Weapon	71 (7.0)	63 (8.3)	8 (3.2)	7 (9.2)
Substance	139 (13.7)	112 (14.7)	10.9 (11.1)	13 (17.1)

(continued)

**Table 1 (continued)**

Characteristic	Participants			
	Total ( <i>N</i> = 1,012 <sup>a</sup> )	Males ( <i>n</i> = 764 <sup>a</sup> )	Females ( <i>n</i> = 248 <sup>a</sup> )	Nonparticipants ( <i>n</i> = 78)
	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)
Other <sup>d</sup>	142 (14.0)	95 (9.4)	46 (18.9)	14 (18.4)
Violent	334 (33.0)	242 (31.7)	92 (37.1)	25 (32.9)
Felony	564 (55.8)	390 (52.1)	165 (67.9)***	46 (60.5)

a. In a few instances, demographic or offense information was unavailable.

b. Significant gender difference.

c. Participants > nonparticipants,  $p < .05$ .

d. "Other" offense category includes underage possession of alcohol, disturbing the peace, resisting arrest without violence, runaway status, or traffic violations.

\* $p < .05$ . \*\*\* $p < .001$

criteria for at least one disorder, almost 20% met criteria for an anxiety disorder, and 5% met criteria for an affective disorder. Approximately 10% reported meeting criteria for either an SUD or a DBD. Among those reporting an SUD, rates of marijuana abuse and dependence were higher than for other SUDs.

There were gender differences in three of the four diagnostic clusters, such that significantly more females reported anxiety ( $\chi^2_1 = 18.08, p = .000$ ), affective ( $\chi^2_1 = 15.69, p = .000$ ), and disruptive behavior disorders ( $\chi^2_1 = 7.68, p < .01$ ). Females reported higher rates of nearly all component anxiety and affective disorders, significantly so for agoraphobia ( $\chi^2_1 = 4.29, p < .05$ ), specific phobia ( $\chi^2_1 = 15.43, p = .000$ ), posttraumatic stress disorder ( $\chi^2_1 = 9.50, p < .005$ ), panic disorder ( $\chi^2_1 = 7.57, p < .01$ ), separation anxiety ( $\chi^2_1 = 4.73, p < .05$ ), and major depressive disorder ( $\chi^2_1 = 16.08, p = .000$ ). Although females also reported higher rates of each DBD component disorder, the only significant gender difference within the DBD cluster was for oppositional defiant disorder, with females higher ( $\chi^2_1 = 18.93, p = .000$ ). Although there were no gender differences in the overall SUD cluster, significantly more females than males met criteria for alcohol abuse ( $\chi^2_1 = 4.68, p < .05$ ).

**Table 2**  
**Voice DISC Diagnostic Profiles for Overall**  
**Sample and by Gender<sup>a</sup>**

Disorder	Overall (N = 1,012)		Males (n = 764)		Females (n = 248)	
	N	%	n	%	n	%
Any DISC disorder	301	29.7	205	26.8	96	38.7***
Any anxiety disorder <sup>b</sup>	172	17.0	108	14.1	64	25.8***
Agoraphobia	72	7.4	47	6.4	25	10.5*
Generalized anxiety disorder	20	2.1	14	1.9	6	2.5
Obsessive-compulsive disorder	32	3.3	21	2.9	11	4.6
Panic disorder	25	2.6	13	1.8	12	5.0**
Posttraumatic stress disorder	23	2.4	11	1.5	12	5.1**
Social phobia	40	4.1	26	3.5	14	5.8
Specific phobia	70	7.2	39	5.3	31	12.9***
Separation anxiety disorder	175	18.1	121	16.5	54	22.8*
Any affective disorder	50	4.9	26	3.4	24	9.7***
Manic episode	6	0.6	4	0.6	2	0.9
Hypomanic episode	5	0.5	2	0.3	3	1.3
Major depressive disorder <sup>c</sup>	44	4.6	22	3.1	22	9.4***
Dysthymic disorder	1	0.1	1	0.1	0	0.0
Any disruptive disorder	104	10.3	67	8.8	37	14.9**
Attention deficit/ hyperactivity disorder	8	0.9	4	0.6	4	1.9
Conduct disorder <sup>d</sup>	80	8.6	58	8.2	22	9.6
Oppositional defiant disorder	34	3.6	15	2.1	19	8.3***
Any substance use disorder	106	10.5	82	10.7	24	9.7
Alcohol abuse	20	2.1	11	1.6	9	3.9*
Alcohol dependence	12	1.2	9	1.2	3	1.2
Marijuana abuse	41	4.4	34	4.8	7	3.1
Marijuana dependence	45	4.8	35	5.0	10	4.4
Other substance abuse	7	0.8	5	0.7	2	0.9
Other substance dependence	11	1.2	6	0.9	5	2.2

Note: DISC = Diagnostic Interview Schedule for Children (Shaffer et al., 1996; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000).

a. Because of early termination, prevalence for some diagnoses is based on a slightly reduced number.

b. Anxiety diagnostic cluster does not consider presence of separation anxiety disorder.

c. Present state DISC and *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) criteria necessitate that youth with major depressive disorder do not also receive a diagnosis of dysthymia.

d. Past 6 months.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Internalizing and externalizing disorders commonly co-occurred, particularly in females. Among youth with externalizing disorders, significantly more females than males with SUDs also reported an anxiety (41.7% vs. 18.3%;  $\chi^2_1 = 5.63, p < .02$ ) or an affective disorder (25.0% vs. 2.4%;  $\chi^2_1 = 13.54, p = .000$ ). Similarly, significantly more females than males who endorsed a DBD also reported an affective disorder (27.0% vs. 10.4%;  $\chi^2_1 = 4.79, p < .05$ ). Among youth with a DBD, males and females did not differ in regard to their rates of affective disorder.

Females reported having significantly more disorders ( $t_{315.41} = 3.54, p = .000$ ) and having disorder in more diagnostic clusters ( $t_{343.58} = 3.67, p = .000$ ) and were more likely to report cross-domain psychopathology (9.3% vs. 3.7%;  $\chi^2_1 = 12.31, p = .000$ ).

### Prevalence of Disorder With and Without an SUD

To examine the likelihood of co-occurring mental health and SUDs, we examined prevalence of psychiatric disorder in those with an SUD ( $n = 106$ ) and in those with some disorder other than an SUD ( $n = 193$ ). Compared to youth with only non-substance use disorders, substance-disordered youth endorsed significantly more disorders (1.8 vs. 1.3;  $t_{149.3} = 4.87, p < .05$ ) and also endorsed disorder in significantly more clusters (1.7 vs. 1.2;  $t_{149.3} = 4.87, p < .001$ ). Expectedly, the most common co-occurring disorder among substance-disordered youth was a DBD (40.6%), followed by 23.6% with a co-occurring anxiety disorder and 7.5% with a co-occurring affective disorder.

### Predicting Disorder From Youth Characteristics

Table 3 presents results of logistic regression analyses predicting diagnostic clusters from demographic and offense characteristics. Because results for analyses comparing associations with age and school grade were expectedly very similar (data not shown), final analyses controlled for gender, age, ethnicity, residence with a close relative, age at first offense, number of prior referrals, and whether the originating offense was violent.

Altogether, youth characteristics explained 5.6% to 7.4% of the variance in diagnostic cluster outcomes. In adjusted analyses, anxiety disorders were significantly elevated in girls and in those with more prior justice contacts. Affective disorders were 3 times more common in girls and significantly more likely in those with current violent offenses. DBDs were significantly more common in girls, and compared to African American youth, White

**Table 3**  
**Predictors of DISC Diagnostic Clusters (n = 992)**

Predictor Variables	Any Anxiety Disorder		Any Affective Disorder		Any Disruptive Disorder		Any Substance Use Disorder	
	OR (95% CI)	R <sup>2</sup> <sup>a</sup>	OR (95% CI)	R <sup>2</sup>	OR (95% CI)	R <sup>2</sup>	OR (95% CI)	R <sup>2</sup>
Female	2.36 (1.64-3.41)***	3.1	3.46 (1.89-6.33)***	4.5	1.68 (1.08-2.61)*	1.5	0.88 (0.54-1.44)	0.0
Age	0.83 (0.73-0.94)	4.4	0.86 (0.70-1.07)	5.3	0.88 (0.75-1.04)	2.1	1.18 (0.99-1.40)	2.3
Ethnicity		4.8		5.4		3.4		4.3
African American vs. White	1.03 (0.70-1.52)		0.86 (0.44-1.70)		0.64 (0.40-1.00)*		0.54 (0.34-0.84)**	
Hispanic vs. White	0.70 (0.40-1.24)		0.98 (0.40-2.40)		0.56 (0.29-1.07)		0.48 (0.25-0.93)*	
Lives with close relative	1.06 (0.69-1.63)	4.8	0.87 (0.43-1.77)	5.5	1.38 (0.77-2.46)	3.7	1.33 (0.76-2.32)	4.5
Age at first offense	1.03 (0.93-1.14)	4.9	0.96 (0.81-1.14)	5.8	1.07 (0.93-1.22)	4.6	1.11 (0.98-1.26)	5.2
Number prior referrals	1.06 (1.00-1.11)*	5.6	1.05 (0.96-1.14)	6.2	0.94 (0.87-1.02)	5.0	1.08 (0.94-1.08)	5.2
Violent current offense	1.14 (0.80-1.63)	5.6	1.83 (1.02-3.30)*	7.4	1.25 (0.81-1.91)	5.2	0.62 (0.38-0.99)*	6.0

Note: DISC = Diagnostic Interview Schedule for Children (Shaffer et al., 1996; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000); OR = odds ratio; CI = confidence interval.

a. Cumulative Nagelkerke's R<sup>2</sup> for logistic regression from SPSS.

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

youth were almost twice as likely to report a DBD. White youth were twice as likely as either Hispanic or African American youth to report an SUD, and those with current violent charges were only half as likely as nonviolent offenders to report an SUD.

## Discussion

Thirty percent of youth undergoing OC-JAC intake met criteria for one or another probable psychiatric disorder, with nearly one fifth reporting an anxiety disorder. Expectedly, girls showed almost a tripling of affective disorder and twice the rate of anxiety disorder reported by boys. Girls also showed higher rates of DBDs, accounted for by their fourfold elevation in rates of oppositional defiant disorder (ODD). Overall, there were no gender differences in rates of SUDs. Anxiety disorders were more common in those who were younger, and substance disorders were more common in those who were older. Offense characteristics contributed to rates of both internalizing disorder clusters: Those with more prior justice referrals were slightly more likely to report anxiety disorders, and those charged with violent offenses were twice as likely to report an affective disorder. Youth charged with violent offenses were only half as likely to report an SUD.

### Gender Differences in Disorder

Females reported higher rates in three of the four diagnostic clusters: anxiety, affective disorder, and SUD. In contrast, in a similar investigation of rates of disorder for juvenile probation intakes in Texas (Wasserman et al., 2005), although significantly more females reported internalizing disorders, there were no gender differences in SUD. The increased rate of DBDs in females in the OC-JAC sample was explained by their fourfold increase in ODD. It has been suggested that the relatively large (and growing) proportion of girls' being arrested nationwide reflects 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 (the construct underlying the diagnostic category of ODD), these data would support that suggestion. In Texas, females' rates of ODD were only twice as high, insufficiently elevating the overall DBD cluster in girls (Wasserman et al., 2005).

## Youth With Co-Occurring Substance Disorders

Substance-disordered youth reported more other disorders across a range of diagnostic areas than did those without an SUD. Among those with an SUD, rates of DBD and anxiety disorder were particularly elevated. Rates of comorbidity among substance-disordered youth were substantially more elevated for some disorder pairings in an earlier report that considered juvenile detainees (Abram et al., 2003) compared to the present JAC sample (62% vs. 40.6% for DBDs and 21% vs. 7.5% for affective disorders). Differences between the two samples in rates of comorbidity with SUD are likely explained by the considerably higher rate of SUD in the detention sample (Teplin et al., 2002) as well as differences in assessment methodology. Nonetheless, rates of comorbidity for substance-disordered youth in the present study were notably elevated compared to non-substance-disordered youth.

## Comparisons With Justice Youth From Other Settings

Although both JAC and probation intake settings are initial entry points into the juvenile justice system, most rates of disorder in the present sample are lower than those reported among formal probation referrals (Wasserman et al., 2005). Differences in rates of disorder across the two samples might reflect the somewhat more serious impairment likely seen in formal referrals as opposed to those undergoing general intake. One other possible explanation for the different rates of disorder across these general intake settings might be the varying ethnic distributions in youth assessed. The earlier Texas sample included 50% Hispanics, 28% African Americans, and 20% Whites; far more African Americans appear in the present sample (54%). Other investigations in juvenile justice (Teplin et al., 2002) and nonjustice (Lau et al., 2006; Roberts, Alegria, Roberts, & Chen, 2005) samples of youth generally report lower rates of self-identified disorder among African Americans relative to either Hispanics or Whites. In the OC-JAC sample, however, White youth reported elevated rates only for DBDs and SUDs relative to their African American or Hispanic counterparts; rates of anxiety and affective disorders were similar across ethnicity. Overall, then, differences in ethnicity did not fully explain the substantially lower rates of disorder reported in Orlando.

As hypothesized, rates of disorder were lower in the present JAC sample than have been reported in earlier studies of detained (Teplin et al., 2002) or incarcerated (Wasserman et al., 2002) youth. The lower rates of disorder in the present sample compared to samples of incarcerated youth are expected given that the JAC sees youth at their initial processing point for juvenile



justice system entry. Many will not penetrate further into the juvenile justice system (Sickmund, 2002). A JAC intake sample is likely to include a small proportion of youth who will shortly go on to more secure care and a much larger proportion who will be managed in their communities. Those who go on to more serious sanctions differ systematically in terms of misbehavior and substance use from those who will remain in their communities. Composed as it is of two different subsets of youth, it is not surprising that the group of youth undergoing JAC intake reports a rate of mental health problems that is substantially lower than that seen in more securely held youth.

### **Associations Between Affective Disorder and Violence**

We found that those charged with a violent offense were twice as likely to endorse an affective disorder. A consistent link has been demonstrated between violent behavior and depressed mood among school-age youth (Mattila, Parkkari, & Rimpela, 2006; Seals & Young, 2003), adolescent bullies (Ireland, 2005), and adults from the National Comorbidity Study (Corrigan & Watson, 2005), perhaps mediated by alcohol use (Borges, Cherpitel, Medina-Mora, & Mondragon, 2004; Corrigan & Watson, 2005). As demonstrated in the present investigation, associations between violent behavior and mood are evident, even in general intake juvenile justice settings.

### **Clinical Implications**

Systematic screening identified approximately 30% youth as having a disorder. However, a descriptive review of youth processed in the OC-JAC in 1998 (NCCD, 1999) found that on the basis of usual case identification practices, only 5% were referred for any type of mental health counseling. "Usual case identification practices" in this setting, as in most juvenile justice intake settings, rely on assessment protocols whose efficacy has not been evaluated. The discrepancy (between those identified with systematic screening vs. with usual practices) demonstrates that the level of unmet need for mental health services in this population is substantial. A proactive approach that uses scientifically sound procedures identifies 6 times as many youth with mental health service needs. This latter proportion would be more in keeping with our broad understanding of the pervasiveness of mental health problems in justice-involved youth (Atkins et al., 1999; Garland et al., 2001; Teplin et al., 2002).

Finally, many youth enter the juvenile justice system with mental health concerns that were not detected earlier (Novins, Duclos, Martin, Jewett, & Manson, 1999). As is the case for general health assessments, systematic mental health screening in this type of setting, where assessment capabilities

are readily available, offers an important opportunity for early intervention with young and first-time offenders (American Academy of Pediatrics Committee on Adolescence, 2001).

## Policy Implications

Recent policy recommendations for mental health screening and assessment practices for justice-involved youth emphasize the need for a universal approach that employs scientifically sound instruments when identifying both youth's emergent risk and mental health service needs (Wasserman et al., 2003; Skowrya & Cocozza, 2006). Unfortunately, adherence to these recommendations is often not the case, even in secure settings (Gallagher & Dobrin, 2005, 2006). Although there appears to be greater consensus for the use of such procedures for youth in secure care, the considerable burden of disorder evident in general intake settings, such as we have examined here, suggests the parallel need to adopt and implement such recommendations in these less secure settings. On the other hand, the intention is that youth passing through JACs should undergo processing swiftly and efficiently. To a degree, then, this works against procedures aimed at comprehensive mental health assessment at facility intake. Nonetheless, JAC intake remains a point early on in the process where administrators should strive to identify youth's mental health service needs and attempt to establish protocols of referral (and follow-up) with mental health providers located in their community.

Several organizations have recommended the use of universal screening for identifying mental health service needs in justice youth (e.g., Skowrya & Cocozza, 2006; Wasserman et al., 2003), especially as many of these youth have not previously accessed mental health services in their communities (e.g., Kataoka, Zhang, & Wells, 2002; Novins et al., 1999). For the most part, recommendations for universal mental health screening have been aimed at youth entering secure custodial care. The present results underscore the need for a similarly consistent approach for those in more general intake populations. One of the stated goals of the JAC mission is to better integrate services for the youth it serves; it is difficult to understand how to accomplish this goal without a systematic needs assessment that includes universal screening for mental health service needs.

## Limitations

Only one third of those processed at the OC-JAC during our data collection window were actually assessed. As noted, this resulted from limitations in staff resources in that staff were not always available to supervise

assessments for youth arriving outside of normal “business hours” or those arriving in large groups. Moreover, this assessment employed a limited number of computers. Given both the intent to discharge youth as rapidly as possible and the necessity to provide other required assessments, not all youth who might have been willing were actually approached. Although it is possible that we were less likely to assess youth who co-offended in groups, as well as those arriving late at night, on the weekends, or during staff vacations, it is unclear in which direction, if at all, this would systematically bias the true rate of disorder.

Next, nonparticipants had more prior offenses and were younger at first justice contact, so this group might include more youth with “early-onset” (often violent) offending behavior (Moffitt, 1993). Including fewer of these youth would likely have resulted in underestimation of the rates of disorder.

Finally, our analyses explained only a small proportion of the outcome variance in disorder. Other studies have reported the contribution of factors such as family history of disorder when predicting youth mental health status (Rutter & Quinton, 1984). Indeed, our models would have benefited from including other, perhaps more causal and/or proximal, information, had this been available. On the other hand, in using data that are readily available to justice staff who are responsible for identifying youth’s mental health service needs at facility intake, the present findings speak to the ecological validity of the associations noted.

## Conclusion

Thirty percent of youth undergoing OC-JAC intake met criteria for one or another probable psychiatric disorder, with girls reporting higher rates of many disorders. This type of setting, where a range of assessments can be efficiently conducted, offers particular opportunities to determine service needs for young and first-time offenders at an early point in the juvenile justice intake process.

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