Psychiatric Disorders in Youth in Juvenile Detention

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Abstract

Background—Given the growth of juvenile detainee populations, epidemiologic data on their psychiatric disorders are increasingly important. Yet, there are few empirical studies. Until we have better epidemiologic data, we cannot know how best to use the system's scarce mental health resources.

Methods—Using the Diagnostic Interview Schedule for Children (DISC 2.3), interviewers assessed a randomly selected, stratified sample of 1829 African American, non-Hispanic white, and Hispanic youth (1172 males, 657 females, ages 10–18) arrested and detained in Cook County, Illinois (which includes Chicago and surrounding suburbs). We present six-month prevalence estimates by demographic subgroups (gender, race/ethnicity, and age) for the following disorders: affective disorders (major depressive episode, dysthymia, manic episode), anxiety (panic, separation anxiety, overanxious, generalized anxiety, and obsessive-compulsive disorders), psychosis, attention deficit hyperactivity disorder (ADHD), disruptive behavior disorders (oppositional defiant disorder, conduct disorder) and substance use disorders (alcohol and drug).

Results—Nearly two thirds of males and nearly three quarters of females met diagnostic criteria for one or more psychiatric disorders. Excluding conduct disorder (common among detained youth), nearly 60% of males and over two thirds of females met diagnostic criteria and had diagnosis-specific impairment for one or more psychiatric disorders. One half of males and almost one half of females had a substance use disorder, and over 40% of males and females met criteria for disruptive behavior disorders. Affective disorders were also prevalent, especially among females; 20% of females met criteria for a major depressive episode. Rates of many disorders were higher among females, non-Hispanic whites, and older adolescents.

Conclusion—These results suggest substantial psychiatric morbidity among juvenile detainees. Youth with psychiatric disorders pose a challenge for the juvenile justice system and, after their release, for the larger mental health system.

A great proportion of this country's youth are now involved in the juvenile justice system. In 1999, the FBI estimated there were 2.5 million arrests of juveniles.[1] In 1997, juvenile courts handled almost 1,800,000 delinquency cases.[2] On an average day, over 106,000 youth are in custody in juvenile facilities.[3] Almost 60% of detained youth are African American or Hispanic.[3] Moreover, recent changes in the laws – mandatory penalties for drug crimes and lowering the age that juveniles can be tried as adults – have resulted in more juveniles than ever before serving time. There are currently 163,200 cases per year of juveniles convicted and serving sentences.[2] Many are incarcerated in adult prisons, which do not have psychiatric services designed for juveniles. The number of females in the juvenile justice system is increasing at an even faster rate than the number of males[3] and is at an all time high.[2] Given the growth of juvenile detainee populations,[4] epidemiologic data on their

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psychiatric disorders are increasingly important. Like adult detainees, juvenile detainees with serious mental disorders have a constitutional right (under the 8th and 14th Amendments) to receive needed treatment.[5] Mental health professionals believe that providing psychiatric services to juvenile detainees could improve their quality of life and help reduce recidivism.[6–8] Until we have better data, we cannot know how best to use the system's scarce mental health resources.[9,10]

Despite the importance of psychiatric epidemiological data on juvenile detainees, there are few empirical studies[10] and little consistency in results. Among studies published since 1980,[7,11–28] (summary table available from authors), rates for affective disorder varied from 2%[15] to 88%.[7] Rates of substance use disorders ranged from 13%[14] to 88%.[7] This disparity in findings may be because youth were sampled at various points in the juvenile justice system (e.g., at admission, after conviction, etc.). In addition, there are three methodological problems:

1. **Biased Samples.** Previous studies used disparate exclusion criteria, e.g., excluding juveniles with psychotic symptoms, mental retardation or physical handicaps.[11] Many studies excluded females entirely[16,21] or sampled too few to analyze them.[25]

2. Small Samples. Some severe disorders have low base rates, between 1 and 4%.[29,30] Low base rates require large sample sizes to generate reliable estimates.[31] Some studies sampled too few subjects to generate reliable rates even for the more common disorders.[18,21]

3. Problems in Measurement. Some studies did not specify the diagnostic criteria,[18] used nonstandard or untested instruments,[16] or extracted diagnoses from case records.[17]

This study overcomes these methodological limitations. We have a large, random sample of juvenile detainees and used a reliable measure, the Diagnostic Interview Schedule for Children Version 2.3 (DISC),[32] to determine psychiatric diagnoses.

SUBJECTS AND METHODS

Subjects and Sampling Procedures

Subjects were 1829 male and female youth, 10–18 years old, randomly sampled from intake into the Cook County Juvenile Temporary Detention Center (CCJTDC) from November 1995 through June 1998. The sample was stratified by gender, race/ethnicity (African American, non-Hispanic white, Hispanic), age (10–13 years of age or 14 years and older), and legal status (processed as a juvenile or as an adult) to obtain enough subjects to compare key subgroups, e.g., females, Hispanics, and younger children.

CCJTDC receives approximately 8500 admissions each year[33] and is used solely for pretrial detention and for offenders sentenced for less than 30 days. All detainees under age 17 are held at CCJTDC, including youth processed as adults (automatic transfers to adult court). Youth up to age 21 may be detained in CCJTDC if they are still being prosecuted for an arrest that occurred when they were younger than 17.

Like juvenile detainees nationwide, approximately 90% of CCJTDC detainees are males, and most are racial/ethnic minorities.[3] CCJTDC's population is 77.9% African American, 5.6% non-Hispanic white, 16.0% Hispanic, and 0.5% other racial or ethnic groups. The age and offense distributions of CCJTDC detainees are also similar to detained juveniles nationwide.[3]

We chose the detention center in Cook County (which includes Chicago and surrounding suburbs) for three reasons: First, nationwide, most juvenile detainees live in and are detained in urban areas.[34] Second, Cook County is ethnically diverse and has the third largest Hispanic population in the US.[35] Studying Hispanics is important because they are the largest minority group in the US[36] and they are overrepresented in the justice systems.[3] Finally, the detention center's size (daily census of approximately 650 youth and intake of 20 youth per day) insured that enough subjects would be available.

No single site can represent the entire country because jurisdictions may have different options for diversion.[37,38] Nevertheless, Illinois' criteria for detaining juveniles are similar to other states'.[37] All states allow pretrial detention if the juvenile needs protection, is likely to flee, or is considered a danger to the community.[37,38]

Detainees were eligible to participate, regardless of their psychiatric morbidity, state of drug or alcohol intoxication, or fitness to stand trial. Within each stratum, we used a random numbers table to select names from CCJTDC's intake log. Throughout the study, we tracked how many subjects were still needed to fill each stratum. Project staff sampled the rarest cells first. When more than one subject was available for a stratum, a random numbers table was used. The final sampling fractions ranged from 0.018 to 0.689. (Additional information on the sample is available from the authors.)

Studying detained youth requires special procedures because they are minors, because they are detained, and because many do not have a parent or guardian who can provide appropriate consent.[39] Project staff approached subjects on their units, explained the project and assured them that anything they told us (except acute suicidal or homicidal risk) would be confidential. Detainees who chose to participate signed an *assent* form (if they were under 18 years of age) or *consent* form (if they were 18 or older). Federal regulations allow parental consent to be waived if the research involves minimal risk (45 CFR 46.116(c), 45 CFR 46.116(d), and 45 CFR 46.408(c)).[39,40] The Northwestern University IRB, the CDC IRB, and the US Office of Protection from Research Risks waived parental consent. However, as ethicists recommend, we nevertheless tried to contact parents to provide them an opportunity to decline participation and to offer them additional information (45 CFR46.116(D)[4]).[41,42] Despite repeated attempts to contact the parent or guardian, for 43.8% of subjects, none could be found. In lieu of parental consent, youth *assent* was overseen by a *Participant Advocate* representing the interests of the subjects. Federal regulations allow for a Participant Advocate if parental consent is not feasible (45 CFR 46.116[d]).[41] Of the 2275 names selected, 4.2% (34 youth and 62 parents or guardians) refused to participate. There were no significant differences in refusal rates by gender, race/ ethnicity or age. Some youth processed as adults (automatic transfers) were counseled by their lawyers to refuse participation; in this stratum, the refusal rate was 7.07% (26 of 368 youth). Twenty-seven youth left the Detention Center before we could schedule an interview; 312 were not interviewed because they left while we were locating their caretakers for consent. Eleven others were excluded: nine subjects who became physically ill during the interview and could not finish it, one subject who was too cognitively impaired to be interviewed, and one subject who appeared to be lying. The final sample size was 1829. This N allows us to reliably detect disorders (i.e., distinguish them from zero) that have a base rate in the general population of 1.0% or greater with a power of .80.[31]

Subjects were interviewed in a private area, almost always within two days of intake. Most interviews lasted 2 to 3 hours, depending on how many symptoms were reported. We used both male and female interviewers. Female subjects were always interviewed by female interviewers. Interviewers were trained for at least a month; most had a Master's degree in psychology or an associated field and experience interviewing high risk youth. One third of

our interviewers were fluent in Spanish. We maintained consistency throughout the study by monitoring scripted interviews with mock subjects.

Psychiatric Diagnoses

We used the Diagnostic Interview Schedule for Children (DISC) Version 2.3,[32,43] the most recent English and Spanish versions then available. The DISC assesses the presence of disorders in the past six months. The DISC is highly structured, contains detailed symptom probes, has acceptable reliability and validity,[32,44–47] and requires relatively brief training.

Two diagnoses required special management. The psychosis module, a broad symptom screen, does not generate a specific diagnosis. Instead, this module flags subjects if they endorse any "possible" or "probable" pathognomonic symptoms or at least three non-pathognomonic symptoms. Over one quarter of our subjects scored positive on the screen. To be conservative, we counted these subjects as psychotic only if: (1) their symptoms persisted for at least one week; (2) they had not used alcohol, drugs, or medication during this time; and (3) a project clinician (a psychiatrist or clinical psychologist) reviewed the case and judged that the symptoms were "probably indicative of psychosis." Twelve subjects met these criteria. Project clinicians also included another 8 subjects as psychotic who, although they denied symptoms, appeared to have auditory hallucinations, thought disorders or delusions during the interview.

ADHD is difficult to assess via self-report,[48] and is even more challenging to diagnose among delinquent youth.[49] In addition, the DSM-III-R requires that symptoms of ADHD be present before the age of seven. Age of onset is usually reported by the caretaker. Most of our subjects, even if they reported symptoms of ADHD, could not remember when their symptoms began. To avoid underreporting ADHD, we calculated rates in two ways: in the conventional manner (requiring that the subject report that symptoms were present before age seven) and counting the disorder as present regardless of the reported age of onset, as long as the duration criterion was met. (We present only the latter; the former rates are available from the authors.)

We determined rates of disorders in two ways. First, as most investigators have done, we used the DISC standard computer algorithms to calculate rates using DSM-III-R criteria. We then calculated more conservative (less inclusive) rates for diagnoses that met both DSM-III-R criteria and diagnosis-specific impairment criteria, reported by subjects.[32] Although youth are poor reporters of their own impairment,[32,50] we calculated these latter rates because recent reviews suggest that psychiatric diagnoses are more accurately determined by the presence of both symptoms and functional impairment.[32,51,52] (We also examined rates using DSM-III-R criteria and a global measure of functional impairment, the Children's Global Assessment Scale.[53,54] These rates, substantially similar to those reported here, are available from the authors.)

Statistical Analysis

Because we stratified our sample by gender, race/ethnicity, age, and legal status, we weighted all prevalence estimates to reflect the distributions of these variables in the detention center's population. All reported standard errors and tests of significance have been corrected for design characteristics with Taylor series linearization.[55,56] We used two-tailed tests; our level of significance for all tests was .05. We report all disorders for males and females separately because combining them masks important differences.

RESULTS

Table 1 presents unweighted demographic characteristics of our sample. Table 2 shows that nearly two thirds of the males and nearly three quarters of females met diagnostic criteria for one or more of the disorders listed. The more conservative estimates using the diagnosis-specific impairment criteria are only slightly lower. We also calculated overall rates excluding conduct disorder because many symptoms are related to delinquent behaviors; Table 2 shows that overall rates excluding conduct disorder (with and without diagnosis-specific impairment criteria) dropped only slightly.

The most common disorders among both males and females were substance use disorders and disruptive behavior disorders (oppositional defiant disorder and conduct disorder). One half of males and almost one half of females met criteria for a substance use disorder, and over 40% of males and females met criteria for disruptive behavior disorders. Rates of disorder using diagnosis-specific impairment criteria for conduct disorder are more than 10% lower than conduct disorder without impairment. Over one fourth of females and almost one fifth of males met criteria for one or more affective disorders.

Table 2 also reports the female-to-male odds ratios. Odds ratios greater than 1.0 indicate that females had higher odds of having the disorder than males had; those less than 1.0 show that females had lower odds of having the disorder. Females had significantly higher odds than males of having any disorder, any disorder except conduct disorder, any affective disorder, major depressive episode, any anxiety disorder, panic disorder, separation anxiety disorder, overanxious disorder, and substance use disorder other than alcohol or marijuana.

Tables 3 and 4 show the prevalence rates of disorders for males and females by race/ethnicity. Cases in these and subsequent tables met DSM-III-R criteria. (Tables of disorders meeting diagnosis-specific impairment criteria also are available from the authors.) We report protected tests of significance for specific racial/ethnic contrasts only when the overall test was significant. Table 3 shows that among males, non-Hispanic whites had the highest rates of many disorders and African Americans the lowest. Specifically, compared to African Americans, non-Hispanic whites had significantly higher rates of any disorder, any disorder except conduct disorder, any disruptive behavior disorder, conduct disorder, any substance use disorder, and substance use disorder other than alcohol or marijuana. The only disorder where African Americans had significantly higher rates than non-Hispanic whites was separation anxiety disorder. Hispanics had significantly higher rates than non-Hispanic whites of any anxiety disorder and separation anxiety disorder. Hispanics had higher rates than African Americans of panic disorder, obsessive-compulsive disorder, and substance use other than alcohol or marijuana disorders. Non-Hispanic whites had higher rates than Hispanics of any disorder, any disruptive behavior disorder, conduct disorder, and substance use disorder other than alcohol or marijuana.

Table 4 compares rates by race/ethnicity for females. Non-Hispanic white females had significantly higher rates than African Americans of any disorder, any disorder except conduct disorder, any disruptive behavior disorder, conduct disorder and all substance use disorders, and higher rates than Hispanics of any disorder except conduct disorder. Hispanic females had higher rates of generalized anxiety disorder than either African American or white females. Compared to African Americans, Hispanic females had higher rates of all disruptive behavior disorders, conduct disorder, alcohol use disorder, substance use disorder other than alcohol or marijuana, and both alcohol and drug use disorder.

Tables 5 and 6 show the prevalence rates of disorders for males and females by age. Among males, Table 5 shows that the youngest age group had the lowest rates of many disorders. They had significantly lower rates than both older age groups of any disorder, any disorder

except conduct disorder, generalized anxiety disorder and all the substance use disorders. The 14–15 year old group had higher rates of psychotic disorders than the 16+ age group.

Table 6 shows somewhat different patterns of disorder for females. The oldest age group has significantly higher rates of any disorder except conduct disorder than the two younger groups, and significantly lower rates of oppositional defiant disorder than the younger age groups. The youngest age group had significantly lower rates of any substance use disorder and marijuana use disorder than either of the older age groups.

DISCUSSION

Our study shows that youth with psychiatric disorders pose a challenge for the juvenile justice system and, after their release, for the larger mental health system. Even after excluding conduct disorder, we found that nearly 60% of male juvenile detainees and over two thirds of females met diagnostic criteria and had diagnosis-specific impairment for one or more psychiatric disorders. These rates may underestimate the true prevalence among youth entering the juvenile justice system for two reasons. First, our sample included only detainees; it excluded youth who were not detained because their charges were less serious, because they were immediately released, or because they were referred directly into the mental health system. Second, underreporting of symptoms and impairments by youth is common, especially for disruptive behavior disorders.[48]

It is difficult to compare our findings to studies of general population youth because rates vary widely, depending on the sample, the method, the source of data (subject or collaterals), and whether or not functional impairment was required.[51] Despite these differences, our overall rates are substantially higher than the median rate reported in a major review article (15%)[51] and other more recent investigations: the Great Smoky Mountains Study (20.3%),[57] the Virginia Twin Study of Adolescent Behavioral Development (142 cases per 1000 persons), [58] the Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) (6.1%)[32] and the Miami-Dade County Public School Study (38%).[59] We are especially concerned about the high rates of depression and dysthymia among detained youth (17.2% of males, 26.3% of females), which are also higher than general population rates.[52,57–62] Depressive disorders are difficult to detect (and treat) in the chaos of the corrections milieu. Overall, our prevalence rates are comparable to rates in other high risk populations, e.g. maltreated or runaway youth.[63,64]

Our data highlight an important paradox regarding race/ethnicity. Over one half of the youth in our juvenile justice system are African American or Hispanic. Therefore, most delinquent youth with psychiatric disorders are minorities. The **prevalence**, however, of many disorders is highest among non-Hispanic Whites. Thus, white youth in the juvenile justice system may, on average, be more dysfunctional (have greater psychiatric morbidity) than minorities.

Females had higher rates than males of many psychiatric disorders: major depressive episode, some anxiety disorders, and "other substance use disorders" (e.g., cocaine and hallucinogens). Our findings confirm those of prior studies of adult female detainees and conduct-disordered females, which find that females have higher rates of psychiatric disorders than do males.[65,66]

Overall, the youngest age group (age 13 and younger) had the lowest prevalence rates of most disorders, confirming studies of general population youth.[58,67–69] Many youth in the juvenile justice system may develop new or additional disorders as they age.

Limitations

Our study provides only a "snapshot" of our subjects' psychopathology immediately after arrest and detention. We cannot know whether mental disorder causes delinquency, increases the likelihood of arrest and detention, or is merely a frequent trait among delinquent youth. Some symptoms could be a reaction to incarceration. Moreover, our rates might differ somewhat if we had been able to use DSM-IV instead of DSM-III-R criteria. Our findings, drawn from only one site, may pertain only to youth in urban detention centers with similar demographic composition. Finally, because it was not feasible to interview caretakers, our data are subject to the limitations of self-report.

Despite these limitations, our study has important implications for research on delinquent youth and on mental health policy.

Future Research

We suggest three directions for future research:

1. **Studies of patterns and sequences of comorbidity.** Examining comorbidity is critical because it is so prevalent among juveniles in the general population, [70,71] adult jail detainees,[72] and adults who have high arrest rates: substance abusers,[73] young chronic psychiatric patients,[74] and homeless mentally ill persons.[75] Moreover, studies of adults suggest that juveniles with comorbid disorders may be especially vulnerable to arrest, particularly if they are poor and cannot afford treatment.[72] Data on the sequences of comorbidity would help provide the foundation for innovative treatments and to tailor services for special populations such as females and minorities.

2. **Studies of females in the juvenile justice system.** Females are increasingly arrested for crimes against persons and violent crimes[76] and comprise an increasingly large proportion of delinquent youth.[1,2] Prior studies of conduct disordered youth (many of whom will become delinquent) suggest that females have greater persistence of emotional disorder and worse outcomes than males.[77,78] Moreover, their problem behaviors often persist beyond adolescence. As they age, they may become suicidal, alcohol- or drug-addicted, enmeshed in violent relationships, and unable to care for their children.[65,77] Delinquent females also engage in sexual activity at an earlier age than non-offenders, placing them at greater risk for unwanted pregnancy and HIV.[79] Understanding psychiatric morbidity and associated risk factors among delinquent females could help us to improve treatment and reduce the cycle of disorder and dysfunction.

3. Longitudinal studies. Many youth in the juvenile justice population may develop new disorders as they age. Risk factors for the development of disorders[80] are common among delinquent youth: physical and sexual abuse, a troubled family environment, parental substance abuse, poverty, poor education, neighborhood disintegration, and neglect.[81–85] Delinquent youth have few protective factors to offset these risks.[86] Thus, **most** youth in the juvenile justice system are at great risk for psychopathology, problem behaviors, even early death.[87,88] Longitudinal studies are needed to examine why some delinquent youth develop new psychopathology and others do not, to investigate protective factors, and to determine how vulnerability and risk differ by key variables such as gender and race/ethnicity. We are now collecting longitudinal data on our subjects. Future papers will address persistence and change in psychiatric disorders (including onset, remission, and recurrence), comorbidity, associated functional impairments, and the risk and protective factors related to these disorders and impairments.

Implications for Mental Health Policy

Advocacy groups, researchers, and public policy experts believe that the juvenile justice system has become the only alternative for many poor and minority youth with psychiatric disorders.[89–93] Many states have imposed more severe sanctions for delinquent youth and transfer increasing numbers of juveniles to adult court,[94–96] policies that disproportionately affect minority youth.[95,97] In addition, two recent changes in public health policy may have inadvertently contributed to the criminalization of mentally disordered youth:

1. **Welfare Reform**. Welfare reform has disrupted Medicaid benefits for millions of children who need treatment.[98,99] Medicaid enables many youth to receive psychiatric treatment.[100] Many parents who left welfare to go to work found their new jobs did not provide insurance or, when available, they could not afford copayments.[101,102] The State Children's Health Insurance Program, designed to offset the loss of Medicaid, did not fulfill its intended purpose.[99,103] Moreover, welfare reform has not substantially decreased poverty[104] and some poor children have become even poorer.[105] Poor children are vulnerable to poor outcomes,[106] including involvement with the juvenile justice system.

2. **Managed Care.** Managed care now dominates the private insurance industry[93] and increasingly controls public insurance benefits, such as Medicaid.[107,108] Many disorders prevalent among delinquent youth _ conduct disorder, ADHD, substance use disorders _ are often not covered or have restrictive treatment guidelines.[109] As the public health system reduces services, youth with psychiatric disorders may increasingly fall through the cracks into the juvenile justice system.[110]

These changes – welfare reform and managed care – have the most serious consequences for poor and minority children, groups overrepresented in the juvenile justice system. Our findings are even more sobering because the prevalence of psychosocial problems among youth appears to be increasing.[111, 112] The Surgeon General reports that the unmet need for services is as high now as it was 20 years ago.[113] Even youth who are insured often cannot obtain treatment because few child and adolescent psychiatrists practice in poor and minority neighborhoods.[114,115]

The juvenile justice system is not equipped to provide adequate mental health services for the large numbers of detainees with psychiatric disorders.[116,117] Although the mental health needs of youth in the juvenile justice system have been given much attention recently,[10,118,119] there are still few empirical studies of the effectiveness of treatment and outcomes.[10] This omission is critical. We need research to guide mental health policy and to understand the complex interplay among the many systems – mental health, child welfare, and justice -- that treat delinquent youth.

Acknowledgments

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Table 1

Unweighted Sample Characteristics[*]

Characteristic	(N=1829)	(%) of Participants
Race/Ethnicity		
African American	1005	54.9
Non-Hispanic White	296	16.2
Hispanic	524	28.7
Other	4	0.2
Sex		
Male	1172	64.1
Female	657	35.9
Age, y		
Mean	14.9	
Median	15	
Mode	16	
Specific ages, y		
10	7	0.4
11	20	1.1
12	87	4.8
13	258	14.1
14	217	11.9
15	498	27.2
16	644	35.2
17	89	4.9
18	9	0.5
Education, grade		
<=6th	89	4.9
7th	171	9.3
8th	306	16.7
9th	568	31.1
10th	455	24.9
11th	172	9.4
12th	27	1.5
Currently in GED Classes	31	1.7
Alternative or home schooling	5	0.3
Unknown	5	0.3
Legal Status		
Processed in adult court (automatic transfer)	275	15.0
Processed in juvenile court	1554	85.0

[*] Percentages may not sum to 100% due to rounding error.

Table 2

Six-Month Prevalence and Odds Ratios of DSM III-R Diagnoses by Sex with and without Diagnosis-Specific Impairment Criteria*

DISORDER	MALE (%, 95% CI) (n = 1170)						FEMALE (%, 95% CI) (n = 656)						FEMALE TO MALE ODDS RATIOS (OR, 95% CI)					
	Diagnosis			Diagnosis with Impairment			Diagnosis			Diagnosis with Impairment			Diagnosis			Diagnosis with Impairment		
	%	LCI	UCI	%	LCI	UCI	%	LCI	UCI	%	LCI	UCI	OR	LCI	UCI	OR	LCI	UCI
ANY OF THE LISTED DISORDERS	66.3	61.6	70.7	63.3	58.6	67.8	73.8	70.1	77.1	71.2	67.5	74.7	1.43	1.09	1.88	1.43	1.10	1.87
ANY EXCEPT CONDUCT DISORDER	60.9	56.2	65.5	59.7	54.9	64.3	70.0	66.2	73.5	68.2	64.4	71.8	1.49	1.15	1.94	1.45	1.12	1.88
ANY AFFECTIVE DISORDER	18.7	15.2	22.8	16.1	12.8	20.0	27.6	23.6	32.0	22.9	19.0	27.2	1.66	1.20	2.29	1.55	1.09	2.20
Major depressive episode	13.0	10.0	16.6	11.0	8.3	14.5	21.6	17.8	25.9	18.9	15.2	23.2	1.85	1.27	2.70	1.88	1.25	2.82
Dysthymia	12.2	9.3	15.8	9.9	7.3	13.2	15.8	13.1	18.8	12.5	10.2	15.3	1.34	0.93	1.95	1.31	0.87	1.96
Manic episode	2.2	1.1	4.3	2.0	1.0	4.1	1.8	1.0	3.2	1.2	0.6	2.4	0.81	0.33	1.99	0.58	0.21	1.63
PSYCHOTIC DISORDERS	1.0	0.4	2.6	…	…	…	1.0	0.5	2.1	…	…	…	0.98	0.30	3.25	…	…	…
ANY ANXIETY DISORDER	21.3	17.6	25.6	20.7	17.0	24.9	30.8	27.2	34.6	28.9	25.5	32.7	1.64	1.22	2.20	1.56	1.16	2.10
Panic disorder	0.3	0.1	0.6	0.1	0.0	0.4	1.5	0.8	2.7	1.0	0.5	2.0	5.65	2.04	15.65	8.13	2.01	32.85
Separation anxiety disorder	12.9	9.9	16.5	10.8	8.1	14.2	18.6	15.7	21.9	16.3	13.6	19.4	1.55	1.08	2.21	1.61	1.10	2.34
Overanxious disorder	6.7	4.6	9.7	5.9	4.0	8.7	12.3	9.9	15.1	11.5	9.2	14.2	1.95	1.23	3.10	2.06	1.27	3.35
Generalized anxiety disorder	7.1	4.9	10.2	6.4	4.3	9.4	7.3	5.6	9.6	6.8	5.1	9.0	1.03	0.63	1.69	1.07	0.64	1.79
Obsessive-compulsive disorder	8.3	6.1	11.3	…	…	…	10.6	8.4	13.2	…	…	…	1.31	0.86	2.00	…	…	…
ATTENTION-DEFICIT/HYPERACTIVITY DISORDER†	16.6	13.3	20.5	11.2	8.5	14.6	21.4	18.4	24.8	16.4	13.7	19.5	1.37	0.99	1.89	1.55	1.07	2.25
ANY DISRUPTIVE BEHAVIOR DISORDER	41.4	36.8	46.2	31.4	27.2	36.0	45.6	41.4	49.8	38.0	33.9	42.2	1.19	0.92	1.53	1.33	1.02	1.75
Oppositional-defiant disorder	14.5	11.4	18.2	12.6	9.8	16.2	17.5	14.7	20.6	15.1	12.5	18.1	1.25	0.89	1.76	1.23	0.86	1.76
Conduct disorder	37.8	33.3	42.6	24.3	20.5	28.5	40.6	36.5	44.8	28.5	24.6	32.8	1.12	0.86	1.46	1.24	0.92	1.67
ANY SUBSTANCE USE DISORDER	50.7	45.9	55.5	…	…	…	46.8	42.6	51.1	…	…	…	0.86	0.66	1.11	…	…	…
Alcohol use disorder	25.9	21.9	30.4	…	…	…	26.5	22.6	30.9	…	…	…	1.03	0.76	1.40	…	…	…
Marijuana use disorder	44.8	40.1	49.6	…	…	…	40.5	36.8	44.4	…	…	…	0.84	0.65	1.08	…	…	…
Other substance use disorder	2.4	1.7	3.4	…	…	…	6.9	4.1	11.4	…	…	…	3.00	1.57	5.74	…	…	…
Both alcohol and other drug use disorders	20.7	17.0	24.9	…	…	…	20.9	18.0	24.2	…	…	…	1.01	0.75	1.38	…	…	…

* CI indicates confidence interval. Ellipses indicate that diagnosis and diagnosis with impairment are identical because the diagnostic criteria for psychotic disorders, obsessive-compulsive disorder, and substance use disorders include impairment.

† Attention-deficit/hyperactivity disorder is reported without the criterion of onset before age 7 years because caretaker information is not available and self-report of symptoms before age 7 years is unreliable.

Table 3

Six-Month Prevalence of DSM III-R Diagnoses for Males by Race/Ethnicity*

	African-American (n = 574)			Non-Hispanic White (n = 207)			Hispanic (n = 386)			Over-all Significance	Protected Tests†
	%	LCI	UCI	%	LCI	UCI	%	LCI	UCI		
ANY OF THE LISTED DISORDERS	64.6	58.8	69.9	82.0	76.2	86.7	70.4	63.3	76.7	<.001	White > African American; White > Hispanic
ANY EXCEPT CONDUCT DISORDER	59.4	53.5	65.0	72.9	66.5	78.6	65.3	58.1	71.9	0.009	White > African American
ANY AFFECTIVE DISORDER	18.6	14.4	23.6	13.8	9.6	19.5	21.5	15.3	29.3	0.19	
Major depressive episode	12.5	9.1	17.0	9.5	6.0	14.6	16.6	10.8	24.7	0.20	
Dysthymia	12.2	8.8	16.7	9.5	6.1	14.5	13.3	8.4	20.6	0.53	
Manic episode	2.5	1.2	5.2	0.5	0.1	3.7	1.4	0.6	3.2	0.27	
PSYCHOTIC DISORDERS	1.0	0.3	3.2	2.6	1.1	6.2	0.7	0.2	2.6	0.19	
ANY ANXIETY DISORDER	20.9	16.5	26.1	14.4	10.1	20.2	25.5	18.7	33.7	0.046	Hispanic > White
Panic disorder	0.1	0.0	0.4	0.5	0.1	3.7	1.0	0.3	3.1	0.04	Hispanic > African American
Separation anxiety disorder	12.7	9.3	17.2	5.9	3.3	10.3	15.5	9.8	23.6	0.02	African American > White; Hispanic > White
Overanxious disorder	6.9	4.4	10.7	2.9	1.3	6.6	7.0	3.6	13.0	0.16	
Generalized anxiety disorder	7.5	4.8	11.4	2.5	1.0	5.9	7.2	3.7	13.3	0.08	
Obsessive-compulsive disorder	6.5	4.2	10.0	9.3	5.8	14.4	17.0	10.7	25.9	0.01	Hispanic > African American
ATTENTION-DEFICIT/HYPERACTIVITY DISORDER‡	17.0	13.0	21.9	20.9	15.8	27.3	13.7	9.4	19.5	0.18	
ANY DISRUPTIVE BEHAVIOR DISORDER	39.8	34.2	45.7	60.3	53.3	66.9	43.3	36.1	50.8	<.001	White > African American; White > Hispanic
Oppositional-defiant disorder	14.4	10.7	19.1	19.4	14.4	25.6	13.6	9.3	19.5	0.23	
Conduct disorder	35.6	30.1	41.5	59.9	53.0	66.5	41.7	34.5	49.2	<.001	White > African American; White > Hispanic
ANY SUBSTANCE USE DISORDER	49.1	43.2	55.0	62.6	55.7	69.0	55.4	47.8	62.7	0.01	White > African American
Alcohol use disorder	24.6	19.8	30.2	30.1	24.0	36.9	30.8	24.1	38.5	0.28	
Marijuana use disorder	44.4	38.6	50.4	53.8	46.8	60.6	45.4	38.0	52.9	0.11	

	African-American (n = 574)		Non-Hispanic White (n = 207)		Hispanic (n = 386)		Over-all Significance	Protected Tests[†]
Other substance use disorder	0.5	0.1	2.8	21.1	15.9	27.4	6.0	3.9	9.1	<.001	White > African American; White > Hispanic; Hispanic > African American
Both alcohol and other drug use disorders	20.4	16.0	25.7	24.0	18.5	30.6	21.7	16.5	28.0	0.65	

[*] CI indicates confidence interval. Two cases of "other" race/ethnicity are excluded from this table.

[†] Protected tests are performed only if the alpha for the overall test is less than .05.

[‡] Attention-deficit/hyperactivity disorder is reported without the criterion of onset before the age of 7 years because caretaker information is not available and self-report of symptoms before the age of 7 years is unreliable.

Table 4

Six-Month Prevalence DSM III-R Diagnoses for Females by Race/Ethnicity[*]

	African American (n = 430)			Non-Hispanic White (n = 89)			Hispanic (n = 136)			Over-all Significance	Protected Tests[†]
	%	LCI	UCI	%	LCI	UCI	%	LCI	UCI		
ANY OF THE LISTED DISORDERS	70.9	66.4	75.0	86.1	77.1	92.0	75.9	67.9	82.5	0.01	White > African American
ANY EXCEPT CONDUCT DISORDER	67.4	62.8	71.6	83.9	74.6	90.3	69.5	61.2	76.7	0.01	White > African American; White > Hispanic
ANY AFFECTIVE DISORDER	26.2	22.2	30.5	23.4	15.8	33.4	28.7	21.8	36.9	0.68	
Major depressive episode	19.7	16.2	23.7	19.0	12.1	28.5	22.8	16.5	30.5	0.70	
Dysthymia	15.5	12.4	19.2	17.9	11.2	27.3	17.2	11.8	24.5	0.80	
Manic episode	1.9	0.9	3.7	1.1	0.2	7.5	2.1	0.7	6.4	0.85	
PSYCHOTIC DISORDERS	0.9	0.4	2.5	0.0			2.1	0.7	6.3	.29[‡]	
ANY ANXIETY DISORDER	31.2	27.0	35.8	30.0	21.4	40.3	32.6	25.2	40.9	0.92	
Panic disorder	0.9	0.4	2.5	3.4	1.1	10.0	2.8	1.0	7.1	0.17	
Separation anxiety disorder	18.9	15.5	22.9	14.5	8.6	23.4	21.7	15.5	29.4	0.41	
Overanxious disorder	12.5	9.7	16.0	11.1	6.1	19.5	13.2	8.4	20.1	0.90	
Generalized anxiety disorder	6.6	4.6	9.4	4.4	1.7	11.3	13.1	8.4	19.9	0.03	Hispanic > African American; Hispanic > White
Obsessive-compulsive disorder	10.3	7.8	13.6	12.4	7.0	21.1	10.6	6.5	16.9	0.84	
ATTENTION-DEFICIT/HYPERACTIVITY DISORDER[§]	20.0	16.5	24.1	22.2	14.7	32.0	29.3	22.2	37.5	0.08	
ANY DISRUPTIVE BEHAVIOR DISORDER	39.4	34.9	44.1	61.6	51.0	71.1	56.5	47.9	64.6	<.001	White > African American; Hispanic > African American
Oppositional-defiant disorder	15.8	12.7	19.6	17.8	11.1	27.1	26.2	19.5	34.3	0.03	Hispanic > African American
Conduct disorder	34.3	29.9	38.9	58.9	48.3	68.7	50.2	41.8	58.6	<.001	White > African American; Hispanic > African American
ANY SUBSTANCE USE DISORDER	42.3	37.6	47.1	61.9	51.2	71.6	51.7	43.1	60.1	0.002	White > African American
Alcohol use disorder	21.2	17.5	25.3	39.2	29.5	49.9	34.0	26.4	42.5	<.001	White > African American; Hispanic > African American

	African American (n = 430)			Non-Hispanic White (n = 89)			Hispanic (n = 136)			Over-all Significance	Protected Tests[†]
Marijuana use disorder	37.8	33.3	42.5	53.4	42.9	63.6	44.7	36.3	53.3	0.02	White > African American
Other substance use disorder	0.9	0.4	2.5	20.0	12.9	29.6	14.7	9.7	21.5	<.001	White > African American; Hispanic > African American
Both alcohol and other drug use disorders	17.2	13.9	21.1	35.1	25.7	45.8	28.3	21.2	36.7	<.001	White > African American; Hispanic > African American

*
CI indicates confidence interval. Two cases of "other" race/ethnicity are excluded from this table.

[†]
Protected tests are performed only if the alpha for the overall test is less than .05.

[‡]
Test computed with 1 df because of empty cells.

[§]
Attention-deficit/hyperactivity disorder is reported without the criterion of onset before the age of 7 years because caretaker information is not available and self-report of symptoms before the age of 7 years is unreliable.

Table 5

Six-Month Prevalence of DSM III-R Diagnosis for Males by Age[*]

	Age <=13 Years (n = 315)			Age 14 and 15 Years (n = 361)			Age >=16 Years (n = 494)			Over-all Significance	Protected Tests[†]
	%	LCI	UCI	%	LCI	UCI	%	LCI	UCI		
ANY OF THE LISTED DISORDERS	52.7	46.5	58.8	68.0	60.3	74.8	67.3	60.3	73.7	0.001	14 and 15 years > 13 years and younger; 16 years and older > 13 years and younger
ANY EXCEPT CONDUCT DISORDER	44.9	38.9	51.0	63.4	55.6	70.6	61.8	54.7	68.5	<.001	14 and 15 years and younger; 16 years and older > 13 years and younger
ANY AFFECTIVE DISORDER	13.0	9.4	17.6	21.2	15.4	28.4	17.7	12.9	23.7	0.09	
Major depressive episode	7.5	4.9	11.4	14.8	10.0	21.5	12.4	8.5	17.8	0.06	
Dysthymia	7.3	4.7	11.3	14.5	9.7	21.1	11.2	7.4	16.4	0.08	
Manic episode	1.6	0.7	4.0	2.6	0.9	7.2	2.0	0.7	5.1	0.80	
PSYCHOTIC DISORDERS	0.0			2.1	0.7	6.0	0.3	0.2	0.8	0.01[‡]	14 and 15 years > 16 years and older
ANY ANXIETY DISORDER	17.7	13.6	22.9	23.0	16.9	30.4	20.6	15.5	26.7	0.42	
Panic disorder	0.8	0.2	3.3	0.1	0.0	0.9	0.3	0.1	0.9	0.25	
Separation anxiety disorder	10.0	6.9	14.3	14.5	9.7	21.1	12.0	8.1	17.5	0.40	
Overanxious disorder	4.8	2.8	8.0	5.1	2.6	9.9	8.4	5.1	13.5	0.25	
Generalized anxiety disorder	1.3	0.5	3.4	5.9	3.1	11.0	9.2	5.8	14.4	0.001	14 and 15 years and younger; 16 years and older > 13 years and younger
Obsessive-compulsive disorder	6.0	3.7	9.7	9.4	5.7	15.0	7.8	4.9	12.2	0.43	
ATTENTION-DEFICIT/HYPERACTIVITY DISORDER[§]	12.5	9.1	16.9	20.9	15.1	28.0	13.8	9.7	19.2	0.06	
ANY DISRUPTIVE BEHAVIOR DISORDER	32.9	27.5	38.8	43.5	35.9	51.3	41.2	34.5	48.2	0.06	
Oppositional-defiant disorder	10.7	7.5	14.9	18.2	12.8	25.1	12.1	8.3	17.3	0.08	
Conduct disorder	30.8	25.6	36.6	41.1	33.6	49.1	36.4	30.0	43.3	0.10	
ANY SUBSTANCE USE DISORDER	28.3	23.1	34.0	51.3	43.5	59.1	54.4	47.3	61.3	<.001	14 and 15 years and younger; 16 years and older > 13 years and younger
Alcohol use disorder	12.9	9.5	17.4	25.6	19.3	33.0	28.7	22.8	35.4	<.001	14 and 15 years and younger; 16 years and younger

	Age <=13 Years (n = 315)			Age 14 and 15 Years (n = 361)			Age >=16 Years (n = 494)			Over-all Significance	Protected Tests[†]
Marijuana use disorder	25.1	20.3	30.5	46.9	39.1	54.8	46.8	39.8	53.9	<.001	14 and 15 years > 13 years and older > 13 years and younger; 16 years and younger
Other substance use disorder	0.8	0.4	1.7	2.5	1.2	5.0	2.6	1.9	3.6	0.01	14 and 15 years > 13 years and younger; 16 years and older > 13 years and younger
Both alcohol and other drug use disorders	10.2	7.2	14.3	21.5	15.7	28.7	22.0	16.7	28.3	<.001	14 and 15 years > 13 years and younger; 16 years and older > 13 years and younger

*CI indicates confidence interval.

[†]Protected tests are performed only if the alpha for the overall test is less than .05.

[‡]Test computed with 1 *df* because of empty cells.

[§]Attention-deficit/hyperactivity disorder is reported without the criterion of onset before the age of 7 years because caretaker information is not available and self-report of symptoms before the age of 7 years is unreliable.

Table 6

Six-Month Prevalence of DSM III-R Diagnosis for Females by Age[*]

	Age <=13 Years (n = 56)			Age 14 and 15 Years (n = 353)			Age >=16 Years (n = 247)			Over-all Significance	Protected Tests[†]
	%	LCI	UCI	%	LCI	UCI	%	LCI	UCI		
ANY OF THE LISTED DISORDERS	66.7	53.2	77.9	72.2	67.2	76.7	77.6	71.6	82.7	0.18	
ANY EXCEPT CONDUCT DISORDER	64.7	51.2	76.2	67.4	62.2	72.1	74.8	68.6	80.2	0.13	
ANY AFFECTIVE DISORDER	20.7	12.0	33.3	27.9	23.5	32.9	28.8	21.2	37.8	0.50	
Major depressive episode	13.0	6.5	24.2	21.6	17.6	26.3	23.4	16.0	32.9	0.27	
Dysthymia	10.4	4.7	21.4	15.6	12.2	19.8	17.2	12.8	22.6	0.46	
Manic episode	3.9	1.0	14.4	1.4	0.6	3.3	1.9	0.8	4.7	0.45	
PSYCHOTIC DISORDERS	0.0			0.6	0.2	2.5	1.8	0.7	4.3	0.21[‡]	
ANY ANXIETY DISORDER	26.6	16.7	39.7	32.6	27.8	37.7	29.2	23.4	35.7	0.55	
Panic disorder	1.9	0.3	12.4	1.7	0.8	3.6	1.0	0.3	3.2	0.75	
Separation anxiety disorder	18.1	10.0	30.6	19.7	15.8	24.2	17.2	12.9	22.7	0.77	
Overanxious disorder	7.1	2.7	17.7	13.8	10.5	17.8	11.4	7.9	16.1	0.34	
Generalized anxiety disorder	3.8	1.0	14.1	7.1	4.9	10.3	8.4	5.5	12.7	0.51	
Obsessive-compulsive disorder	10.4	4.7	21.5	11.8	8.8	15.7	8.8	5.8	13.1	0.51	
ATTENTION-DEFICIT/HYPERACTIVITY DISORDER[§]	26.6	16.6	39.7	22.7	18.6	27.4	18.5	14.0	24.0	0.30	
ANY DISRUPTIVE BEHAVIOR DISORDER	44.7	32.2	57.9	50.0	44.8	55.2	39.6	32.0	47.8	0.11	
Oppositional-defiant disorder	30.5	19.9	43.6	20.2	16.4	24.7	10.7	7.3	15.2	<.001	13 years and younger > 16 years and older; 14 and 15 years > 16 years and older
Conduct disorder	33.0	22.0	46.3	45.3	40.2	50.5	35.7	28.1	44.2	0.06	
ANY SUBSTANCE USE DISORDER	30.5	19.9	43.7	45.8	40.6	51.2	52.0	44.5	59.4	0.02	14 and 15 years > 13 years and younger; 16 years and older > 13 years and younger
Alcohol use disorder	16.7	9.1	28.6	25.4	21.1	30.3	30.3	22.7	39.2	0.16	
Marijuana use disorder	24.8	15.3	37.5	41.3	36.2	46.6	43.3	37.1	49.7	0.04	14 and 15 years > 13 years and younger; 16 years and older > 13 years and younger
Other substance use disorder	5.9	2.2	14.9	5.3	3.5	7.8	9.5	3.7	22.2	0.52	

	Aqe <=13 Years (n = 56)		Age 14 and 15 Years (n = 353)		Age >=16 Years (n = 247)		Over- all Significance	Protected Tests[†]
Both alcohol and other drug use disorders	11.5	5.5	22.5	21.8	17.7	26.4	22.0	17.2	27.6	0.20

*
CI indicates confidence interval.

[†]Protected tests are performed only if the alpha for the overall test is less than .05.

[‡]Test computed with 1 *df* because of empty cells.

§Attention-deficit/hyperactivity disorder is reported without the criterion of onset before the age of 7 years because caretaker information is not available and self-report of symptoms before the age of 7 years is unreliable.