

# Rates of DSM-IV psychiatric disorders among adolescents in a large metropolitan area

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## Abstract

We present prevalence data for adolescents in a large metropolitan area in the US and the association of DSM-IV diagnoses to functional impairment and selected demographic correlates. We sampled 4175 youths aged 11–17 years from households enrolled in large health maintenance organizations. Data were collected using questionnaires and the Diagnostic Interview Schedule for Children, Version IV (DISC-IV). Impairment was measured using the Child Global Assessment Scale and diagnostic specific impairment in the DISC-IV. 17.1% of the sample met DSM-IV criteria for one or more disorders in the past year; 11% when only DISC impairment was considered and 5.3% only using the CGAS. The most prevalent disorders were anxiety (6.9%), disruptive (6.5%), and substance use (5.3%) disorders. The most prevalent specific disorders were agoraphobia, conduct and marijuana abuse/dependence, then alcohol use and oppositional defiant disorder. Younger youths and females had lower odds for any disorder, as did youths from two parent homes. There was increased odds associated with lower family income. Females had greater odds of mood and anxiety disorders, males of disruptive and substance use disorders. There were greater odds of mood and disruptive disorders for older youths. Prevalences were highly comparable to recent studies using similar methods in diverse non-metropolitan populations. We found associations with age, gender, and to a lesser extent, socioeconomic status reported in previous studies. The inclusion of both diagnosis-specific impairment and global impairment reduced prevalence rates significantly. Our results suggest commonality of prevalences and associated factors in diverse study settings, including urban and rural areas.

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## 1. Introduction

Empirical data on the prevalence and incidence of child and adolescent disorders are fundamental to understanding the etiology and natural history of such disorders (Roberts et al., 1998; Costello et al., 2005). However, compared to adults, there have been fewer epidemiologic investigations aimed at estimating prevalence and incidence and associated risk factors for children and adolescents.

Roberts and colleagues (1998) reviewed 52 studies published through 1996 which estimated overall prevalence of psychopathology, and estimated the rates to be between 7% and 12%, adjusting for impairment. Without such adjustment, prevalences were in the 18–20% range. Studies which used structured interview schedules to obtain data from community samples of youths and used DSM diagnostic criteria provided the most concordant results (Costello et al., 1988, 1996; Velez et al., 1989; Garrison et al., 1992; Fergusson et al., 1993; Jensen et al., 1995; Shaffer et al., 1996).

Since that review, additional papers have appeared reexamining the question of the burden (prevalence) of psychi-

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atric disorder among children and adolescents, using DSM-IV criteria. Costello et al. (2003) reported that the prevalence of any DSM-IV disorder in their sample of 9–16 year-olds was 13.3% for the past 3 months; prevalence of serious emotional disturbance was 6.8%. Canino et al. (2004) found a 12-month prevalence of DSM-IV disorder of 19.8% for youths 4–17 and a rate of 6.9% adjusting for impairment. Ford et al. (2003) found overall prevalence of DSM-IV disorders was 9.5% for youths who met criteria and had significant social impairment.

Of these studies, all of which used DSM-IV diagnostic criteria, two were conducted in rural areas of the American South (Costello et al., 2003; Costello et al., 1997) one on the island of Puerto Rico (Canino et al., 2004) and one in England (Ford et al., 2003). To date, there has been no study published estimating prevalence of DSM-IV disorders in the United States for large, metropolitan areas in which the overwhelming majority of children and adolescents reside.

Given the relatively few studies of adolescents to date, and the even greater paucity of data on prevalence of DSM-IV psychiatric disorders among adolescents in large urban areas, we reexamine this question using data from Teen Health 2000 (TH2K), a large, community-based study which used a structured interview schedule to generate DSM-IV diagnoses with adjustments for functional impairment. To our knowledge, this is the largest study of psychopathology among adolescents ever conducted in the United States which incorporates these procedures.

## 2. Methods

### 2.1. Subjects

The sample was selected from households in the Houston metropolitan area enrolled in local health maintenance organizations. One youth, age 11–17 years, was sampled from each eligible household, oversampling for African American and Latino households. Since ethnic status was not available from the HMOs, a sampling strategy was used to identify and oversample African and Latino American youths. We developed sample weights which were adjusted by post-stratification to reflect the age, ethnicity, and gender distribution of the 5-county Houston metropolitan area in 2000. The total population was 4,669,571, of which 515,736 were 11–17 years of age. Of these, 94,498 were African Americans, 166,821 were Latinos and 220,410 were European Americans. The precision of estimates are thereby improved and sample selection bias reduced to the extent that it is related to demographic composition (Andrews et al., 1973). Thus, the weighted estimates generalize to the population 11–17 years of age in a metropolitan area of 4.7 million people.  $\chi^2$  tests were used to compare ethnicity, gender and age distributions between census data for the 5-county area and sample data for both before and after the weighted procedure, showing that the distribution of age and ethnicity were statistical significant

( $\chi^2 = 89.86$ ,  $df = 6$ ,  $p < 0.0001$ ;  $\chi^2 = 800.26$ ,  $df = 2$ ,  $p < 0.0001$ ) in the raw data and census data, but not for gender ( $\chi^2 = 0.78$ ,  $df = 1$ ,  $p = 0.78$ ), while no difference was identified between the two distributions with respect to the three demographic factors of age, gender and ethnic group ( $\chi^2 = 0.02$ ,  $df = 6$ ,  $p = 0.99$ ;  $\chi^2 = 0.01$ ,  $df = 1$ ,  $p = 0.93$ ;  $\chi^2 = 0.005$ ,  $df = 2$ ,  $p = 0.99$ ). In other words, the weighted sample represents the 5-county area population composition (age, gender and ethnicity) after post-stratification adjustment.

Data were collected at baseline on sample youths and one adult caregiver using computer-assisted personal interviews and self-administered questionnaires. The computerized interview contained the structured psychiatric interview (see below), demographic data on the youths and the household as well as queries about stress exposure. The interviews were conducted by trained, lay interviewers and took on average 1–2 h, depending on the number of psychiatric problems present. The questionnaires contained questions on a broad array of risk and protective factors. These took about 30 min to complete. Interviews and questionnaires were completed with 4175 youths (66% of eligible households). All youths and parents gave written informed consent prior to participation in this study. All study forms and procedures were approved by the University of Texas Health Sciences Center Committee for Protection of Human Subjects.

The sample was diverse (see Table 1). In terms of ethnic status, the cohort was 35.4% EA, 35.4% AA, and 20.5% MA and 8.7% others. For education of caregivers, 32%

Table 1  
Unweighted sample characteristics, Teen Health 2000 (Wave 1)

Characteristics	Percent
<i>Gender of youth</i>	
Male	51.14
Female	48.86
<i>Age of youth</i>	
16+	24.91
Between 13 and 15	48.05
12 or less	27.04
<i>Ethnicity of youth</i>	
European American	35.43
African American	35.35
Mexican American	20.53
Others	8.69
<i>Parent education</i>	
15+ years	38.59
13–14 years	29.44
≤12 years	31.98
<i>Family income</i>	
\$65,000+	35.29
\$ 35,000–\$ 64,999	40.71
<\$35,000	24.00
<i>Parental marital status</i>	
Married	75.71
Not Married	24.29

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