

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

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At any given time between the ages of 9 and 16, one child out of six will develop an emotional or behavioral disorder, with many of them developing comorbid disorders. These are some findings of the latest longitudinal research from the Great Smoky Mountains Study (GSMS). While children between the ages of 9 and 10 had the highest rates of any disorder overall, rates of prevalence dropped to their lowest levels by the age of 12, and then slowly rose again as children moved into adolescence. Significant gender differences were also found for the type and prevalence of disorders developed by these youth.

Data were collected from three cohorts of children ($N = 1420$) ages 9, 11, and 13 at intake. Data collection occurred for cohorts 1 and 2 at ages 9-10, and 11-13 respectively, and from all cohorts at ages 14-16, to total 6,675 completed observations (i.e., 84% of all possible observations). As reported in a previous GSMS study (see *Data Trends* 78), about half of these children were boys (51%), and most children were Caucasian (89%). In the current study, the authors investigated the prevalence of DSM-IV disorders at each wave, and whether that prevalence increased or decreased as children grew older. They identified developmental patterns among disorders, including comorbidity, and gender differences between disorders and their patterns of development. Two specific patterns were also studied: (a) *heterotypic* continuity, in which a child develops one or more additional disorders that differ in type from an earlier disorder; and (b) *homotypic* continuity, wherein a child develops similar disorders over time.

Evidence of disorders and accompanying impairment were measured with the Child and Adolescent Psychiatric Assessment (CAPA) and DSM-IV diagnostic guidelines. At each wave of data collection, children and parents reported psychiatric symptoms that had occurred within the previous three months.

Disorders typically associated with childhood (i.e., Attention Deficit Hyperactive Disorder [ADHD] separation anxiety disorder, enuresis, encopresis, and verbal and motor ticks) had "almost disappeared" (p. 839) by the age of 12. This drop in disorders was seen especially among boys. Prevalence of any disorder at 9-10 years also fell at age 12 for girls, but girls had fewer childhood disorders to begin with. However, after age 12, girl's rates of depression, social phobia, and Substance Use Disorders (SUDs) increased, whereas only the prevalence of SUDs increased for boys. Diagnosis of a Serious Emotional Disorder (SED) increased dramatically for both genders during the course of the study. For example, 20% of boys and 31% of girls had a diagnosis of SED at ages 9-10; among children with a mental health disorder, those rates had risen to 79% for boys, and 58% for girls by the age of 16. Of all children with a diagnosis, 25% had concurrent comorbidity. While comorbid levels of depression and Conduct Disorder (CD) were statistically significant among girls, comorbidity between SUDs and depression was significant for boys.

In general, all children having a psychiatric diagnosis were significantly three times more likely to develop a subsequent disorder when compared to children with no previous disorder. Although girls had fewer, less serious disorders than boys, they were significantly more likely than children without a diagnosis to develop subsequent disorders, whether homotypic or heterotypic. Compared to boys, developmental patterns among girls were more likely to be *heterotypic*; strong patterns of this type were found for girls between depression and the subsequent development of anxiety (and vice versa), between anxiety disorders or CD and SUDs, and between ADHD and ODD. Girls were also significantly more likely than boys to develop *homotypic* patterns for depression, generalized anxiety disorder, and social phobias.

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With regard to *heterotypic* patterns among boys, “there was no evidence that boys with an emotional disorder were at increased risk of developing behavioral disorders, or vice versa” (p. 843). Boys showed *homotypic* patterns in the development of encopresis only. No significant gender differences in homotypic patterns were found for SUDs, although boys evidenced a higher prevalence of SUDs overall.

Table 1 illustrates the predicted cumulative prevalence of disorders among previously unaffected children. As shown, boys had the highest rates of behavioral disorders and girls had the highest rates of emotional disorders. Of children who had not developed a disorder in childhood, 36.7% met criteria for one or more disorders by the age of 16.

In conclusion, these results are limited by the high percentage of Caucasian children in the sample, and by the rural area of the study. However, another study conducted by Angold and colleagues (2002) included a large percentage

of mostly rural, African American children; they found rates of disorder among African American and Caucasian children that were similar to the current findings. An additional limitation concerns the fact that the CAPA is designed to assess symptoms within the previous three months only. It is therefore likely that the measure underestimated the cumulative prevalence of disorders. Given this awareness, however, “the degree of homotypic continuity is remarkable” (p. 843). Yet with regard to implications of the study, the high rates of homotypic continuity among girls, combined with the low prevalence of heterotypic patterns overall, may suggest that “the DSM-IV taxonomy [fits] boys’ developmental patterns better than girls” (p. 843). Although unmentioned by the authors, a further implication may be culled from the following two findings from this study: (a) childhood prevalence rates fell to 8.3% at age 12, after which adult impairment disorders (e.g., depression, panic disorders, SUDs, etc.) began to rise, and; (b) rates of SED increased between the ages of 12 and 16. Thus, although there is more work to be done on the antecedents of these disorders, researchers and policymakers may want to target preventative mental health interventions to children in the 12-year-old age group.

Table 1. Predicted Cumulative Prevalence of Psychiatric Disorders at Age 16, by Percentage of Participants (SE)

Diagnosis	Total	Girls	Boys
Any disorder	36.7 (2.7)	31.0 (2.3)	42.3 (3.1)
Any emotional disorder	15.0 (1.7)	17.1 (1.7)	13.0 (1.6)
Any anxiety disorder	9.9 (1.5)	12.1 (1.5)	7.7 (1.4)
Any depressive disorder	9.5 (1.1)	11.7 (1.2)	7.3 (1.0)
Any behavioral disorder	23.0 (1.7)	16.1 (1.2)	29.9 (2.2)
Conduct disorder	9.0 (1.2)	3.8 (.7)	14.1 (1.8)
Oppositional defiant disorder	11.3 (1.0)	9.1 (1.0)	13.4 (1.0)
ADHD	4.1 (.7)	1.1 (.2)	7.0 (1.1)
SUDs	12.2 (.6)	10.1 (.5)	14.3 (.7)

References:

Angold, A., Erklani, A., Farmer, EMZ, Fairbank, J.A., Burns, B. J., Keeler, G., & Costello, E. J. (2002). Psychiatric disorder, impairment, and service use in rural African American and White youth. *Archives of General Psychiatry*, 59, 893-901.