Taking Disruptive Mood Dysregulation Disorder Out for a Test Drive

Explosive anger outbursts and persistent irritability are among the most problematic symptoms in child and adolescent psychiatry, and they can present as a feature of many different psychiatric illnesses. However, there are concerns that youths with chronic irritability and anger outbursts are being increasingly misdiagnosed as having bipolar disorder (1). These concerns led to the creation of a new diagnosis for DSM-5: disruptive mood dysregulation disorder. The development of this disorder has been controversial, in part because there are no published data using the proposed diagnostic criteria for youths. The scientific support for disruptive mood dysregulation disorder comes primarily from studies of the related but not identical construct of severe mood dysregulation. The article by Copeland et al. (2) in this issue of the *Journal* is among the first to use empirical data to examine disruptive mood dysregulation, and in doing so it begins to fill a large and critical gap in the scientific literature (2).

Disruptive mood dysregulation disorder has two symptom criteria: severe temper outbursts and irritable or angry mood. The diagnosis has criteria for frequency (at least three outbursts per week), persistence (irritable/angry mood most of the day, nearly every day), duration (at least 12 months, with no more than 3 consecutive months without meeting symptom criteria), age (minimum age 6 years), age at onset (before age 10), and context (present in multiple settings). Lastly, the disorder has a relatively complex set of diagnostic exclusion criteria, which include a requirement to use the disruptive mood dysregulation diagnosis when a child meets criteria for both disruptive mood dysregulation and oppositional defiant disorders. This requirement was waived in the Copeland et al. study specifically to examine the overlap between the two.

Copeland et al. use existing data from large epidemiological samples covering a broad age range that includes preschool (ages 2–5) and school-age (ages 9–17) cohorts. The children and adolescents were assessed using structured diagnostic instruments evaluating the constructs of anger outbursts and irritable or angry mood so that the disruptive mood dysregulation criteria could be applied retrospectively with high fidelity. The authors also examined the prevalence of individual criteria and the effects of excluding certain criteria.

The results are enlightening, although perhaps not surprising to some clinicians and parents. Nearly half of the school-age youths were reported to have severe temper outbursts during the 3 months prior to assessment. When the frequency criterion was applied, the prevalence dropped nearly sevenfold to a relatively common 6%–7%. Negative mood (defined as having depressed, sad, irritable, or angry mood or low frustration tolerance on most days) was present in 8%–13% of the school-age children. Applying the duration criterion dropped the prevalence to 1.5%–2.8%, and applying all the disruptive mood dysregulation criteria resulted in a prevalence of about 1%. The school-age youths with the disorder had high rates

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of comorbid psychiatric illness, impairment, and service use. Given these findings, it seems that if all of the criteria (except for the diagnostic exclusions) were applied, the disruptive mood dysregulation diagnosis would be uncommon, but most of the school-age youths with the disorder would have significant psychopathology.

Similar results were found in the preschool sample, except for much higher prevalence of all of the diagnostic criteria. Severe tantrums were present in 81% of preschoolers, and they occurred at least three times a week in 18%. Negative mood was present in 21%, and when all of the criteria except for age were applied, 3.3% of the preschoolers had disruptive mood dysregulation disorder.

These findings indicate that the prevalence of the new disorder is highly dependent on applying the frequency, persistence, and duration criteria. However, retrospective recall of this kind of temporal information over extended periods can be difficult for caregivers and children. This may in part account for the questionable test-retest reliability of disruptive mood dysregulation disorder in the DSM-5 field trials (kappa=0.25) (3). It may also contribute to the limited longitudinal stability of the disorder found in one clinical study (4). Although the stability of disruptive mood dysregulation was not directly assessed in the Copeland et al. study, in one of the school-age samples, the cumulative prevalence of the disorder over multiple assessments by age 16 was 4.4%—four times the point prevalence. Therefore, it is likely that a significant percentage of youths with disruptive mood dysregulation met the criteria at only one assessment.

It is clear that the field can benefit from more developmental research on severe anger outbursts and chronic irritability.

Disruptive mood dysregulation disorder was highly comorbid with internalizing (depression and anxiety) and externalizing disorders (attention-deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder). High rates of comorbidity do not necessarily limit the validity of disruptive mood dysregulation, as comorbidity is the rule in child psychiatric diagnosis. However, the comorbidity with oppositional defiant disorder was especially high. About 25% of school-age youths with oppositional defiant disorder also met criteria for disruptive mood dysregulation disorder, and the odds ratios of co-occurrence ranged from 53 to 103. A similar odds ratio for the co-occurrence (68.7) was recently reported in a study of children referred for psychiatric treatment (4), although the rate of overlap was higher in the clinical cohort, as 58% of the youths with oppositional defiant disorder also met criteria for disruptive mood dysregulation disorder. In contrast, lower degrees of overlap were observed in a preliminary report (1), with 15% of youths with oppositional defiant disorder in community samples and 25% of those in clinical samples experiencing chronic irritability and recurrent severe temper outbursts.

Oppositional defiant disorder is a heterogeneous phenotype that combines elements of mood problems with disruptive behavior. Some authors have found that the "irritable mood" domain of this disorder may be associated with higher rates of depressive or anxiety disorders in the future, which raises the possibility that separating out youths with oppositional defiant disorder who have high levels of irritability could be diagnostically important (5, 6). Conversely, if the symptoms in the subset of youths with both oppositional defiant disorder and disruptive mood dysregulation disorder do not differ significantly from other youths with

oppositional defiant disorder, then disruptive mood dysregulation is unlikely to be distinct from oppositional defiant disorder and would have limited diagnostic utility. Such was the case in the study of referred children, as there were no differences on multiple phenomenological measures between youths with disruptive behavior disorders who met criteria for disruptive mood dysregulation compared with those who did not (4).

One surprising finding was that there was only partial diagnostic overlap between disruptive mood dysregulation and severe mood dysregulation. A previous study examined the prevalence of severe mood dysregulation in one of the school-age cohorts. Since the disruptive mood dysregulation criteria were based on those for severe mood dysregulation, except for the elimination of symptoms of hyperarousal, one would expect a high degree of overlap. However, only 39% of youths with severe mood dysregulation also met criteria for disruptive mood dysregulation, which calls into question the degree to which data from samples of youths with severe mood dysregulation directly apply to the disruptive mood dysregulation diagnosis.

The article from Copeland et al. sheds some light on how disruptive mood dysregulation disorder might function as a diagnosis. When applied to epidemiological samples, this disorder has a low cross-sectional prevalence and identifies youths who are generally impaired and have high rates of comorbid internalizing and externalizing disorders. However, the prevalence rate is highly contingent on the temporal diagnostic criteria, as the symptoms are quite common, especially in preschool children. It will be important to examine the longitudinal course of youths with disruptive mood dysregulation in these and other samples, as the cumulative prevalence of the disorder rose substantially over repeated assessments.

Disruptive mood dysregulation disorder will be included as a diagnosis in the body of DSM-5 rather than in the appendix as criteria for further study. The research of Copeland and colleagues highlights the importance of the disruptive mood dysregulation phenotype, but it also raises some concerns about the validity of the diagnosis.

Regardless of where one stands on the issue of including the disorder in DSM-5, it is clear that the field can benefit from more developmental research on severe anger outbursts and chronic irritability. Children and adolescents who have persistent, explosive irritability and anger are highly impaired, and outbursts of rage are a frequent precipitant of inpatient hospitalization (7). It is imperative for clinicians to search for potential causes of severe irritability in an individual child, whether it be psychosocial stressors, history of maltreatment, family conflict, learning or communication disorders, other axis I psychiatric disorders, or some combination of these or other factors. Although effective treatment of underlying mood, anxiety, autism spectrum, or behavioral disorders can result in substantial improvements, significant numbers of these youths do not respond adequately to existing therapies. For many of these poor responders, the severity of the anger appears to be far out of proportion to any contributing psychosocial factors, and our current diagnostic system does not have a good place for them. One can conclude that at this time, not enough scientific data about these kids are available to create a new diagnosis. However, we should all agree on the vital importance of this problem and the need to expand our efforts to better understand the complex construct of irritability so that we can improve the assessment, diagnosis, and treatment of some of our sickest children.

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DAVID AXELSON, M.D.

From the Department of Psychiatry, Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center, Pittsburgh. Address correspondence to Dr. Axelson (axelsonda@upmc.edu). *This editorial was accepted for publication in Nov. 2012 (doi: 10.1176/appi.ajp.2012.12111434).*

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