Prevalence, Comorbidity, and Correlates of DSM-5 Proposed Disruptive Mood Dysregulation Disorder

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Objective: No empirical studies on the DSM-5 proposed disruptive mood dysregulation disorder have yet been published. This study estimated prevalence, comorbidity, and correlates of this proposed disorder in the community.

Method: Prevalence rates were estimated using data from three community studies involving 7,881 observations of 3,258 participants from 2 to 17 years old. Disruptive mood dysregulation disorder was diagnosed using structured psychiatric interviews.

Results: Three-month prevalence rates for meeting criteria for disruptive mood dysregulation disorder ranged from 0.8% to 3.3%, with the highest rate in preschoolers. Rates dropped slightly with the strict application of the exclusion criterion, but they were largely unaffected by the application of onset and duration criteria. Disruptive mood dysregulation

co-occurred with all common psychiatric disorders. The highest levels of co-occurrence were with depressive disorders (odds ratios between 9.9 and 23.5) and oppositional defiant disorder (odds ratios between 52.9 and 103.0). Disruptive mood dysregulation occurred with another disorder 62%–92% of the time, and it occurred with both an emotional and a behavioral disorder 32%–68% of the time. Affected children displayed elevated rates of social impairments, school suspension, service use, and poverty.

Conclusions: Disruptive mood dysregulation disorder is relatively uncommon after early childhood, frequently co-occurs with other psychiatric disorders, and meets common standards for psychiatric "caseness." This disorder identifies children with severe levels of both emotional and behavioral dysregulation.

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Disruptive mood dysregulation disorder (briefly called temper dysregulation disorder with dysphoria) has been proposed by the DSM-5 work groups for childhood and adolescent disorders and mood disorders to account for children with severe emotional and behavioral problems, of which a prominent feature is nonepisodic (or chronic) irritability (1). Such a phenotype had been conceptualized as pediatric bipolar disorder (1, 2), but evidence from both community and clinical longitudinal studies suggests that such irritability is associated with later unipolar, but not bipolar, mood disorders (3–5). The work groups adapted the "severe mood dysregulation" category proposed by Leibenluft et al. (6) by opting for a more descriptive name and eliminating hyperarousal as a criterial symptom. Thus, the criteria for the proposed disorder include frequent (three or more times per week) severe temper outbursts combined with persistently negative mood between outbursts. These symptoms must be present for at least 12 months in multiple settings, have an onset before age 10, and the child must be at least 6 years old. The disorder has proven to be one of the more controversial proposals for DSM-5 (7–10).

Concerns related to this proposed diagnosis fall into two groups: 1) the potential negative consequences of adding

a new childhood diagnostic category (e.g., the possibility that it might result in increased medication use in young children or a popular backlash against pathologizing "normal" behavior) and 2) the lack of any empirical basis for the definition (7–10). The justification for disruptive mood dysregulation disorder itself states, "It can certainly be argued that it is premature to suggest the addition of the disruptive mood dysregulation disorder diagnosis to DSM-5, since the work has been done predominately by one research group in a select research setting, and many questions remain unanswered" (1). But this understates the problem. All research to date has focused on severe mood dysregulation, not the proposed disruptive mood dysregulation disorder criteria. As noted above, the latter omitted the hyperarousal criterion and also differ in terms of criteria related to the onset of symptoms (age 10 years for disruptive mood dysregulation disorder and age 12 for severe mood dysregulation). There are in fact no published empirical studies that have focused on the newly proposed criteria for disruptive mood dysregulation disorder. Our goal in this study was to review the relative utility of the proposed criteria in community samples of children and to determine whether the children who meet these criteria display a pattern of functioning indicative of psychopathology.

This article is featured in this month's AJP **Audio** and is discussed in an **Editorial** by Dr. Axelson (p. 136)

TABLE 1. Characteristics of Three Community-Based Samples

Characteristic	Duke Preschool Anxiety Study	Great Smoky Mountains Study	Caring for Children in the Community
Total subjects	918	1,420	920
Total observations	918	5,336	1,627
Informant	Parent only	Parent and self-report	Parent and self-report
Age (years)	mean=3.9 (SD=1.3, range=2–6)	mean=13.7 (SD=2.0, range=9–17)	mean=14.2 (SD=3.4, range=9–17)
% Female	51.8	49.2	50.0
Race/Ethnicity			
White	62.1%	89.8%	41.0%
African American	37.5%	6.4%	53.8%
Native American		3.8%	
Other	0.5%		5.2%
Interview	Preschool Age Psychiatric Assessment	Child and Adolescent Psychiatric Assessment	Child and Adolescent Psychiatric Assessment

Method

Participants

Table 1 summarizes the characteristics of the three community-based samples used in our study.

The Duke Preschool Anxiety Study. This is a cross-sectional study of a representative sample of preschoolers (ages 2–5) attending a large primary care pediatric clinic in central North Carolina. In this study, 3,424 clinic attendees were screened using the parent report of the anxious/depressed subscale of the Child Behavior Checklist. The parents of all children who scored 4 or more on the screening in addition to a 7.3% random sample of the remaining children received a diagnostic interview. Of 1,125 participants selected, the parents of 918 children agreed to complete interviews (81.6%). Of these children, 49% were girls, 42% were African American, and 43% were white. Data from an earlier sample recruited from this clinical setting indicated that the mean and standard deviation of scores on the total symptom scale of the Child Behavior Checklist (for ages 1.5–5 years) were almost identical to those reported in the national norms (11). The majority (58%) were attending the pediatric clinic for well visits.

The Great Smoky Mountains Study. This is a longitudinal, representative study of children in 11 predominantly rural counties of North Carolina (12). Three cohorts of children ages 9, 11, and 13 years were recruited from a pool of some 20,000 children using a two-stage sampling design. Of the 1,777 children selected to participate in interviews, 1,420 completed interviews (79.9%; see also Costello et al. [12]). American Indians were oversampled to constitute 25% of the sample, and 7% of the participants were African American. Annual assessments were completed on the 1,420 children until age 16, for a total of 6,634 assessments. The youngest cohort was not interviewed at age 13, and only half of the youngest cohort was interviewed at age 14 because of funding limitations.

Caring for Children in the Community. This is a longitudinal, representative study of 920 children ages 9–17 years from four rural counties in North Carolina (13). A random sample of 17,117 individuals in the public school database generated a screening sample of 4,500 youths. Of these, 3,613 agreed to complete screenings, which were done with the externalizing scale of the Child Behavior Checklist, and 1,302 were selected for interviews. Interviews were completed for 920 participants (70.7%). Fifty-four percent of the participants were African American, and 50% were girls. Two additional assessments were completed at 9-month intervals for participants who had not yet reached age 18.

For all studies, the interviews were completed by a parent figure and by the subject if he or she was at least 9 years old. Before the interviews in each study began, the parent and youth signed informed consent or assent forms that were approved by the Duke University Medical Center Institutional Review Board. All interviewers had at least a bachelor's level degree, and they received 1 month of training and constant quality control.

Measures

Disruptive mood dysregulation disorder. None of the studies were designed to assess disruptive mood dysregulation disorder. However, it was possible to define disruptive mood dysregulation because its criteria overlap entirely with those of other common disorders. The psychiatric status of participants in all samples was assessed with the Child and Adolescent Psychiatric Assessment (14, 15) or its down-aged congener, the Preschool Age Psychiatric Assessment (11). A symptom was counted as present if the parent, child, or both endorsed it. To minimize recall bias, the time frame for determining the presence of psychiatric symptoms was the preceding 3 months. However, because onset dates were collected for all items, the duration criterion was determinable.

Definitions for disruptive mood dysregulation disorder criteria were identical across studies (the codebook is available at http://devepi.duhs.duke.edu/codebooks.html). Criterion A was defined using items that assessed temper outbursts and tantrums as part of the oppositional/conduct problems section. If these behaviors were reported, the informant was then queried about the frequencies of these behaviors at home, school, and elsewhere. We could therefore calculate whether these behaviors occurred three or more times per week (criterion B) and whether they occurred across multiple settings (criterion E). The frequency of temper outbursts in different contexts was not assessed for the first wave of the Great Smoky Mountains Study, so this wave was not included in our analyses. Criterion C was assessed using items that addressed the frequency of depressed, sad, irritable, or angry mood or low frustration threshold. These moods had to be displayed on more days than not. Onsets for temper outbursts and negative mood were used to establish a duration of more than 12 months (criterion D) and onset before age 10 (criterion G). Criterion F requires a chronological age of at least 6 years for the diagnosis to be made. Of course, nearly all participants in the preschool sample would be excluded if this criterion were applied to them. In order to compare the potential presentation of disruptive mood dysregulation disorder in young children with that in older children, we ignored criterion F in the preschool sample. Criteria H and I are exclusions based on other psychiatric disorders or conditions. Criterion H refers to a manic

TABLE 2. Prevalence Rates of Disruptive Mood Dysregulation Disorder and Individual Criteria in Three Community Samples[a]

Criterion	Duke Preschool Anxiety Study (N=918)		Great Smoky Mountains Study (N=5,336)		Caring for Children in the Community (N=1,627)	
	N	%	N	%	N	%
A. Severe tantrums	769	80.8	2,465	45.7	871	49.0
B. Frequency	182	17.7	514	7.1	140	6.3
C. Negative mood	268	21.1	798	12.8	179	8.2
D. Duration	92	5.9	221	2.8	42	1.5
E. Multiple settings	116	10.1	229	2.8	101	3.8
Excluding onset criterion			99	1.2	33	0.9
Excluding duration criterion			143	1.6	47	1.2
Full criteria	58	3.3	89	1.1	31	0.8

[a] Percentages are weighted and N values are unweighted. The criterion that a child must be at least 6 years old to be diagnosed with disruptive mood dysregulation disorder was not applied. The exclusion criteria were not applied, and rates with application of the exclusion rate are provided in Table 3.

episode in the past year. Across all samples, this was vanishingly rare and had no impact on the diagnosis of disruptive mood dysregulation disorder. Criterion I, however, would affect prevalence rates because it involves exclusion for common mood disorders. However, in a study aimed at exploring the utility of the proposed criteria, it would make little sense to exclude one of the most likely "competing" categories a priori. We examined the effects of hierarchical rules empirically.

Psychiatric comorbidities. We included the diagnostic groups of depressive disorders, anxiety disorders (generalized anxiety disorder, social phobia, separation anxiety disorder, and specific phobia), conduct disorder, attention deficit hyperactivity disorder (ADHD), and oppositional defiant disorder. Children who met criteria for conduct disorder could also meet criteria for oppositional defiant disorder. For specific analyses, disorders were categorized as either emotional, which included anxiety and depressive disorders, or behavioral, which included conduct disorder, oppositional defiant disorder, and ADHD. Two-week test-retest reliabilities of interview-derived diagnoses were comparable to those of other structured interviews, with kappa values ranging from 0.36 to 1.0 (11, 14).

Impairments. Psychosocial impairment secondary to psychiatric symptoms was assessed in areas of functioning related to life at home, at school, and elsewhere (see Angold et al. [14] for a full description of the concept of impairment implemented in the Child and Adolescent Psychiatric Assessment). For this analysis, impairment variables were constructed to describe social functioning between the subject and his or her parents, sibling, and teachers. In addition, recent suspension from school was noted.

Sociodemographic correlates. Poverty status was coded using thresholds issued by the U.S. Census Bureau based on income and family size (16). We coded parental school dropout if the participant's parents had not graduated from high school, and we coded single parent if the parent reported only one parental figure in the house.

Service use. Service utilization for mental health problems was identified using the Child and Adolescent Services Assessment (17, 18), an interview for the parent and child that provides details of mental health service use during the 3 months preceding the interview. For this study, we categorized services into five domains: specialty mental health, general medical, school, child welfare, and juvenile justice.

Analytic Strategy

Participants from all samples were assigned a weight that was inversely proportional to their probability of selection to account for screen stratification, so that the results from our analyses represent unbiased estimates for the original populations from which the samples were drawn. Sandwich-type variance corrections (19) were applied to adjust for the parameter and variance effects induced by sampling stratification and repeated observations. Odds ratios for comorbidity analyses or associations with other variables were conducted using weighted logistic regression in the SAS procedure GENMOD (SAS Institute, Cary, N.C.).

Results

Prevalence Rates

Three-month prevalence rates are provided for each criterion in Table 2. Estimates for those meeting all inclusion criteria ranged from 0.8% to 3.3%. The rates for the full diagnosis and each criterion were highest in the preschool sample. Temper outbursts and negative mood (criteria A and C) were common across all samples. The application of frequency, duration, and cross-context criteria (criteria B, D, and E) limited the rates of those meeting full criteria. Having an onset before age 10 had little impact on the final prevalence rates in the two older samples. The only sex difference in the rates of individual criteria in any of the three samples was for criterion E (multiple settings) in the Great Smoky Mountains Study (3.6% in boys and 1.9% in girls; p=0.007). No differences were observed in the rates of the full diagnosis by sex in any of the three samples. In the Great Smoky Mountains Study, which included multiple observations across childhood and adolescence, the cumulative prevalence by age 16 was 4.4% (SE=0.9).

The higher rates of severe tantrums and negative mood in the younger sample are consistent with findings from developmental psychopathology (e.g., Tremblay et al. [20]). If the frequency thresholds for tantrums and negative mood were tightened to require that preschoolers display these problems every day, then 10.3% (SE=1.8) of children would meet criterion B, 16.9% (SE=2.1) would meet criterion C, and 1.7% (SE=2.1) would meet full diagnostic criteria. This rate is still higher than in the older samples, but

TABLE 3. Comorbidity Rates Between Disruptive Mood Dysregulation Disorder and Other Common Psychiatric Disorders[a]

Comorbidity	Rate of DMDD (%)		Rate of Diagnosis (%)		Odds Ratio	95% CI	p
	Diagnosis	No Diagnosis	DMDD	No DMDD			
Duke Preschool Anxiety Study							
Depressive	23.0	2.9	12.4	1.4	9.9	4.1–23.7	<0.0001
Anxiety	7.5	1.3	72.9	30.7	6.1	1.9–19.0	0.002
ODD	37.7	1.1	67.7	3.8	52.9	17.1–163.8	<0.0001
Conduct disorder	9.7	2.8	22.1	7.0	3.8	1.5–9.3	0.004
ADHD	23.5	2.4	30.8	3.4	12.6	4.0–39.6	<0.0001
Great Smoky Mountains Study							
Depressive	15.6	0.8	32.7	2.1	23.5	9.9–56.1	<0.0001
Anxiety	5.5	1.0	9.3	1.8	5.2	1.2–22.9	0.03
ODD	23.3	0.5	57.4	2.2	61.0	27.7–134.4	<0.0001
Conduct disorder	10.9	0.9	23.1	2.1	11.9	3.4–41.0	<0.0001
ADHD	9.2	1.1	6.3	0.7	7.6	2.9–19.7	<0.0001
Caring for Children in the Community							
Depressive	11.8	0.8	35.8	3.2	16.3	6.3–42.1	<0.0001
Anxiety	2.5	1.1	7.7	3.6	2.2	0.6–8.2	0.25
ODD	27.0	0.4	70.6	2.3	103.0	40.1–264.2	<0.0001
Conduct disorder	5.3	1.0	18.8	4.0	4.4	1.2–15.3	0.02
ADHD	4.3	1.1	9.4	1.8	2.9	0.4–23.3	0.32

[a] DMDD=disruptive mood dysregulation disorder; ODD=oppositional defiant disorder; ADHD=attention-deficit hyperactivity disorder.

these thresholds also indicate a high level of emotional and behavioral dysregulation.

Comorbidity

One of the primary questions for this proposed disorder has been the degree to which it overlaps with other psychiatric disorders. Table 3 lists the rates of co-occurrence between disruptive mood dysregulation disorder and other common psychiatric disorders. Disruptive mood dysregulation significantly co-occurred with all common psychiatric disorders with the exception of anxiety disorders and ADHD in one data set, although there was evidence of overlap even in these cases. The highest levels of co-occurrence were with depressive disorders (odds ratios between 9.9 and 23.5) and oppositional defiant disorder (odds ratios between 52.9 and 103.0). Rates of disruptive mood dysregulation disorder in those without a depressive disorder provide the prevalence rate if the exclusion criterion were strictly applied. Application of this criterion reduces the rates to 2.9% (SE=0.8) in the Duke Preschool Anxiety sample, 0.8% (SE=0.2) in the Great Smoky Mountains sample, and 0.8% (SE=0.2) in the Caring for Children in the Community sample.

Seven manic episodes were reported across 6,963 observations in the older samples. Only one of these cases overlapped with disruptive mood dysregulation disorder. Levels of comorbidity were similar when applying the exclusion criterion for those with mania. We also looked at the overlap with Leibenluft's severe mood dysregulation, which was evaluated in the Great Smoky Mountains Study (5). The levels of co-occurrence were high (odds ratio=44.5, 95% CI=18.5–107.1; p<0.001), with 38.9% of severe mood

dysregulation cases meeting criteria for disruptive mood dysregulation disorder.

Figure 1 depicts how often disruptive mood dysregulation disorder overlapped with emotional disorders (anxiety or depressive disorders), behavioral disorders (conduct disorder, oppositional defiant disorder, or ADHD), or both. Although there were variations across samples, the most common presentation in each sample was comorbidity with another disorder. The likelihood of disruptive mood dysregulation disorder alone ranged from 8% in the Duke Preschool Anxiety sample to 38% in the Great Smoky Mountains sample. (For comparison, conduct disorder occurred alone 64% of the time and depression occurred alone 36.6% of the time in the Great Smoky Mountains study.) The likelihood of disruptive mood dysregulation disorder occurring with both an emotional and a behavioral disorder ranged from 68% in the Duke Preschool Anxiety sample to 32% in the Great Smoky Mountains sample.

Impairment, Service Use, and Sociodemographic Correlates

Table 4 summarizes the relationships between disruptive mood dysregulation disorder and impairments, service use, and sociodemographic correlates in the studies of older children. Youths with disruptive mood dysregulation disorder experienced higher levels of all social impairments and also had elevated rates of recent suspension. Rates of service use were universally elevated in affected subjects compared with those without a diagnosis. These individuals were more likely to come from impoverished families, although this was not necessarily accounted for by family structure or parental educational level.

Given the high degree of overlap between disruptive mood dysregulation and other disorders, it is reasonable to suggest that these associations might be accounted for by such comorbidity. Analyses from Table 3 were rerun in the Great Smoky Mountains Study, excluding those who met criteria for any other DSM disorders. All significant findings continued to be significant except those for impairment in relations with teacher and *any* service use.
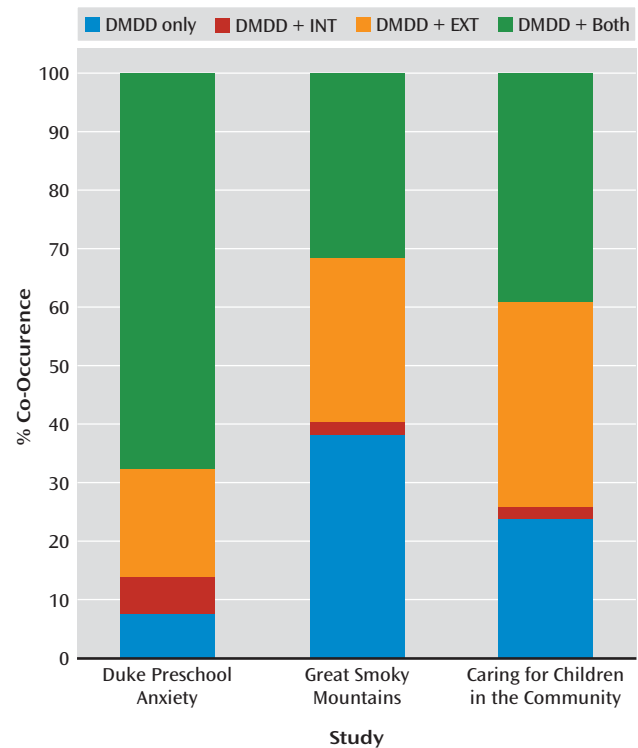
Discussion

To our knowledge, this is the first study to apply the proposed criteria for disruptive mood dysregulation disorder in community samples. The studies evaluated children and adolescents from 2 to 18 years old in rural and urban communities and included large groups of European Americans, African Americans, and American Indians. Disruptive mood dysregulation occurred at relatively low rates in the community, and it most often occurred in combination with other psychiatric disorders. This propensity toward comorbidity extended to all common psychiatric disorders but was strongest for oppositional defiant disorder and depressive disorders. Overall, disruptive mood dysregulation met the standards of psychiatric caseness tested: it was comorbid with psychiatric disorders and was associated with high levels of social impairment, school suspension, all types of service use, and family poverty. This does not clarify its distinctiveness from existing disorders, however.

A few limitations of this study should be kept in mind. First, the investigation of disruptive mood dysregulation disorder in the three studies relied exclusively on psychiatric interviews designed to assess other disorders. Test-retest reliability data are not available for disruptive mood dysregulation disorder. None of the samples were collected to approximate a nationally representative sample of children, although all studies employed sampling and weighting strategies to minimize selection bias. Furthermore, results from these representative community samples will likely differ from clinical samples of disruptive mood dysregulation disorder. All studies focused on a 3-month primary period to minimize recall bias and forgetting.

In these samples, disruptive mood dysregulation was relatively uncommon in childhood and adolescence. By comparison, 3-month rates were between 2% and 3% for depressive disorders and between 2% and 5% for conduct disorder in the older samples (12, 13). These rates are consistent with the proposed justification for disruptive mood dysregulation as a "severe mood disorder" (1). It was not the case, however, that the primary symptoms were uncommon. It was only when frequency, duration, and cross-context criteria were applied that a relatively uncommon phenotype was identified.

The prevalence of disruptive mood dysregulation disorder in the preschool sample was 2–3 times that observed

FIGURE 1. Co-Occurrence Rates of Disruptive Mood Dysregulation Disorder in Three Community Samples[a]

[a] These charts indicate the rates of individuals with disruptive mood dysregulation disorder (DMDD) only, disruptive mood dysregulation plus emotional disorders (DMDD+INT), disruptive mood dysregulation plus behavioral disorders (DMDD+EXT), or disruptive mood dysregulation plus both emotional and behavioral disorders (DMDD+Both) in the Duke Preschool Anxiety Study, the Great Smoky Mountains Study, and the Caring for Children in the Community study.

in the older samples. This is not surprising given the literature identifying early childhood as a peak period for temper tantrums and irritability (e.g., see Table 2 in Egger and Angold [21]). Developmental differences are often used to justify amended criteria, and we present one example of alternative frequency thresholds for criteria B and C that could attenuate prevalence differences across development.

In the two older samples, application of the onset criterion had only a minimal effect on the prevalence rates. Furthermore, no justification was provided by the DSM-5 work groups for why this disorder cannot be diagnosed before age 6 (1). This age criterion precludes the diagnosis for preschoolers, yet our results suggest that disruptive mood dysregulation disorder can be diagnosed in this population and that its comorbidity patterns were generally similar to those observed in older children. The DSM-5 Task Force states that "only by having consistent (reliable) diagnoses can researchers compare different treatments for similar patients, determine the risk factors and causes for specific disorders, and determine their incidence and prevalence rates" (22). If this is so, then it might be

TABLE 4. Associations Between Disruptive Mood Dysregulation Disorder and Impairments, Service Use, and Sociodemographic Variables[a]

Criterion	Great Smoky Mountains Study					Caring for Children in the Community				
	DMDD (%)	No DMDD (%)	Odds Ratio	95% CI	p	DMDD (%)	No DMDD (%)	Odds Ratio	95% CI	p
Impairment										
Parental relations	57.3	7.0	17.2	8.2–36.1	<0.0001	64.4	11.1	12.3	5.2–29.2	<0.0001
Sibling relations	25.4	3.8	7.7	2.6–22.7	0.0002	66.2	6.8	24.3	10.7–55.3	<0.0001
Teacher relations	16.5	2.0	8.5	2.7–26.8	0.0003	55.1	4.5	20.9	10.2–42.7	<0.0001
School suspension	35.1	4.2	11.4	4.4–30.0	<0.0001	38.3	8.6	6.0	2.8–12.9	<0.0001
Service use										
Mental health	31.5	6.0	6.5	2.6–16.3	<0.0001	39.8	4.7	13.8	4.7–40.5	<0.0001
General medical	8.0	3.3	2.6	1.3–5.1	0.006	0.0	2.4			
School system	26.0	7.5	4.1	1.7–9.7	0.002	37.5	8.7	6.8	2.2–20.5	0.0008
Child welfare	15.4	1.3	13.1	3.6–47.9	0.0001	5.8	0.6	10.2	1.4–75.3	0.02
Juvenile justice	8.8	1.8	4.1	0.6–27.7	0.15	28.4	1.0	16.1	4.6–56.5	<0.0001
Any	54.2	18.0	4.5	2.1–9.7	0.001	60.8	14.0	9.6	3.2–28.2	<0.0001
Sociodemographic										
Impoverished	42.9	19.0	3.0	1.3–6.9	0.01	66.2	31.9	4.1	1.6–10.4	0.003
Single-parent family	40.0	23.7	2.2	1.0–4.9	0.05	26.1	14.7	2.0	0.8–48.0	0.12
Low parent education	19.4	17.3	1.3	0.5–3.2	0.61	61.8	42.7	2.1	0.9–4.9	0.09

[a] DMDD=disruptive mood dysregulation disorder.

preferable to eliminate this criterion to facilitate the study of severe irritability across development.

A primary concern has been whether the proposed criteria identify a distinct diagnostic entity (8). Comorbidity is common in psychiatry. In a meta-analysis of childhood comorbidity patterns, median odds ratios for comorbidity ranged from 3.0 for ADHD with anxiety to 10.7 for ADHD with conduct disorder (23), and comorbidity rates from individual studies were often much higher. Yet these high levels of pairwise associations are not typically considered a threat to the validity of the diagnostic system. The observed comorbidity rates in the present study were generally within the range observed for other disorder pairs with the exception of oppositional defiant disorder (odds ratios ranged from 52.9 to 103.0). It was also the case that disruptive mood dysregulation disorder did sometimes occur alone, particularly in the older samples.

The high levels of co-occurrence with oppositional defiant disorder, however, require further attention and belie proposed attempts to categorize disruptive mood dysregulation as a mood disorder only. We believe that a provisional effort should be made to clarify the nature of this overlap before the publication of DSM-5. At the same time, cross-sectional comorbidity is only one consideration, and evidence from longitudinal studies (including the Great Smoky Mountains Study) has linked severe mood dysregulation with later mood disorders (3–5). This is exactly the same pattern that has been found for the putative behavioral disorder of oppositional defiant disorder (4, 24, 25), which so commonly co-occurs with disruptive mood dysregulation. Both oppositional defiant disorder and disruptive mood dysregulation disorder should be considered to have mixed behavioral and emotional features.

This diagnosis does not identify an area of unmet need in the traditional sense of marking children with lower levels of service utilization. For childhood disorders, most studies have found that between 35% and 45% of those with a disorder have received treatment (13, 26–28). With disruptive mood dysregulation disorder, 3-month service use rates were between 45% and 61%. This does not mean, of course, that the treatment such children receive is either appropriate or even helpful. Concerns about inappropriate or untested interventions are no less a concern than the absence of treatment altogether.

Conclusions

This early look at disruptive mood dysregulation disorder suggests that it meets common standards for psychiatric "caseness" and that it identifies a group of children with severe emotional and behavioral dysregulation. Its relatively low prevalence and high levels of service utilization moderate worries about "pathologizing" normal behavior, although the core symptoms are common and its rarity comes from strict application of frequency, duration, and cross-context criteria. It is unclear which aspects of the pathophysiology are unique to disruptive mood dysregulation and which are shared with the individual emotional and behavioral disorders with which it so commonly occurs. This should be a priority area of research (see Stringaris et al. [29] for one example) so that

these issues can be resolved well before the advent of DSM-6.

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