

Supplement 1 METHOD

Temper Loss items from the Multidimensional Assessment Profile of Disruptive Behavior (MAP-DB) were developed in ⁴ and included:

1. Have a temper tantrum, fall-out, or meltdown
2. Stamp feet or hold breath during a temper tantrum, fall-out, or meltdown
3. Have a temper tantrum, fall-out, or meltdown that lasted more than 5 minutes
4. Keep on having a temper tantrum, fall-out, or meltdown, even when you tried to help him/her calm down
5. Break or destroy things during a temper tantrum, fall-out, or meltdown
6. Have a temper tantrum, fall-out, or meltdown until exhausted
7. Hit, bite, or kick during a temper tantrum, fall-out, or meltdown
8. Lose temper or have a tantrum with you or other parent
9. Lose temper or have a tantrum with other adults (e.g., teacher, babysitter, family member)
10. Lose temper or have a tantrum when frustrated, angry, or upset
11. Lose temper or have a tantrum when tired, hungry, or sick
12. Lose temper or have a tantrum to get something he or she wanted
13. Lose temper or have a tantrum during daily routines, such as bedtime, mealtime, or getting dressed
14. Lose temper or have a tantrum “out of the blue” or for no reason
15. Become frustrated easily
16. Yell angrily at someone
17. Act irritable

18. Have difficulty calming down when angry
19. Have a short fuse (become angry quickly)
20. Get extremely angry
21. Have a hot or explosive temper
22. Stay angry for a long time

RESULTS

Of note, many of our predictors were non-normally distributed, with relatively fewer individuals endorsing the highest frequencies of irritable behavior. To address the possibility that non-normal distribution of responses affected our results, as an additional analysis, we probit-transformed the predictors, which decreased the potential impact of non-normality, and reran the stepwise logistic regression. Rerunning the model with probit-transformed irritability items to address potential skew in the predictors yielded the same significant items (“become frustrated easily” (odds ratio=1.64, $p<.001$), “break or destroy things during a temper tantrum, fall-out, or meltdown” (odds ratio=1.64, $p=.001$). This final model performed significantly better than the baseline model (i.e., modeling a constant only) ($\Delta\chi^2=40.25$, $df=2$, $p<.001$) as well as the step 1 model ($\Delta\chi^2=10.46$, $df=1$, $p=.001$), which added “become frustrated easily” to the baseline model. The final model, which added both “become frustrated easily” and “break or destroy things during a temper tantrum, fall-out, or meltdown,” explained 14.4% of the variance in cross-domain impairment.

Because 70 children (of 425 total) were not in childcare, and thus did not have a score on childcare impairment (and would therefore be probabilistically less likely to have impairment in multiple domains on the FLIS), we reran the stepwise logistic regression excluding Childcare

Impairment from the cross-domain impairment to examine whether Childcare Impairment unduly influenced the analysis. The same items (“become frustrated easily,” “break or destroy things during a temper tantrum, fall-out, or meltdown”), plus an additional item (“have a short fuse [become angry quickly]”), were identified in the final model as significantly predicting cross-domain impairment. The final model, which concluded after three steps, performed significantly better than the baseline model (i.e., modeling a constant only) ($\Delta\chi^2=37.67$, $df=3$, $p<.001$) as well as the step 2 model ($\Delta\chi^2=9.73$, $df=1$, $p=.002$), which added “break or destroy things during a temper tantrum, fall-out, or meltdown” and “become frustrated easily” to the baseline model. The final model explained 14.2% of the variance in cross-domain impairment. Of note, whereas the odds ratios for “become frustrated easily” (1.69, $p<.001$) and “break or destroy things during a temper tantrum, fall-out, or meltdown” (1.65, $p=.001$) were greater than 1, for “have a short fuse (become angry quickly)”, the odds ratio was less than 1 (.73, $p=.047$), indicating a potential suppressor effect.

Table S1. Receiver Operating Characteristic Results for Each Classification Variable for Clinically Optimized Irritability Score

	AUC	SE	<i>p</i>	Cutoff	Peak YI	Sensitivity	95% CI	Specificity	95% CI	PPV	95% CI	NPV	95% CI
ODD	0.80	0.027	<.001	3	0.53	0.70	[.60, .79]	0.83	[.78, .87]	0.58	[.50, .68]	0.90	[.85, .92]
DMDD	0.81	0.029	<.001	3	0.50	0.73	[.60, .84]	0.77	[.72, .81]	0.35	[.29, .50]	0.94	[.80, .96]
Other depressive disorders	0.81	0.035	<.001	3	0.46	0.72	[.55, .86]	0.74	[.69, .78]	0.21	[.17, .38]	0.97	[.93, .97]
Any DSM disorder	0.75	0.025	<.001	3	0.38	0.51	[.43, .58]	0.87	[.82, .91]	0.74	[.66, .80]	0.71	[.64, .79]

Note: AUC = area under the curve; DMDD = disruptive mood dysregulation disorder; NPV = negative predictive value; ODD = oppositional defiant disorder; PPV = positive predictive value; SE = standard error; YI = Youden's Index.

Table S2. Frequencies of Combinations of Scores on the Individual Items of the Clinically Optimized Irritability Score

Children Meeting Irritability Cutoff

Break or destroy things during a temper tantrum, fall-out, or meltdown

		0	1	2	3 or more	Total
<i>Become frustrated easily</i>	0	-	-	-	0 (0.0%)	0 (0.0%)
	1	-	-	4 (3.1%)	1 (0.8%)	5 (3.9%)
	2	-	22 (17.3%)	16 (12.6%)	2 (1.6%)	40 (31.5%)
	3 or more	30 (23.6%)	13 (10.2%)	19 (15.0%)	20 (15.7%)	82 (64.6%)
	Total	30 (23.6%)	35 (27.6%)	39 (30.7%)	23 (18.1%)	127 (100%)

Children Not Meeting Irritability Cutoff

Break or destroy things during a temper tantrum, fall-out, or meltdown

		0	1	2	3 or more	Total
<i>Become frustrated easily</i>	0	96 (33.0%)	7 (2.4%)	2 (0.7%)	-	105 (36.1%)
	1	93 (32.0%)	30 (10.3%)	-	-	123 (42.3%)
	2	63 (21.6%)	-	-	-	63 (21.6%)
	3 or more	-	-	-	-	-
	Total	252 (86.6%)	37 (12.7%)	2 (0.7%)	-	291 (100%)

Note: 0 = never in the past month; 1 = rarely (less than weekly); 2 = some days (1-3 days per week); 3 or more = at least most days (≥4-6 days). For purposes of illustration in this table, scores are collapsed at “3 or more.”

Table S3. Cross-Tabs of Children Meeting Irritability Cutoff at Time 1 (T1), Time 2 (T2), and Time 3 (T3)

Meets Irritability Cutoff at T1

		T3		Total
		Does Not Meet Cutoff	Meets Cutoff	
T2	Does Not Meet Cutoff	38.58%	12.60%	51.18%
	Meets Cutoff	25.98%	22.83%	48.82%
Total		64.57%	35.43%	100.00%

Does Not Meet Irritability Cutoff at T1

		T3		Total
		Does Not Meet Cutoff	Meets Cutoff	
T2	Does Not Meet Cutoff	79.53%	9.06%	88.59%
	Meets Cutoff	6.71%	4.70%	11.41%
Total		86.24%	13.76%	100.00%