

8572L Screen 171 - Alright, Stop! Regulate and Read - Emotion Regulation in Children with Persistent vs Transient Reading Difficulty

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Taylor Barnes, Denice Dalt, Suzanne Adloff
University of South Carolina

Background

Children with reading difficulties (RD) display increased emotion and depressive symptoms compared to children with reading skills

- (Gathercole et al., 2002; Grills et al., 2004)

Preschool and school-age children with RD have more problems with emotion regulation than peers with typical reading skills, but persist and improve

- (Gathercole et al., 2002; Grills, Johnson et al., 2004)

Method

Participants

- Preschoolers (ages 3-5) from 40 families (40% African American, 60% European American families)
- 40% females, 40% males; mean age = 4.02, standard deviation = 0.42, median age = 4.00, minimum = 3.02, maximum = 5.00, range = 11 months to 10 years, mean = 4.02, standard deviation = 0.42

Measures

- Parent report of perceived difficulties of learning how, various symptoms (depression, or emotional related symptoms)
- Interviewer report

 - 300 words (mean = 140 words, SD = 10 words)

- Interviewer report

 - 300 words (mean = 140 words, SD = 10 words)

Results

1. Children with persistent reading difficulties (RD) have persistent and reading difficulties and emotion symptoms higher than children with transient reading difficulties (mean = 2.64 vs. 1.54)

Descriptive Information on an BRIEF-2 Emotion Regulation Index Scores

	Persistent	Transient
2nd Grade: Mean	54.55	58.70
4th Grade: Mean	54.40	58.70

Study Aims

1. To compare emotion regulation, as measured by parent-report on the BRIEF-2, of a) children with persistent RD and b) children with "transient" RD at 2nd and at 4th grade.
2. To compare proportions of elevated emotion regulation problems for a) children with persistent RD and b) children with "transient" RD at 2nd and at 4th grade.

Emotion regulation represented by the Emotion Regulation Index (ERI) of the Teacher Regulation component of the Behavior Rating Inventory of Executive Function (BRIEF-2).

As the teacher-rated measure, resilience (mean = 4.0, SD = 1.0) was measured by their parents as having higher emotion regulation problems than resilience with reading difficulties (mean = 3.0, SD = 1.0) and reading difficulties (mean = 2.0, SD = 1.0). These were enhanced at higher grades (ERI resilience at 2nd grade = 4.0, SD = 1.0; at 4th grade = 4.0, SD = 1.0) and the proportion of parents reporting elevated emotion regulation difficulties (mean = 3.0, SD = 1.0).

Interviewer data showed 100% of resilience with RD was unresilient, resilience with reading difficulties was 50% unresilient, and resilience with reading difficulties with RD was 50% unresilient.

BRIEF-2 Emotion Regulation Index Scores: In Children With Persistent vs. Transient RD

Grade	Persistent RD	Transient RD
2nd Grade	54.55	58.70
4th Grade	54.40	58.70

Conclusions

1. Children with persistent reading difficulties (RD) have persistent and reading difficulties and emotion symptoms higher than children with transient reading difficulties (mean = 2.64 vs. 1.54)

2. Children with persistent RD have elevated emotion regulation problems compared to children with transient RD.

3. Children with persistent RD have elevated emotion regulation problems compared to children with transient RD.

4. Children with persistent RD have elevated emotion regulation problems compared to children with transient RD.

5. Children with persistent RD have elevated emotion regulation problems compared to children with transient RD.

Taylor Berrier, Dawna Duff, Suzanne Adloff

University of South Carolina

PRESENTED AT:



BACKGROUND

Children with word reading difficulties (RD) display increased anxious and depressive symptoms compared to children with typical reading.

- (Grills et al., 2022; Francis et al., 2019)

Preliminary work has shown that children with RD have more problems with emotion regulation than peers with typical reading skills, per parent and teacher report.

- (Berrier et al., 2023; Morte-Soriano et al., 2021)

However, in this work, there is considerable variability in the emotion regulation of children with RD, and a large percentage of children with RD display emotion regulation within normal limits.

We questioned whether emotion regulation problems are more common in children with persistent vs. transient RD.

STUDY AIMS

1. To compare emotion regulation, as measured by parent-ratings on the BRIEF-2, of a) children with persistent RD and b) children with "transient" RD at 2nd and at 4th grade.
2. To compare proportions of elevated emotion regulation problems for a) children with persistent RD and b) children with "transient" RD at 2nd and at 4th grade.

METHOD

Participants were 42 children aged 7:10 to 10 years at second grade when identified with RD (i.e., SS < 86 on WRMT-3 Basic Skills Cluster).

- 52% female; U.S. residents; monolingual English-speaking
- 2.4% American Indian/Alaskan Native; 4.8% Black/African American, 2.4% Multiracial, 2.4% Other, and 88.1% White. 11.9% were Hispanic/Latino.

Parents reported no previous diagnoses of hearing loss, autism spectrum disorder, or uncorrected vision impairment.

Persistent RD:

- 4th grade WRMT-3 BSC SS < 86 (n = 32)

Transient RD:

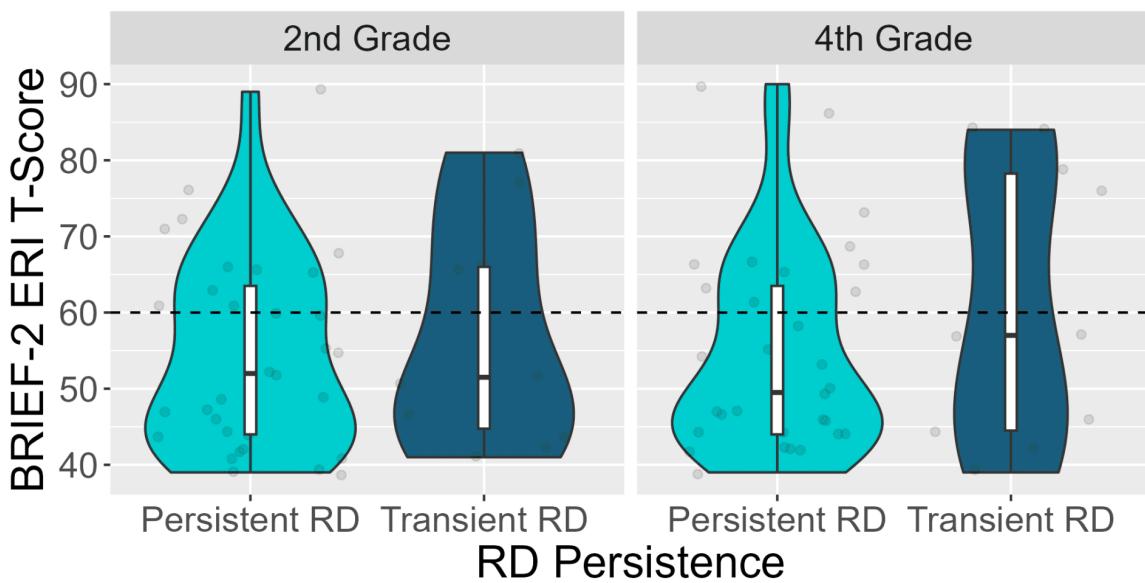
- 4th grade WRMT-3 BSC SS > 86 (n = 10)

Emotion regulation was measured by the Emotion Regulation Index (ERI) of the Behavior Rating of Executive Function-Second Edition (BRIEF-2).

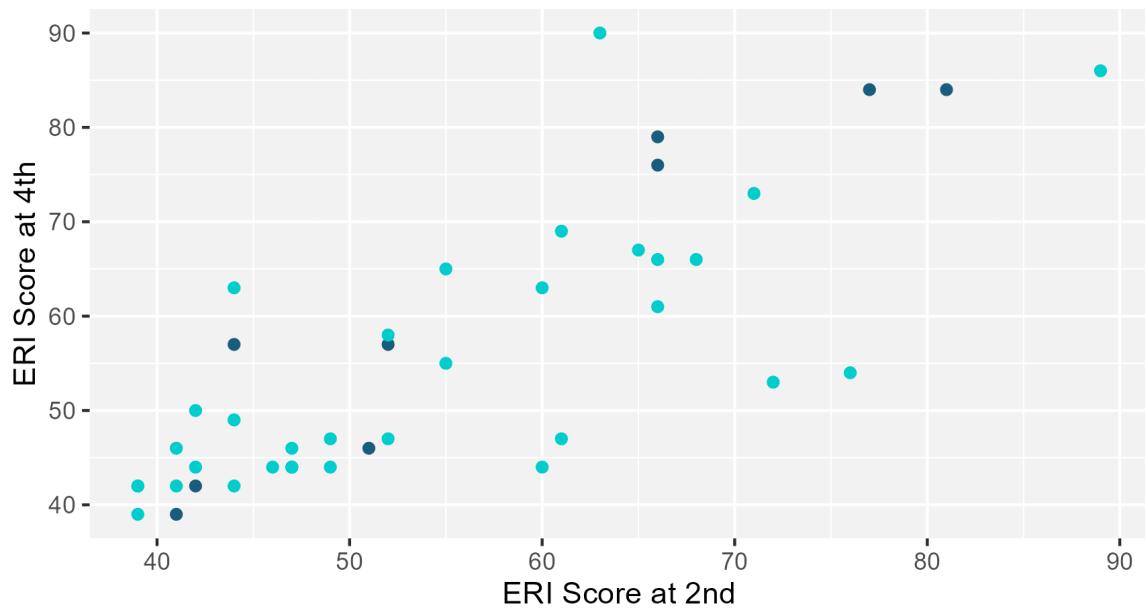
At the second-grade timepoint, children with RD (n = 81) were rated by their parents as having significantly poorer emotion regulation than children with typical reading ability (n = 164) in our larger study sample. This was reflected in higher mean ERI scores (RD = 55.2; TD = 51.3) and a greater proportion of children with elevated emotion regulation difficulties (RD = .37; TD = .22).

- Note: the current subsample of children with RD was not selected based on 2nd grade emotion regulation scores, but represents those with available data at both timepoints.

BRIEF-2 Emotion Regulation Index Scores in Children with Persistent vs. Transient RD



Relationship Between Emotion Regulation Index Scores at 2nd and 4th Grade



RESULTS

A Wilcoxon rank-sum test showed that children with persistent word reading difficulties did not have significantly higher or lower scores than children with "transient" word reading difficulties ($W=138, p = .524$).

Descriptive Information on BRIEF-2 Emotion Regulation Index Scores

	Persistent	"Transient"
2nd Grade: Mean	54.53	56.70
2nd Grade: Median	52.00	51.50
4th Grade: Mean	53.62	60.80
4th Grade: Median	49.50	57.00

There was no significant difference in proportions of children with persistent RD and children with "transient" RD who had elevated ERI scores:

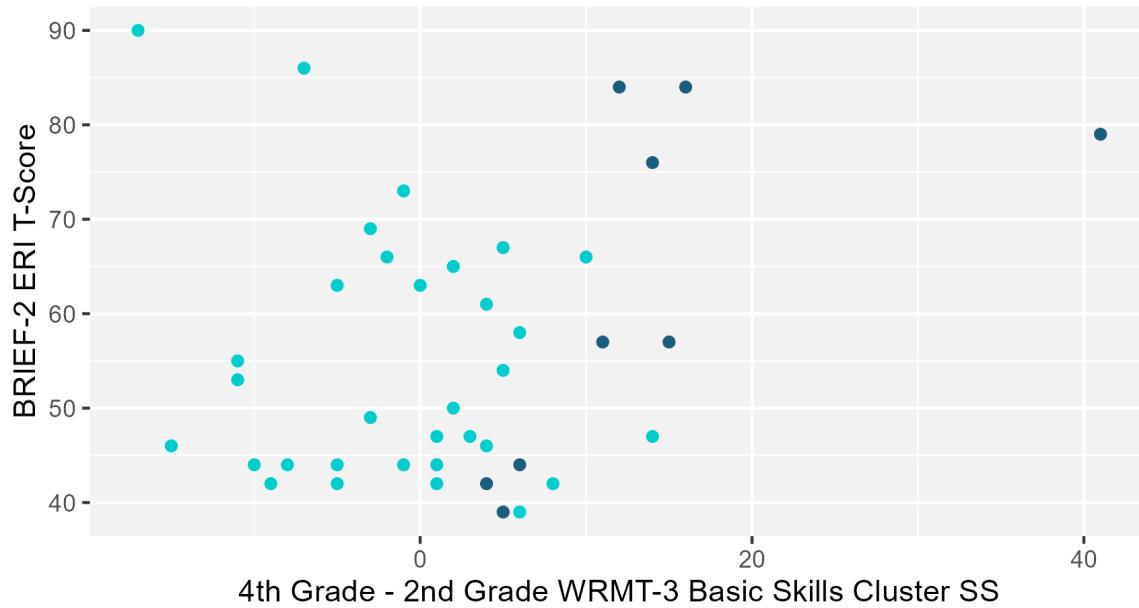
$$\chi^2(1)=0.11, p = .746.$$

Proportions of Children with Elevated Emotion Regulation Problems

	Persistent	"Transient"
Elevated ER Problems	0.34	0.40
Not Elevated	0.66	0.60

Follow-Up Analyses

Relationship Between Change in Word Reading Skill to 4th Grade Emotion Regulation



The correlation between change in word reading ability standard scores and 4th grade ERI scores was not significant ($r = 0.22, p = .162$).

CONCLUSIONS

We did not find a relation between persistence in children's RDs and their emotion regulation.

It could be that severity of emotion regulation symptoms may encourage parents to obtain additional reading support, which could increase reading skill though emotion regulation problems persist.

Though there was no difference in persistent vs. transient RDs in emotion regulation, we still noted that the mean Emotion Regulation Index scores for both of these groups were higher than we observed in TD children at 4th grade (n = 58, M=49.3).

It's possible that emotion regulation difficulties are seen more commonly in children with RD who also have comorbid conditions, such as ADHD. Notably, other work has found inattention is associated with anxiety in children with RD.

Future directions will be to consider intervention received between timepoints. We will also continue to follow up with students from our 2nd grade sample.

We will also examine measures of word reading fluency and reading comprehension. Though children in this study had transient word reading problems as measured by word reading accuracy, they may still struggle with fluency and/or comprehension. It is possible that word reading fluency and/or reading comprehension relate to emotion regulation.

Future studies should consider using other emotion regulation measures (e.g., self-report, behavioral observation, physiological change) to expand upon this work.
