The Longitudinal Association Between Emotional Lability and Sleep Problems in Young Children With and Without ADHD

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INTRO

- Children with ADHD often demonstrate significant impairment in emotion regulation, particularly the ability to modulate the intensity of emotional responses (emotion reactivity/lability; Graziano & Garcia, 2016).
- As compared to typically developing peers, children with ADHD show significantly greater impairment across sleep domains including bedtime resistance, sleep onset, and night wakings (Cortese et al., 2009).
- While poor sleep is known to impair emotion regulation, less is understood about how emotion dysregulation may, in turn, predict sleep functioning (Gregory & Sadeh, 2012).
- Most literature examining sleep problems in children is cross-sectional, leaving a gap in our understanding of predictors of sleep problems over time (Becker et al. 2020).
- The current study examine how emotion reactivity/lability in early childhood predicts various domains of sleep functioning among children with and without ADHD.

METHODS

Participants

73 children (60% males; Mean age =5.48 yrs. *SD* = 0.78 yrs, 82% Latinx) with ADHD (*n* = 41) and TD (*n* = 32).

Measures

<u>Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997; Silverman et al., 2022)</u>

- The study included maximum scores from parent and teacher ratings at a baseline assessment.
- Negative Emotion Lability and Positive Emotion lability composites.

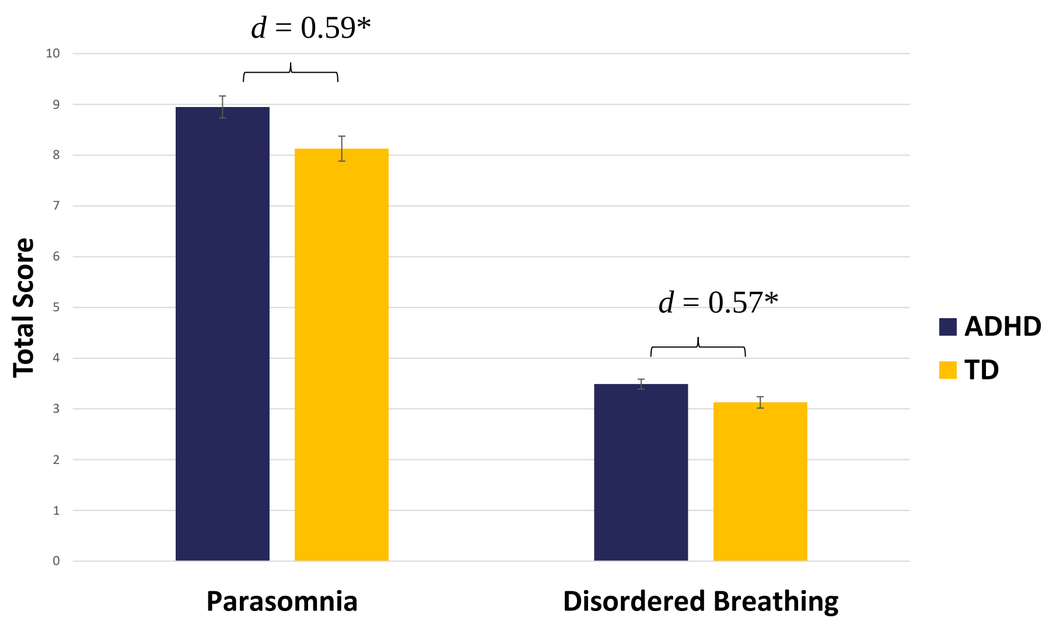
<u>Children's Sleep Habits Questionnaire (CHSQ; Owens et al., 2000)</u>

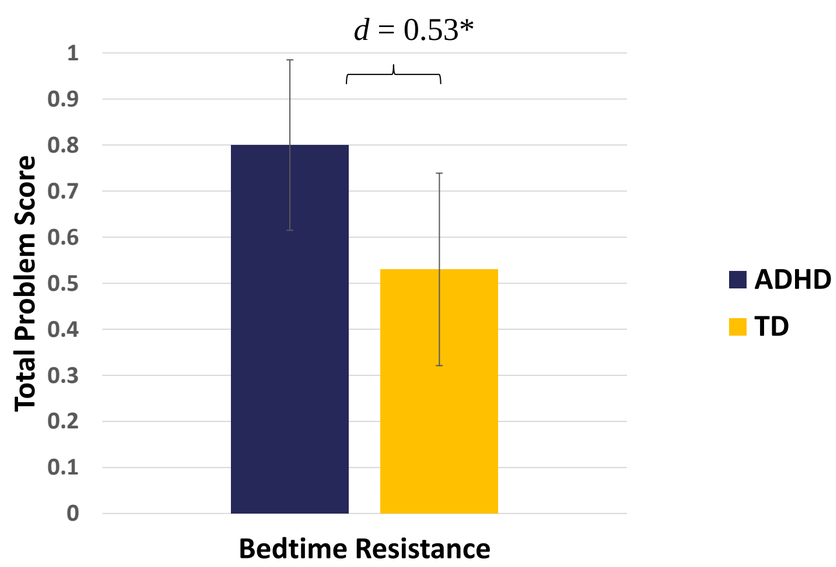
- The study utilized all parent-rated subdomains scores (i.e. bed-time resistance, sleep onset delay, sleep duration, sleep anxiety, night wakings, parasomnia, disordered breathing, daytime sleepiness) and the Total Problem score as rated at a two-year follow-up.

RESULTS

Among children with and without ADHD, **early emotion reactivity and lability,** as measured by positive and negative emotions, is associated with **sleep functioning two years later.**

Figure 1. Differences in CHSQ Scores across Diagnostic Groups





Note. * $p < .05$. *d* = Cohen's *d* effect size indicates differences between the groups. ADHD = Attention-deficit/hyperactivity disorder. TD = typically developing.

Table 1. Emotion Reactivity/Lability Predicting CHSQ Problem Scores

	β	*p*
Bedtime Resistance		
Emotion Lability (Negative Emotions)	0.05	.263
Emotion Lability (Positive Emotions)	**-0.17**	**.013***
Diagnostic Group	**1.29**	**.004****
Sleep Duration		
Emotion Lability (Negative Emotions)	**0.06**	**.032***
Emotion Lability (Positive Emotions)	**-0.08**	**.025***
Diagnostic Group	0.14	.552
Total Sleep Problems		
Emotion Lability (Negative Emotions)	**0.38**	**.046***
Emotion Lability (Positive Emotions)	-0.39	.137
Diagnostic Group	1.98	.240

Note. ** $p < .01$, * $p < .05$. *All models controlled for child age at 2-year follow-up and child sex.*

DISCUSSION

- Consistent with the adolescent literature, early difficulties with emotion reactivity/lability as it relates to **negative emotions** predicts children's later sleep dysfunction, regardless of diagnostic status.
- Unexpectedly, emotion reactivity/lability as it relates to **positive emotions** in early childhood may be a protective factor for sleep functioning, such that positive exuberance may support adaptive parent-child interactions at bedtime.
- These findings contribute to our understanding of the developmental pathway to disturbed sleep in children both with and without ADHD.
- Interventions aimed at improving sleep functioning may benefit from addressing emotion dysregulation, specifically emotion reactivity/lability.
- Future work should explore additional mechanisms (e.g. parenting) that may influence the trajectory of emotion reactivity/lability and ultimately sleep in children with ADHD.

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