

Externalizing Symptom Severity is Associated with Emotion Regulation in Youth

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Abstract

Our research aims to understand emotional dysregulation in youth, and potential intergenerational influence of parent regulation. We do this by focusing on two key factors of emotional functioning: regulation success and reactivity. We examine the relationship between emotion regulation and externalizing symptom severity (e.g., maladaptive aggression, noncompliance, irritability/anger) in children. We also examine how the parents' emotion regulation may moderate child's emotion regulation ability. This was done by collecting data from questionnaires that measure externalizing symptoms, cognition, emotion regulation of parent and child, and measure emotion regulation and reactivity during a functional magnetic resonance (fMRI) -based reappraisal task. There were a total of 44 participants, ages ranging from 9-12 years old, and their parents.

We found that externalizing symptom severity is associated with emotion regulation in children. Findings from this study suggest developing targeted interventions addressing emotion regulation impairments as a transdiagnostic feature in youth.

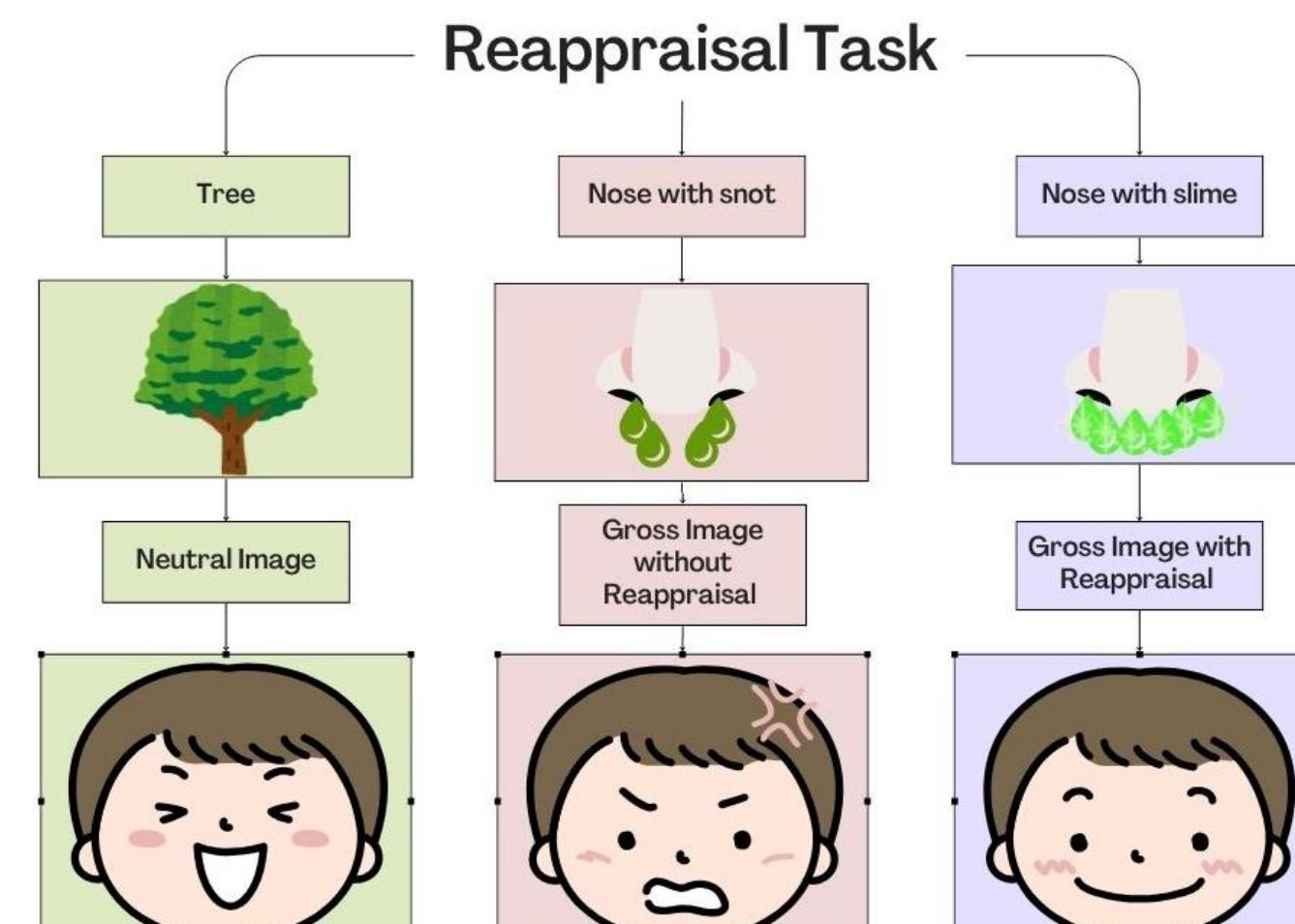
Introduction

- Emotion regulation is a critical developmental skill linked to children's mental health. Emotion regulation helps manage reactivity by using strategies like reappraisal.
- Difficulties managing emotional reactivity have been associated with externalizing symptoms (e.g., maladaptive aggression, noncompliance, irritability/anger) in children.
- Neuroimaging studies suggest that these difficulties may be linked to dysfunction in brain networks involved in emotion regulation.(Pitskel,2011)

Definition:

- Reactivity* : How intense and immediate one responds to something emotional, like easily getting upset or excited.
- Regulation* : How one manages emotions, thoughts, and behavior in order not to react in ways one may regret.
- Reappraisal* : A form of regulation, where one tries to feel better by looking at a difficult situation in a different, more positive or neutral way.

Figure 1.



Objectives

- Examine how emotion regulation and reactivity during a fMRI-based reappraisal task and series of questionnaires are linked to externalizing symptom severity in children.
 - Determine if greater emotion regulation success predicts lower levels of symptoms
 - Determine if reactivity is linked to symptom severity
- Examine how parental emotion regulation may serve as a moderator
 - Determine if combined difficulties in parent and child emotion regulation are associated with higher levels of symptoms severity.

Methods

Figure 2.



Reappraisal task:

- Figure 2. is the chronological sequence of screenshot during the gross reappraisal task. The child repeats sequence for three strategies:
 - Look neutral
 - Look gross (look negative)
 - Decrease gross (down regulation)
- Instructions
 - Explain 1–5 rating scale (1 = not gross, 5 = very gross)
- Strategies
 - Introduce "reappraisal" condition: ask participants to pretend gross images is fake (e.g., plastic).
 - Help participants imagine the image as less gross and re-rate.

Participants:

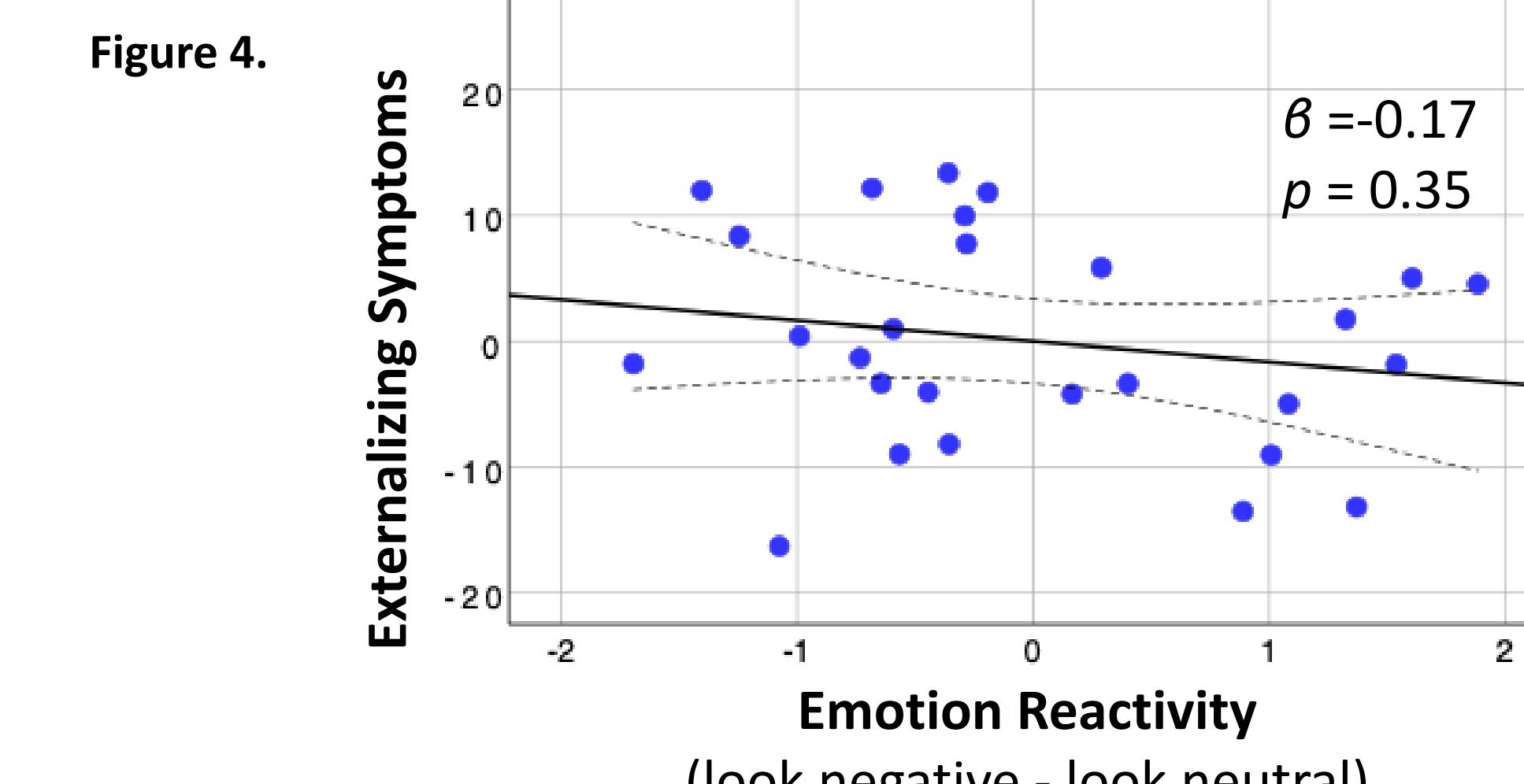
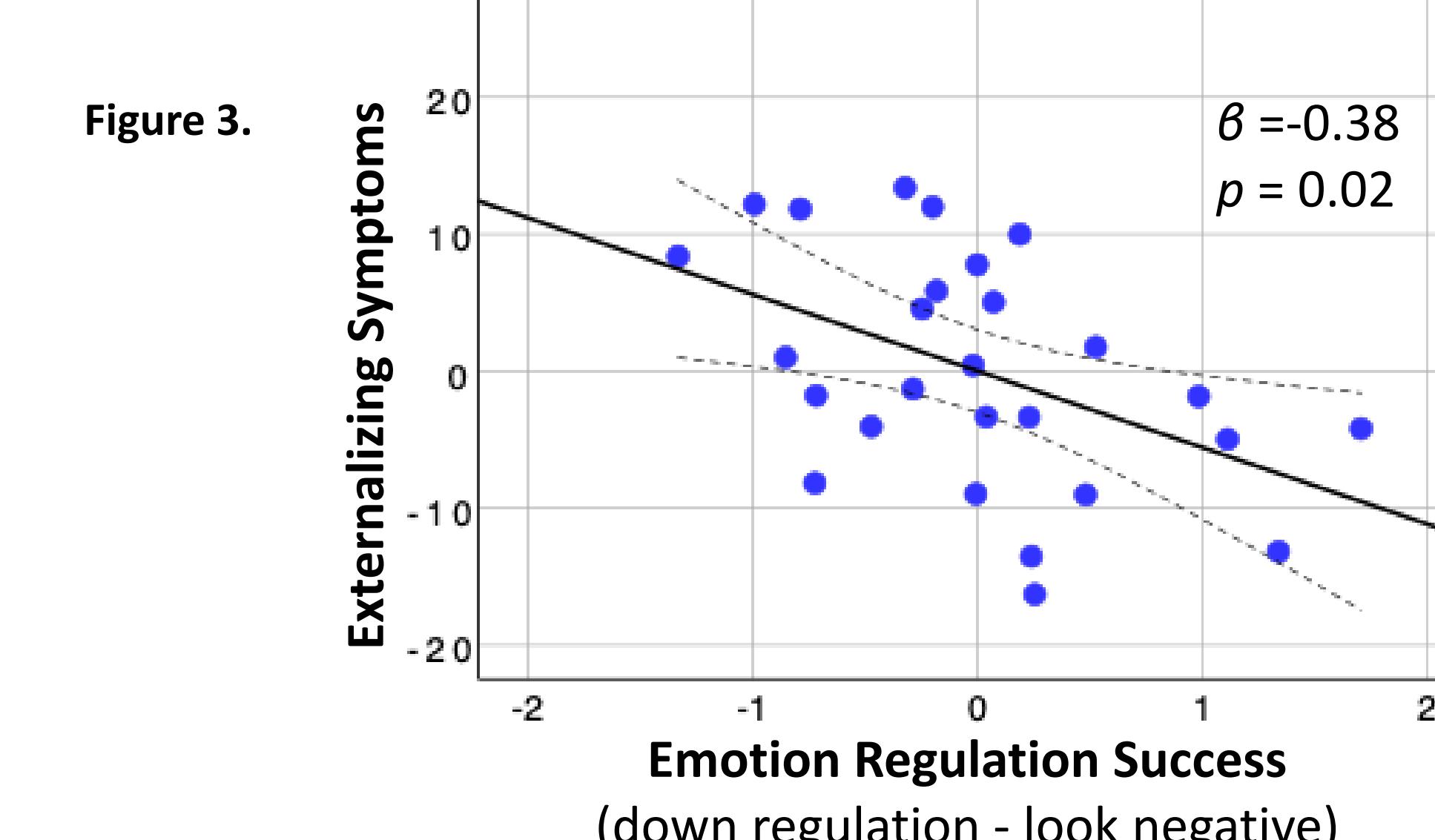
- n=44 children between the ages of 9-12 years (M age= 9.89, SD=2.27)
- n=27 children with cognitive reappraisal task (M age= 9.89, SD=2.27)

Measures:

- Externalizing Symptoms* - Child Behavioral Checklist (CBCL) was used to assess externalizing symptom severity using the Externalizing Behavior Problems subscale.
- Cognition* - NIH Toolbox Cognition Battery
- Emotion regulation of the child* - Difficulties in Emotion Regulation Scale (DERS, parent rated), Emotion Regulation Checklist (ERC)
- Emotion regulation of parent* - Parent emotion regulation questionnaire (reappraisal and suppression)

Results

- Greater emotion regulation success was associated with reduced externalizing severity.
- Emotional reactivity did not show a significant relationship with externalizing symptoms
- Parental emotion regulation did not significantly moderate the relationship between child emotion regulation and symptom severity.



Note: Linear regression models were conducted in R and SPSS. All models accounted for covariates age, cognition, and internalizing symptoms (anxiety/depressive symptoms). Externalizing symptom severity was the outcome.

Implications & Conclusions

- Our findings suggest that reappraisal is associated with externalizing symptom severity but not emotion reactivity.
- Enhancing children's ability to regulate their emotions may be a more effective therapeutic target than focusing solely on intensity of reactivity towards emotional stimuli.
- Results support emotion regulation-based therapies across transdiagnostic population.

Limitations & Future Research

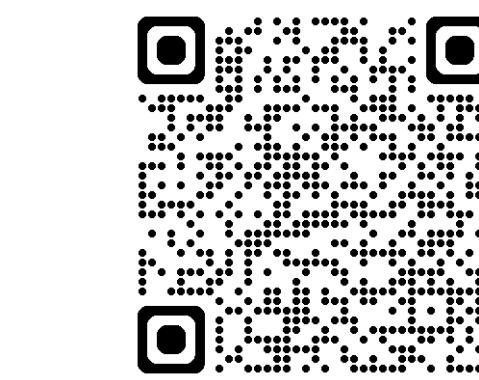
Although parental emotional regulation did not significantly moderate the relationship in our sample due to limited size; future research should examine how parental modeling and co-regulation strategies influence child outcomes by using larger sample size.

Acknowledgements

References



Ibrahim Lab



Funding

This work is supported by a NIMH Career Development Award (K23 MH128451; K.I.) and a Yale Child Study Center Faculty Development Award (K.I.).