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# PREDISPOSING AND PRECIPITATING FACTORS FOR EXPLOSIVE OUTBURSTS AMONG YOUTH WITH TOURETTE SYNDROME

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# INTRODUCTION

- Explosive outbursts are excessive and uncontrollable anger episodes occurring suddenly and repeatedly.
- Physical or verbal aggression towards others or objects.
- Almost total loss of control during episode.
- Out of proportion to the trigger.
- Developmentally inappropriate.
- Low frustration tolerance.
- Not goal directed/purposeful.

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# INTRODUCTION

- Few known predisposing factors:
  - Co-occurring ADHD and OCD.
  - Weak association with tic severity.
  - Not having one's own way, experiencing change in plans or routines: behavioral inflexibility?
  - Impulsivity associated with explosive outbursts among adults.
    - No data in children.
- Main aim of the current study:
  - Assess whether behavioral inflexibility and impulsivity are associated with explosive outbursts in children with TS.

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# METHODS

- Participants (parents) recruited through ads on social media.
    - Country of origin: Canada (n = 62), France (n = 50), UK (n = 16), USA (n = 10), others (n = 6)
    - Survey language: French (n = 104), English (n = 40)
  - Sample characteristics (children):
    - n = 144, 43 girls (29.9%)
    - Mean age:  $10.5 \pm 2.4$  years old (range 6 – 14)
    - Mostly (88.2%) white
    - Most had a least 1 co-occurring diagnosis (ADHD: n = 98, OCD: n = 36, developmental coordination disorder: n = 21, specific learning disorder: n = 37, sleep problems: n = 40, anxiety/depression: n = 94).
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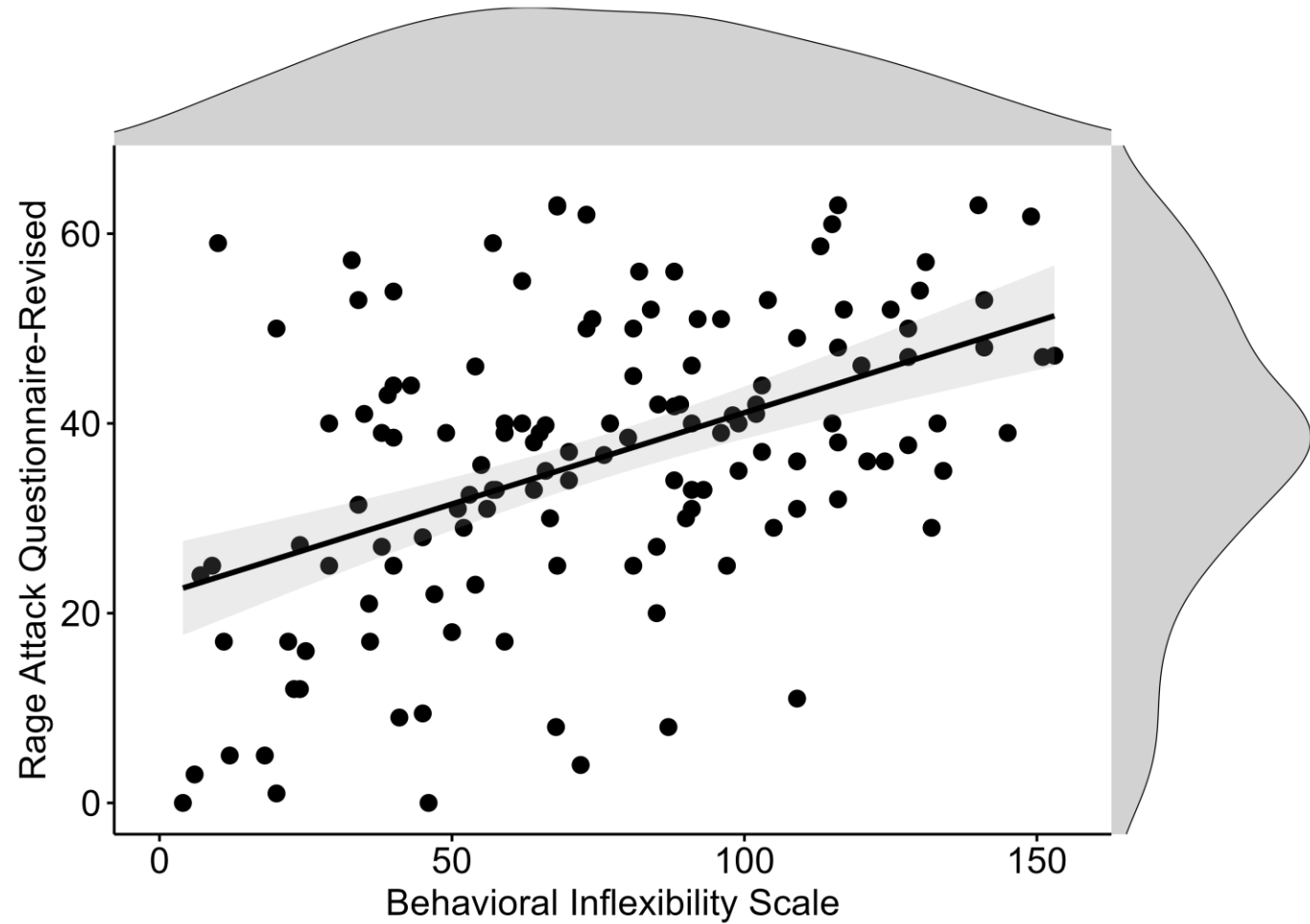
# METHODS

- Procedures:
  - Qualtrics survey sociodemographic/clinical info
  - Rage Attack Questionnaire-Revised (RAQ-R) modified for parent-report
  - Behavioral Inflexibility Scale (BIS)
  - UPPS-P Impulsivity Inventory
  - Parent Tic Questionnaire (PTQ)

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# RESULTS

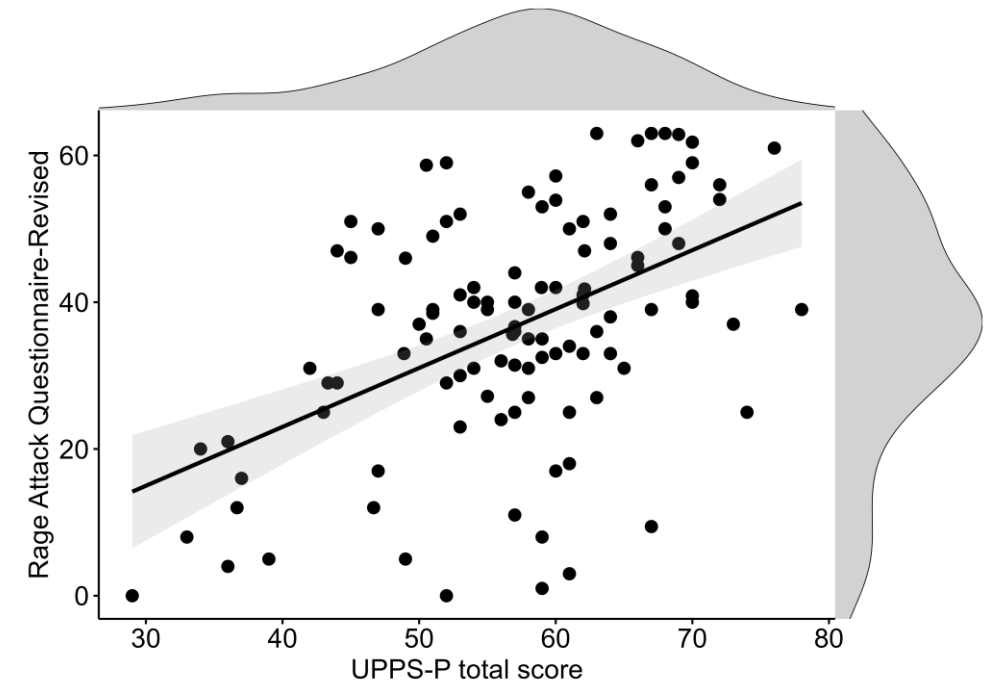
- Behavioral inflexibility is significantly associated with explosive outbursts [ $r(138) = .49, p < .001$ ].



# RESULTS

- Impulsivity is significantly associated with explosive outbursts [ $r(115) = .50, p < .001$ ].
  - Significant associations with 4 subscales:
    - Negative urgency:  $r(115) = .65, p < .001$
    - Positive urgency:  $r(115) = .37, p < .001$
    - Lack of premeditation:  $r(115) = .35, p < .001$
    - Sensation seeking:  $r(115) = .19, p = .041$
- Among the 5 UPPS-P dimensions, negative urgency predicts explosive outbursts over and above the other dimensions.

Predictor	B	SE B	$\beta$	t	p
Intercept	-4.920	6.979	—	-0.705	.482
<b>Negative Urgency</b>	<b>3.614</b>	<b>0.500</b>	<b>.696</b>	<b>7.232</b>	<b>&lt; .001</b>
Positive Urgency	-0.954	0.612	-.153	-1.558	.122
Lack of Premeditation	0.662	0.541	.123	1.222	.224
Lack of Perseverance	0.143	0.470	.026	0.305	.761
Sensation Seeking	-0.098	0.365	-.020	-0.267	.790



- Negative urgency items:
  - When my child is upset, he/she often acts without thinking.
  - In the heat of an argument, my child will often say things that he/she later regrets.
  - My child often makes matters worse because he/she acts without thinking when he/she is upset.
  - When my child feels rejected, he/she will often say things that he/she later regrets.

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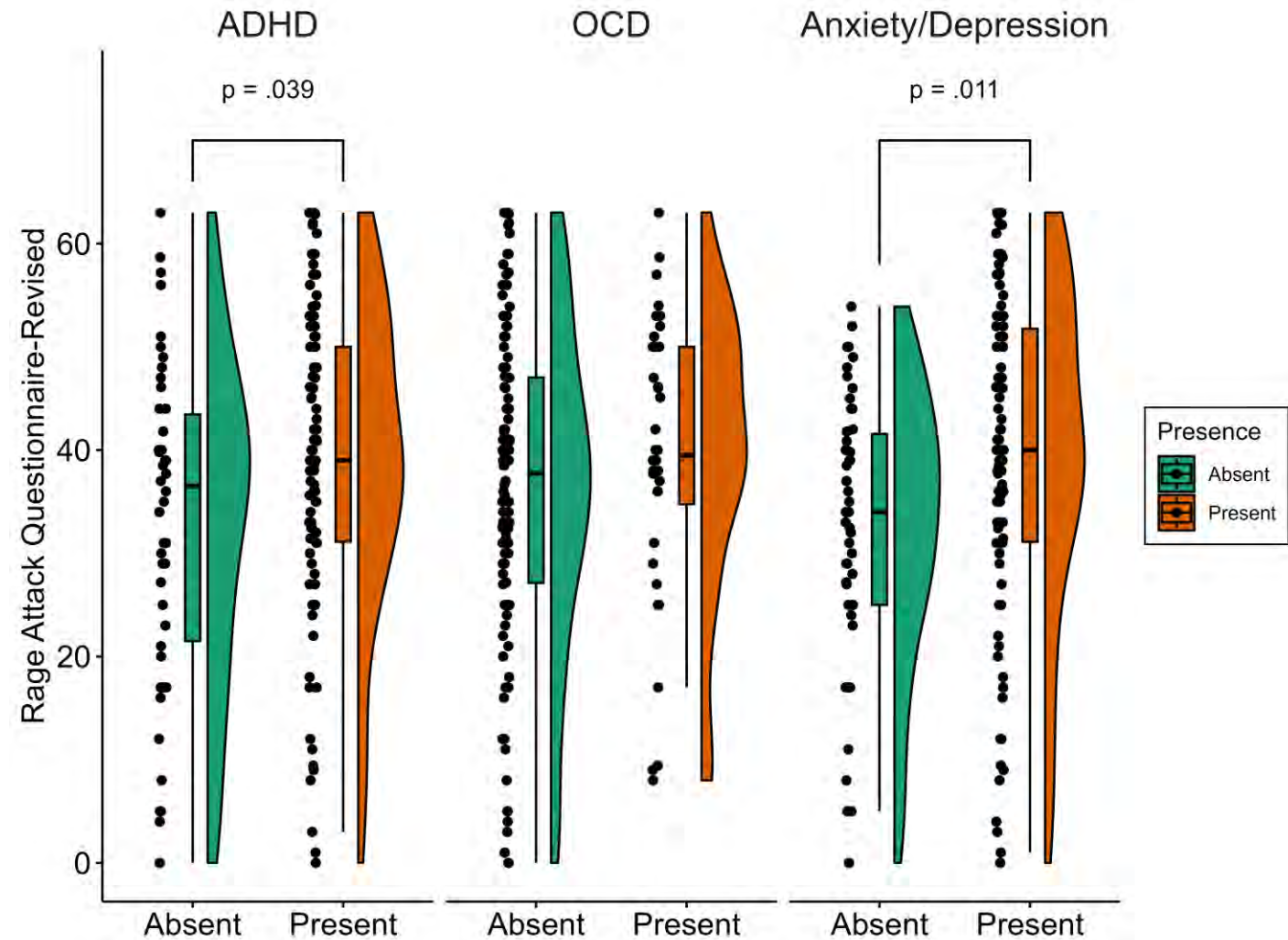
# RESULTS

- Demographics
  - No significant association between age and explosive outbursts [ $r(142) = .02$ ,  $p = .80$ ].
  - No significant sex difference on explosive outbursts [ $t(142) = .25$ ,  $p = .80$ ,  $d = .05$ ].



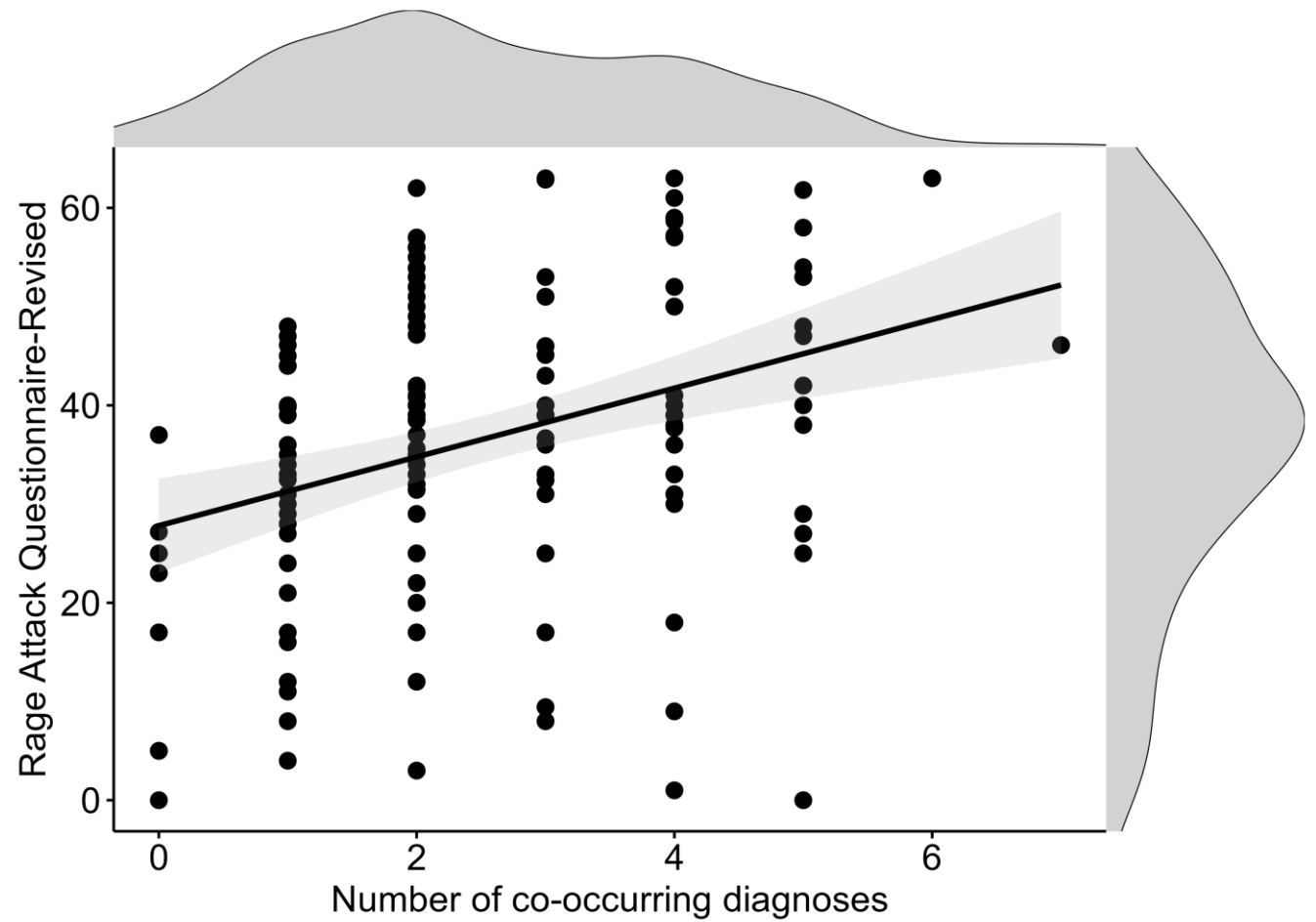
# RESULTS

- More severe explosive outbursts if co-occurring ADHD or affective problems (anxiety/depression) are present, but not OCD.
- No significant association with tic severity [ $r(142) = .11$ ,  $p = .21$ ]



# RESULTS

- Significant association between RAQ-R and number of co-occurring diagnoses [ $r(142) = .34$ ,  $p < .001$ ].



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# DISCUSSION

- Behavioral inflexibility is a significant predictor of explosive outbursts.
  - Transdiagnostic trait shared with autism and OCD.
- Impulsivity is also associated with explosive outbursts.
  - Negative urgency is the main aspect of impulsivity driving explosive outbursts, over and above the other dimensions of impulsivity.
- Co-occurring diagnoses, but not tic severity, plays a role in explosive outbursts.
- No association with age and no sex difference.
  - Possible changes later in adolescence/early adulthood?

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Association Française  
du Syndrome de Gilles  
de La Tourette

