Patient and Caregiver Reports of Anxiety, Depression, and Executive Dysfunction in Children with Heterogeneous Neurodevelopmental Disorders
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OBJECTIVES
- Prior studies have reported discrepancies regarding anxiety/depression between adolescent self-report and caregiver-report about their adolescent.
- We compared adolescent-caregiver dyads characterized either by low adolescent-high caregiver (LA-HC) report of anxiety/depression or high adolescent-low caregiver (HA-LC) report of anxiety/depression symptoms.
- While anxiety/depression can lead to executive dysfunction, we considered the possibility that greater executive dysfunction, particularly in metacognitive processes such as lack of insight into emotional functioning, would lead to adolescents underreporting anxiety/depression symptoms relative to their caregivers.
- We explored executive dysfunction as a possible explanation for the discrepancy in the LA-HC group, utilizing a sample of pediatric patients with neurological and neurodevelopmental disorders in which executive dysfunction is common.

HYPOTHESIS
- We hypothesized that caregivers in the LA-HC group would report significantly greater executive dysfunction on several measures than caregivers in the HA-LC group.

PARTICIPANTS & METHODS
- We examined discrepancies on the Anxiety/Depression (AD) scale from the Youth Self Report (YSR) relative to caregiver scores on the corresponding AD scale of the Child Behavior Checklist (CBCL).
- Higher T-scores = greater concern or impairment
- Between 2012-2018, 395 adolescent-caregiver dyads completed the YSR and the CBCL, as well as additional questionnaires (identified in the table below) in our neuropsychology service.
- Dyads were assigned to 1 of 3 groups using the following: YSR AD T-score – CBCL AD T-score = Discrepancy score

RESULTS

<table>
<thead>
<tr>
<th>Group</th>
<th>Age</th>
<th>IQ</th>
<th>BRIEF GEC*</th>
<th>Hyperactivity</th>
<th>Executive Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA-HC</td>
<td>14.93 ± 1.91</td>
<td>90.87 ± 13.09</td>
<td>93.58 ± 11.08</td>
<td>69.21 ± 14.34</td>
<td>62.47 ± 14.93</td>
</tr>
<tr>
<td>HA-LC</td>
<td>15.77 ± 1.85</td>
<td>93.58 ± 11.08</td>
<td>93.58 ± 11.08</td>
<td>62.47 ± 14.93</td>
<td>62.47 ± 14.93</td>
</tr>
</tbody>
</table>

Variables compared between groups

<table>
<thead>
<tr>
<th>Measure</th>
<th>LA-HC</th>
<th>HA-LC</th>
</tr>
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<tbody>
<tr>
<td>Age</td>
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Bayesian analyses:
- Bayes factors take what we already know (priors) and tell us what the observed data add to that knowledge.
- Bayes factors quantify the degree to which the actual data do or do not support each the null hypothesis and the alternative hypothesis.
- Bayes factors are represented in two ways:
  - BF = The degree to which the data favor the null hypothesis
  - BF = The degree to which the data favor the alternative hypothesis
- Higher Bayes factor values, especially >3, indicate stronger evidence for the corresponding hypothesis. Bayes factor values <1 indicate greater evidence for the other hypothesis.

Evidential properties of p-values vs. Bayes factors

**Conclusions**
- Our hypothesis was strongly supported by Bayesian findings, but causality remains unknown.
- Some may assume that because those in the LA-HC group were younger, greater executive dysfunction could be due to age.
- This is unlikely because age-adjusted T-scores were used.
- We proposed that greater executive dysfunction in the LA-HC group may have reflected greater neurodevelopmental impact on executive neural substrates that inform awareness and insight.
- Another possible explanation for the discrepancy is that caregivers in the LA-HC group generally over-reported across the CBCL and other measures.
- Prior research on YSR-CBCL discrepancies suggests examining raw scores instead of T-scores due to possible data distortion.
- Future research should include comparisons of raw scores in exploring supportive or alternative explanations, as well as caregiver response styles.