Attentional processing of neutral and emotional stimuli in children with attention deficit hyperactivity disorder (ADHD) and anxiety disorder (AD): Evidences from the EPANE task

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1. Introduction

High frequency of attention complaints in neuropsychology
(Weissman et al., 2012; Rossignol, & Filbrich, 2015)

Structural or functional deficits?
Disorder dependent deficits?
Stimuli dependent deficits?

Specific assessment of attentional impairments
Development of appropriate clinical interventions

2. Population

60 children from 6 to 12 years-old

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Age (years)</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>15</td>
<td>118,3</td>
<td>13♂</td>
</tr>
<tr>
<td>AD</td>
<td>15</td>
<td>96,7</td>
<td>10♂</td>
</tr>
<tr>
<td>Healthy controls</td>
<td>30</td>
<td>107,1</td>
<td>21♂</td>
</tr>
</tbody>
</table>

3. Method

EPANE: Evaluation of attentional processes for Neutral (Fishes) and Emotional (Faces) stimuli
(Rossignol et al., 2014)

4. Results

▲ Flanker Task
▲ No significant difference

▲ Simon Task
▲ Group effect on TR: ADHD < AD < HC
▲ Type of stimuli effect on TR and CR
△ Angry faces < Neutral faces
△ TR congruent trials (p=0.046)
△ TR incongruent trials (p=0.017)
△ Happy faces < Neutral faces
△ RT congruent trials (p=0.008)
△ CR congruent trials (p=0.034)
△ RC incongruent trials (p=0.010)

▲ Dot-probe Task
▲ Group effect on TR: AD < ADHD < HC
▲ Type of stimuli effect on TR
△ Angry faces < Neutral faces
△ TR congruent trials (p=0.006)
△ RT incongruent trials (p=0.010)
△ Happy faces < Neutral faces
△ RT incongruent trials (p=0.007)

5. Discussion

▲ Distinct attentional deficits in both disorders
▲ In ADHD: Conflict resolution impairments
▲ Shorter reaction times for emotional stimuli to the detriment of performances
▲ In AD: Enhanced attentional engagement towards emotional stimuli

Clinical utility of the EPANE in neuropsychology for the differential diagnosis between AD and ADHD!