Temporal Discounting and Emotional Self-Regulation in Children with Attention-Deficit/Hyperactivity Disorder

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Abstract

Temporal Discounting (TD) reflects a tendency to discount a reward more deeply the longer its delivery is delayed. TD tasks and behavioral scales have been used to investigate ‘hot’ executive functions in ADHD. The present study analyzed TD task performance shown by ADHD and control groups for correlations with emotional self-regulation metrics from two scales, the Behavior Rating Inventory of Executive Functions (BRIEF) and the Child Behavior Checklist (CBCL). Children (ages 8–12) with ADHD (n=25) and controls (n=24) were assessed using material rewards (toys) for three types of task: Hypothetical (H); Hypothetical with temporal expectation (HTE); and Real (R). Between-group differences were found for the HTE task, on which the ADHD group showed a higher rate of discounting their favorite toy over time, especially at 10 s and 20 s. This was the only task on which performance significantly correlated with BRIEF metrics, thus suggesting associations between impulsivity and low emotional self-regulation, but no task was correlated with CBCL score. The conclusion is that tasks involving toys and HTE in particular may be used to investigate TD in children with ADHD and as a means of evaluating the interface between the reward system and emotional self-regulation.