

## Study links early emotional regulation difficulties to ADHD and conduct problems



Children who struggle to manage their emotions and behavior during preschool years are at greater risk of developing symptoms of attention deficit hyperactivity disorder (ADHD) and other mental health concerns by age seven, according to a new study published in *Development and Psychopathology*.

Researchers found that these early difficulties also correlate with higher rates of conduct problems and internalizing behaviors, such as sadness and anxiety, later in childhood. The findings highlight the importance of early emotional development and could guide targeted support for children at risk.

Emotion regulation refers to a person's ability to manage and control their emotional responses to situations in ways that align with social norms and personal goals. This skill develops significantly during early childhood, as children learn to balance intense feelings such as frustration, excitement, or sadness. Effective emotion regulation allows children to respond appropriately to challenges, engage in positive social interactions, and recover from setbacks.

Conversely, poor emotion regulation—referred to as emotional dysregulation—can lead to excessive emotional reactions, difficulties calming down, or impulsive behaviors that disrupt daily life. Children with persistent emotional dysregulation may struggle in social settings, academic environments, and at home, making this an important area of focus for understanding developmental and mental health challenges.

The researchers sought to understand how early patterns of emotional dysregulation are related to mental health outcomes, particularly ADHD, internalizing problems, and conduct problems. These conditions are often diagnosed later in childhood, making it challenging to intervene early.

“My interest in this topic stems from a desire to understand how differences during childhood may lead to varying outcomes with lifelong repercussions. I believe there is a preconception that, as people, we are all fairly similar. Because of this, we often overlook the implications that these subtle differences can have in the long term,” said study author [Francisco Antonio Calderón Alfaro](#), a PhD student at the University of Oxford.

### What is ADHD?

ADHD is a neurodevelopmental disorder characterized by persistent patterns of inattention, hyperactivity, and impulsivity that interfere with daily functioning. Children with ADHD may have difficulty focusing on tasks, staying organized, or controlling impulses. These symptoms can affect academic performance, social relationships, and self-esteem. ADHD is often diagnosed during school years, but early signs can emerge in preschool-aged children.

Internalizing problems are characterized by inwardly directed behaviors and emotions, such as excessive sadness, anxiety, or withdrawal. These issues can manifest as constant worrying, low self-esteem, or physical complaints like headaches without a clear medical cause. On the other hand, conduct problems involve outwardly directed behaviors, including aggression, defiance, lying, and rule-breaking.

These behaviors may disrupt relationships with peers and adults and lead to conflicts in structured environments like school. Both internalizing and conduct problems can co-occur with ADHD and other mental health concerns, further complicating diagnosis and treatment. The researchers utilized data from the Millennium Cohort Study, a large-scale, longitudinal dataset tracking the development of children in the United Kingdom.

### **Sample included 14,000 children**

Their sample included over 14,000 children, with emotional regulation assessed at ages three, five, and seven. Parents completed questionnaires, such as the Strengths and Difficulties Questionnaire, to measure children's emotional dysregulation, conduct issues, and symptoms associated with ADHD.

Emotion regulation was assessed through parental observations of behaviors such as mood swings, impulsivity, and the ability to recover from upset feelings. Parents rated the frequency of these behaviors on standardized scales. The researchers then tracked how these emotional patterns evolved over time, focusing on whether children showed steady improvement, delayed development, or persistent difficulties. By age seven, researchers evaluated whether these early emotional trends correlated with ADHD symptoms, conduct problems, or internalizing behaviors such as anxiety and sadness.

The researchers found that children who struggled more with emotional regulation during preschool years tended to exhibit more symptoms of ADHD by age seven. These children were also more likely to display conduct issues and internalizing behaviors.

These associations held true even after accounting for earlier mental health symptoms, suggesting that the development of emotional regulation is an independent predictor of these outcomes.

Interestingly, the pace at which children improved their emotional regulation skills also mattered.

### **Children with slower progress**

Children who showed slower progress in developing emotional regulation were at greater risk of adverse mental health outcomes. While most children displayed a general improvement in emotion regulation between ages three and seven, those with consistently high levels of emotional dysregulation faced the highest risks.

“Children learn to manage their emotions in different ways,” Calderón Alfaro told PsyPost. “Identifying these differences can help target early interventions and promote the healthy development of children.”

Gender differences were also observed. Although boys and girls both experienced similar risks, boys generally exhibited higher levels of emotional dysregulation and were more likely to show conduct problems, while girls were more prone to internalizing symptoms.

The findings highlight the importance of supporting emotional development during the preschool years. But as with all research, there are some caveats. “To put it simply, we only have three timepoints in our data,” Calderón Alfaro noted. “This is not equivalent to tracking a heartbeat in real time. As a result, the nuances of how these changes evolve over time remain unclear.”

Another limitation is the observational nature of the study, which precludes definitive conclusions about causation. While emotional dysregulation appears to be a marker for later mental health risks, it remains unclear whether it directly causes these outcomes or is simply associated with other underlying factors. Experimental studies or intervention trials could shed light on whether improving emotional regulation skills can reduce the likelihood of mental health issues.

“I believe that more research focused on understanding differences in development can lead to better-tailored interventions,” Calderón Alfaro said. “This would help support those who may benefit less from existing programs or practices.”

The study, “**Early emotion regulation developmental trajectories and ADHD, internalizing, and conduct problems symptoms in childhood**,” was authored by Aja Louise Murray, Amanda Russell, and Francisco Antonio Calderón Alfaro.

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