Meta-analysis of social cognition in attention-deficit/hyperactivity disorder (ADHD): comparison with healthy controls and autistic spectrum disorder.


Abstract
BACKGROUND:
Impairment in social cognition is an established finding in autism spectrum disorders (ASD). Emerging evidence suggests that attention-deficit/hyperactivity disorder (ADHD) might be also associated with deficits in theory of mind (ToM) and emotion recognition. However, there are inconsistent findings, and it has been debatable whether such deficits persist beyond childhood and how similar social cognitive deficits are in ADHD v. ASD.

METHOD:
We conducted a meta-analysis of social cognition, including emotion recognition and ToM, studies in ADHD compared with healthy controls and ASD. The current meta-analysis involved 44 studies comparing ADHD (n = 1999) with healthy controls (n = 1725) and 17 studies comparing ADHD (n = 772) with ASD (n = 710).

RESULTS:
Facial and vocal emotion recognition (d = 0.40-0.44) and ToM (d = 0.43) abilities were significantly impaired in ADHD. The most robust facial emotion recognition deficits were evident in anger and fear. Social cognitive deficits were either very subtle (emotion recognition) or non-significant (ToM) in adults with ADHD. Deficits in social cognition, especially ToM, were significantly more pronounced in ASD compared with ADHD. General cognitive impairment has contributed to social cognitive deficits in ADHD.

CONCLUSIONS:
Performance of individuals with ADHD on social cognition lies intermediate between ASD and healthy controls. However, developmental trajectories of social cognition probably differ between ADHD and ASD as social cognitive deficits in ADHD might be improving with age in most individuals. There is a need for studies investigating a potential subtype of ADHD with persistent social cognitive deficits and exploring longitudinal changes in social cognition during development.