Attention-deficit/hyperactivity disorder and clinically diagnosed obesity in adolescence and young adulthood: a register-based study in Sweden

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Abstract

BACKGROUND:
A recent family study of young adult males suggests a shared familial liability between attention-deficit/hyperactivity disorder (ADHD) and high body mass index (BMI), and a genome-wide meta-analysis reported a genetic correlation of 0.26 between ADHD and BMI. To date, it is unclear whether these findings generalize to the relationship between ADHD and clinically diagnosed obesity.

METHOD:
By linking the Swedish national registers, we identified 25 38 127 individuals born between 1973 and 2000, together with their siblings and cousins. The risk of clinical obesity in individuals with ADHD was compared with the risk in those without ADHD. The relative contributions of genetic and environmental factors to the association between ADHD and clinical obesity were examined via assessment of the familial co-aggregation of the two conditions and quantitative genetic analysis.

RESULTS:
Individuals with ADHD were at an increased risk of clinical obesity compared with those without (risk difference 3.73%, 95% confidence interval (CI) 3.55-3.90%; risk ratio 3.05, 95% CI 2.95-3.15). Familial co-aggregation of ADHD and clinical obesity was detected and the strength of the co-aggregation decreased by decreasing genetic relatedness. The correlation between the liabilities to ADHD and clinical obesity can be entirely attributed to their genetic correlation (rg 0.30, 95% CI 0.17-0.44).

CONCLUSION:
The association between ADHD and clinical obesity in adolescence and young adulthood can be entirely attributed to genetic underpinnings shared by the two conditions. Children with ADHD should be monitored for weight gain so that preventive measures can be taken for those on a suboptimal trajectory.