

Autism spectrum disorder, attention-deficit/hyperactivity disorder, tic disorder and obsessive-compulsive disorder in individuals with eating disorders and their siblings: a register-based Finnish cohort study

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Introduction: Neurodevelopmental conditions frequently co-occur with eating disorders (EDs) and genetic studies support shared etiology between EDs and neurodevelopmental conditions. Previous register-based studies have demonstrated bidirectional associations between anorexia nervosa (AN) and autism spectrum disorder (ASD) as well as between AN and obsessive-compulsive disorder (OCD), whereas evidence for associations between other EDs and neurodevelopmental conditions is more limited.

Aims: This study aimed to investigate the occurrence of attention-deficit/hyperactivity disorder (ADHD), ASD, tic disorder (TD), and OCD in individuals with EDs and their full and half siblings.

Methods: Study population comprised all individuals born in Finland between 1991-2001 with a recorded diagnosis of following ICD-10 EDs (N=4240 individuals): anorexia nervosa (AN, F50.0/F50.1), bulimia nervosa (BN, F50.2/F50.3), and other/unspecified EDs (F50.8/F50.9). We also included population controls (N=16494) without ED diagnoses as well as full and half siblings of both ED and control participants (N=36301). Conditional logistic regression was applied in analysis.

Results: Individuals with AN had increased occurrence of ASD, ADHD, and OCD compared to population controls (Odds ratios [OR]: 6.62 [95% CI 4.21-10.39]; 3.30 [95% CI 2.33-4.69]; 10.67 [95% CI 7.07-16.10], respectively). Individuals with other/unspecified EDs had increased occurrence of ASD, ADHD, TD, and OCD (ORs: 9.06 [95% CI 5.5-14.77]; 2.78 [95% CI 1.92-4.01], 4.68 [95% CI 1.94-11.32]; 7.64 [95% CI 4.92-11.87], respectively). The occurrence for ASD was particularly pronounced in males with other/unspecified EDs (OR 32.40 95% [CI 9.78-107.39]). Compared to full siblings of population controls, full siblings of individuals with AN had two-fold odds for ASD and three-fold odds for OCD; full siblings of individuals with other/unspecified EDs had 2-3-fold odds for ASD, ADHD, TD, and OCD compared to full siblings of population controls.

Discussion: Individuals with EDs have a high occurrence of neurodevelopmental conditions, also extending to their full siblings. The findings characterize the comorbidity and familial aggregation of these conditions.