

EATING DISORDERS, EATING PATHOLOGY AND ESSENCE

AKADEMISK AVHANDLING

som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligen försvaras i Academicum, Hörsal Arvid Carlsson, Medicinaregatan 3, fredagen den 25 november 2016 kl. 13:00

av LOUISE KARJALAINEN

Fakultetsopponent:

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Avhandlingen baseras på följande delarbeten

- I. Karlsson, L., Råstam, M., & Wentz, E. The SWedish Eating Assessment for Autism spectrum disorders (SWEAA) -Validation of a self-report questionnaire targeting eating disturbances within the autism spectrum. *Research in Developmental Disabilities* 2013; 34: 2224-2233.
- II. Karjalainen, L., Gillberg, C., Råstam, M., & Wentz, E. Eating disorders and eating pathology in young adult and adult patients with ESSENCE. *Comprehensive Psychiatry* 2016; 66: 79-86.
- III. Björnsdotter, M*, Davidovic, M*, Karjalainen, L., Starck, G., Olausson, H., & Wentz, E. Shared superior temporal gray matter reductions in women with anorexia nervosa and autism spectrum disorder. *Shared contribution. *Submitted*.
- IV. Karjalainen, L., Råstam, M., Paulson-Karlsson, G., & Wentz, E. Autistic eating behaviours in anorexia nervosa. *Submitted*.

**SAHLGRENKA AKADEMIN
INSTITUTIONEN FÖR NEUROVETENSKAP OCH
FYSIOLOGI**



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Abstract

BACKGROUND: Eating and mealtime problems are among the most common problems in individuals with autism spectrum disorder (ASD). Despite this, no systematic way of exploring these problems has been available for persons with ASD and normal intelligence. Furthermore, little is known about the prevalence of traditional eating disorders (EDs) such as anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED), and eating pathology in individuals with Early Symptomatic Syndromes Eliciting Neurodevelopmental Clinical Examinations (ESSENCE, which describes the overlap between neurodevelopmental conditions, e.g. ASD and attention-deficit/hyperactivity disorder (ADHD)). A link between EDs and ESSENCE is highly topical but the knowledge about the similarities between the two conditions in terms of eating behaviours and potential neurobiological commonalities is scarce. **AIMS:** The overall aim of this thesis was to incorporate knowledge from different angles in order to better understand the coexistence of ESSENCE and EDs. The specific aim of each study was as follows: (I) to validate a newly developed instrument, the SWedish Eating Assessment for Autism spectrum disorders (SWEAA); (II) to examine the prevalence of EDs and eating pathology in adults with ASD and/or ADHD; (III) to examine cortical grey matter volume in brain areas connected to social cognition in AN, and compare these data with matched healthy comparison cases and ASD patients; (IV) and to examine the presence of "autistic eating behaviours" among female patients with AN. **METHODS:** The following individuals have been examined; adolescents and adults with ASD and/or ADHD, current AN patients (at admission and at 1-year follow-up), partially recovered (weight restored) AN patients, and healthy matched comparison groups in all but one study. The SWEAA has been validated and information on autistic eating behaviours in patients with ASD, patients with AN and matched healthy comparison cases has been investigated. Differences in grey matter volumes have been examined with magnetic resonance imaging (MRI) in patients with AN and compared with the volumes of matched healthy individuals and patients with ASD. All studies used validated psychiatric questionnaires and interviews. **RESULTS:** The validation of the SWEAA showed good psychometric properties. Patients with current AN scored higher on the SWEAA than patients with ASD. At 1-year follow-up AN patients still had high scores on the autism specific items and partially recovered AN patients had the same total score as patients with ASD. In a large sample of adults with ASD and/or ADHD a total of 8% had a current or previous eating disorder and the male to female ratio was 1:2.5. The most common EDs were AN and BED. The MRI study showed specific grey matter reductions in brain areas connected to social cognition both in females with AN and in females with ASD. **CONCLUSIONS:** The compilation of the studies in the present thesis gives further support to the notion of common denominators between EDs and ASD, both in terms of behaviour and neurobiological deviations. This knowledge is important not only to researchers but also to clinicians to enable individually tailored treatment, using strategies from both the eating disorder and the ASD realm.

Keywords: Autism spectrum disorder, anorexia nervosa, eating disorders, cortical grey matter, ADHD