Eating disorders and social communication

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Outline

- Introduction
- Definition of social communication
- Neuropsychological deficits in eating disorders linked to social communication
- Neuroimaging correlates
- The Gothenburg study
- The St. George's study
- Conclusions

Case report

- Margaret 56 year-old woman
- Anorexia nervosa and other eating disorders since the age of 12
- Repeated sexual assault by grandfather at age 11
- All therapies have focused on the sexual assaults
- At age 56 assigned a diagnosis of autistic-like condition
- Could this patient not communicate that she had been sexually harassed as a child?
- Did she not realize that she had been exposed to an assault because she had an autistic-like condition?

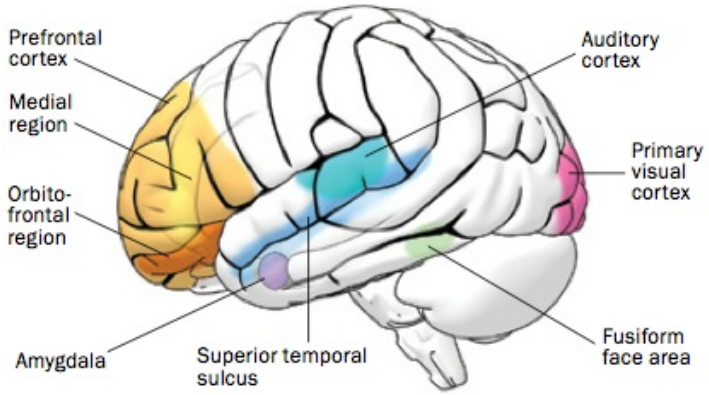
Social communication disorder

previously proposed criteria DSM-5

A. Social communication disorder (SCD) is an impairment of pragmatics and is diagnosed based on difficulty in the social uses of verbal and nonverbal communication in naturalistic contexts, which affects the development of social relationships
B. The low social communication abilities result in functional limitations in effective communication, social participation, academic achievement, or occupational performance, alone or in combination

Definition Social cognition

- Refers to the mental processes underlying human social behaviour and interaction (Adolphs 1999)
- The ability to construct representations of the relation between oneself and other and to use those representations flexibly to guide social behaviour (Adolphs 2001)
- Social brain: amygdala, orbitofrontal cortex, temporal cortex, mirror neurons and medial prefrontal cortex (Brothers, 1990, Rizzolatti & Craighero, 2004, Amodio & Frith, 2006)



Anorexia nervosa (AN) and social communication

- AN and autism are related conditions: poor social functioning, obsessiveness and maintenance of sameness (Gillberg, 1983)
- "Women with AN have an underlying deficiency in the identification of emotional states" (Bruch, 1962)
- (Women with AN) "suffer from definite deficits in the way in which they interpret human relationships and think of their own role in life" (Bruch, 1977)

Minnesota Starvation Experiment

- Objective: to study the physical and psychological effects of prolonged famine-like semi-starvation on healthy men
- Six months of semi-starvation (36 men; 22-33 years)
- Depressed mood
- Preoccupation with food
- Sexual interest drastically reduced
- Social withdrawal
- Reported decline in concentration, comprehension and judgement capabilities (The biology of human starvation; Keys et al 1950)

Premorbid social communication in AN

- Separation anxiety disorder
- Social phobia
- Autism spectrum disorders
- Shy with friends
- Severe difficulties concerning close others are the most common precipitating stressor of AN (Schmidt et al, 1997)
- The social difficulties persist after recovery (Wentz et al, 2001, Anckarsäter et al, 2011)

Males with AN

Premorbid traits:

- Obsessive: 30-50%
- Few/no friends: 50%
- ”Meticulous”, ”thorough”, ”ruled by the clock” or ”always taking hobbies to extremes” (Sharp et al, 1994)

Follow-up of young men:

- Less often a life involving a partner and children (Lindblad et al, 2006)

Neuropsychology in anorexia and bulimia nervosa (BN)

- Lack of flexibility, diagnosed by using tests of set-shifting, has repeatedly been reported in AN (can also be seen after weight gain). A lack of flexibility has also been noticed in other eating disorders e.g. BN (Roberts et al, 2007)
- Central coherence is characterized by the ability to see the bigger picture as opposed to focusing on details. Weak central coherence is reported in AN both during current illness and after recovery. Siblings of individuals with AN have shown a similar cognitive pattern (Tchanturia et al, 2008, Tenconi et al, 2010)
- BN also displays weak central coherence (Lopez et al, 2008)

Neuropsychology in AN

- The neurocognitive deficits lack of flexibility and weak central coherence have been suggested as possible endophenotypes for AN
- Problems with flexibility and central coherence can to some extent explain why AN individuals manage to adhere to a strict diet and are not able to realize the severity of the illness and its devastating consequences

Neuropsychology in AN

- Facial emotion recognition is impaired in AN
- AN shows greater neuronal activity, especially for neutral faces, suggesting that they make efforts to search for and assign emotion, even when not present
- Poor facial emotion recognition seems to persist after recovery
- Reading of emotion in voices is reduced in currently ill AN individuals, but normalized after recovery
- AN less facially expressive than healthy comparison group concerning positive affect but not negative affect

Neuroimaging correlates in AN

- SPECT: unilateral temporal hypoperfusion even after weight gain (Gordon et al, 1997). Temporoparietal and orbitofrontal hypoperfusion in recovered individuals (Råstam et al, 2001).
- Functional magnetic resonance imaging: Prefrontal cortex and anterior cingulate cortex (*theory of mind*) show reduced activity in rest and increased actitvity after food stimuli (Uher et al, 2003, 2004)
- Functional magnetic resonance imaging using theory of mind tasks: reduced activation in middle and anterior temporal cortex and in the medial prefrontal cortex both in the acute phase and after weight recovery (Schulte-Ruther et al, 2012).

The Gothenburg study: Participants

Total anorexia nervosa group (AN)
51 (48 F: 3 M)

- 24 AN subjects - population-based group
- 27 AN subjects - referred group

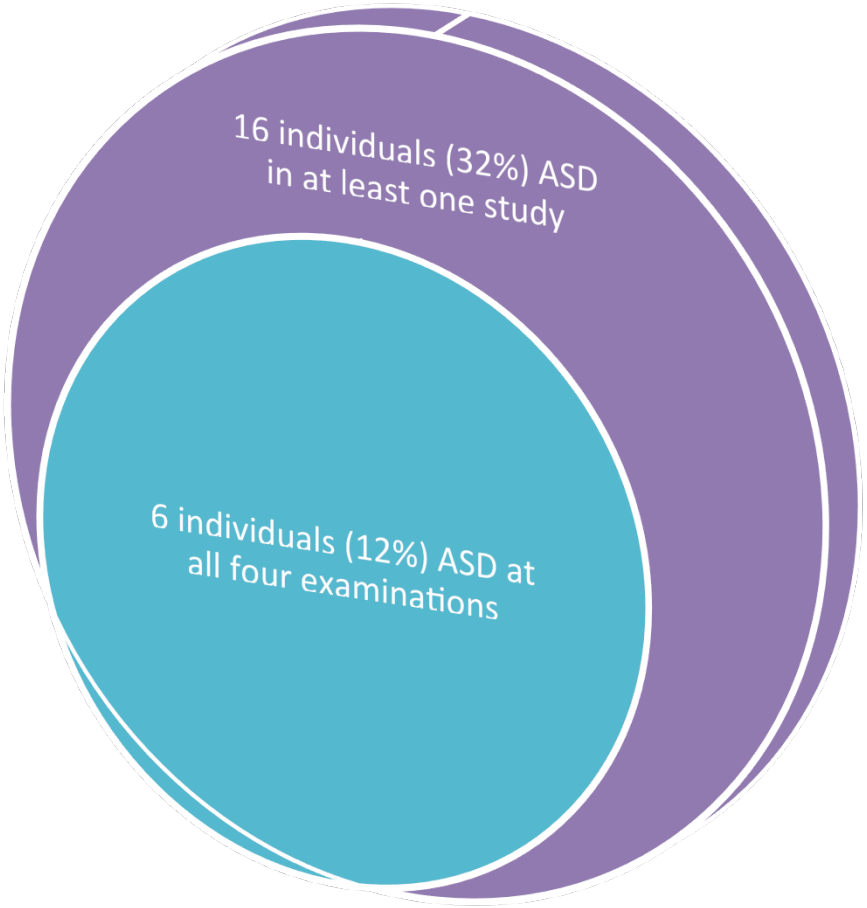
Comparison group (COMP)

- 51 age-, gender-, and school-matched cases

The Gothenburg study: premorbid autistic traits

- Different from other children
- Poor social interaction with peers
- Tend to be dependent on only one friend that they use as a role model
- Rules, routines, and rituals
- Perfectionistic and over-ambitious
- Stubborn
- Unusual interests
- Unaware of other people's perspectives
- Separation anxiety (Råstam, 1992)

The Gothenburg study: Autism spectrum disorders



The Gothenburg study: 18-year follow-up study

- One in four in the AN group had no paid employment due to their eating disorder and/or other psychiatric problems compared with 2% in the COMP group. All individuals with autism spectrum disorders (ASD) belonged to this subgroup
- Poor outcome was predicted by autistic traits (according to GAF and a specific eating disorder outcome scale) (Wentz et al, 2009)

The St. George's study, London

Hypothesis: ASD, ADHD and tic disorders are overrepresented in individuals with chronic AN and BN

- 30 female adult eating disorder patients (21 AN, 9 BN)
- Mean age: 27.4 years (SD: 8.4; range: 18.0 - 56.0 years)
- Duration of current eating disorder: 9.5 years (SD: 8.8)

- One in three with chronic AN had ASD
- One in four with chronic AN had had ADHD during childhood (Wentz et al, 2005)

Conclusions

- Problems with social communication are overrepresented in individuals with eating disorders, AN in particular
- In AN problems with social communication occur both premorbidly, during illness and after recovery
- Clinicians must be more aware of these problems in order to provide adequate treatment