Sex Differences in Restricted and Repetitive Behaviors and Interests in Children with ASD

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Introduction

- Restricted and repetitive behaviors and interests (RRBIs) are behaviors characterized by high frequency, repetition, and desire for sameness in the environment (Lekman, 2011).
- The DSM-5 and ICD-10 divide RRBIs into 4 categories of stereotomotor behaviors, rituals, restricted interests, and sensory behaviors.
- Previous studies of sex differences on RRB severity and typology have yielded mixed results (Aley, 2019).
- Some studies (especially those with children under the age of 6) have found no differences in RRBs between females and males, whereas other studies (especially those with elementary school and adolescent aged participants) have found that males exhibit more RRBIs than females.
- One study looking at gender profiles, showed that females tend to show more compulsive, sameness, restricted, and self-injurious behaviors, and also have a greater overlap of ASD and obsessive-compulsive symptoms such as hoarding and trichotillomania (Antanzza et al., 2018).

Methods

Participants

Novel analysis of data for 258 individuals (90 females), ages 3-18, collected previously as a part of an ongoing genetics study at the Connecticut Children’s Medical Center (CCMC).

Measures

• DSM-5 Checklist (clinician report)
• Pervasive Developmental Disorders Behavioral Inventory (PDDBI) (caregiver report)

Results

A two-way between groups multivariate analysis was performed to investigate sex differences in both clinician observed and caregiver reported symptoms. The dependent variables were the 7 (3 social, 4 RRB) DSM-5 symptom clusters/criteria (clinician report) and the corresponding 4 RRB categories from the PDDBI (caregiver report).

Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance, and multicolinearity with no serious violations noted. There was a statistically significant difference between males and females on the combined dependent variables, F (11, 268) = 5.3, p = .013, Wilk’s lambda = .89, partial eta squared = .034. An inspection of the means indicated that females showed more ritualistic and fewer restricted interests compared to males according to both clinician and caregiver reports (Figures 2 and 3).

Conclusions

• Results are consistent with previous reports that rituals may be more representative of a female profile (Antanzza et al., 2018), and that males display greater interest in interests (Knickmeyer et al., 2005).
• Females in the general population show twice the rate of OCD after puberty, indicating there may be a link between OCD behaviors and female hormones. Similarly, Knickmeyer et al., (2005) reported a significant correlation between fetal testosterone levels and restricted interests in males.
• Females with ASD have shown to have greater overlap of hoarding and self-injurious behaviors and are more likely to have a comorbid diagnosis of OCD (Antanzza et al., 2018). In addition, many females with eating disorders have ASD traits (Hake et al., 2013). It is possible that female symptoms may be construed as symptoms of other disorders, rather than as fulfilling criteria for ASD.
• Females may learn to camouflage intense interests—as they get older, i.e. an interest in horses may be missed as an RRB in girls with ASD.
• On average, females with ASD are diagnosed over 4 years later than their male counterparts (Begger et al., 2013). This may be, in part, because clinicians more readily have heuristics about how males with ASD present and because the instruments themselves may have some bias (for example, using examples that are behaviors more likely to be seen in males). Continued research is needed on differences in mate versus female presentation in order to improve early diagnosis for females with ASD.

References


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