DETECTING FEEDING PROBLEMS IN YOUNG CHILDREN WITH AUTISM, USING A GENERAL SCREENER

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Introduction

Background

Roughly 44-89% of children with ASD have feeding problems (Seiverling et al., 2018). The most prevalent is **food selectivity**. Parents also report **disturbing feeding behaviors**, such as walking away from the table, whining, and yelling, throwing or dumping foods, difficulty eating at restaurants, aggression and tantrums during eating. Also, **food rituals and food anxiety** are reported, which can be related to compulsive rituals, avoidance of certain types of food, and the insistence on specific methods of food preparation, food types and mealtime rules. Additionally, **atypical ways of eating** are reported, such as gagging, pica, overeating, rapid eating, vomiting, regurgitation, and rumination (Ledford & Gast, 2006).

Feeding problems increase the risk of malnutrition (e.g., undernutrition), suboptimal or stunted growth, and developmental and cognitive delays. Caregivers show higher levels of parental stress, including parent-child conflict and parent-spouse stress (Kuschner et al., 2017). Without adequate diagnosis and treatment, feeding problems tend to persist throughout childhood and adulthood, and may lead to eating disorders (Westwood & Tchanturia, 2017). Because feeding problems in early childhood have such **aversive consequences for child development and family wellbeing**, early detection is important, also in children who are yet not diagnosed with ASD.

Objectives

Evaluate the use of a **short general screener for feeding problems** (MCH-FS) in young children with ASD.

Methods

Participants were the caregivers of two groups of children.

The first group (n = 80, 55 boys & 25 girls) consists of a **clinical sample** of caregivers of children between the ages of 1 and 6 years (M = 17.25, SD = 4.8 months) who were diagnosed with ASD by the young children expert team at INTER-PSY, a large mental health care institution in the North of the Netherlands. They had a mean total score of 14.75 (SD = 5.00) on the ADOS-2 (cut-off score for diagnosing ASD is 7). The cognitive development of these participants at time of inclusion was slightly below average (IQ/developmental index on either the WPPSI, SON-R or Bayley Developmental Scales (M = 90.32; SD = 18.25). The data was collected from 2014 to 2017.

The second group of participants consists of caregivers from the **general population sample** (n = 1389, 706 boys & 676 girls; in 7 cases, 'sex' was left blank) of caregivers of children between the ages of 1 and 6 years. (n = 1389; M = 14.12, SD = 7.41 months; n = 965 are <3 years). The data was collected in 2010 and 2018.

The Dutch version of the **Montreal Children's Hospital Feeding Scale** (MCH-FS; Ramsay et al., 2011; called the *Screeninglijst Eetgedrag Peuters*/SEP; see Van Dijk et al., 2011) was used to assess severity of feeding problems. This questionnaire, filled in by caregivers, measures seven main constructs: parental concern, family reactions, compensatory strategies, appetite, mealtime behaviors, oral sensory behavior, and oral motor behavior. Percentile cut-off points of 84.1, 95.0 and 97.5 represent 'mild', 'moderate' and 'severe' problems, respectively.

Results

The internal consistency of the MCH-FS was good in both samples (ASD: α = .828, Guttman's λ-2 = .839; GPS: α = .847, Guttman's λ-2 = .856). In general, caregivers of children with ASD reported more feeding problems than from GPS (see table 1; Mann-Whitney U test; U = 73.358, z = 4.826, p < .001). Also, the score distribution in ASD seemed to be much less positively skewed than in GPS (see violin plot in Figure 1).

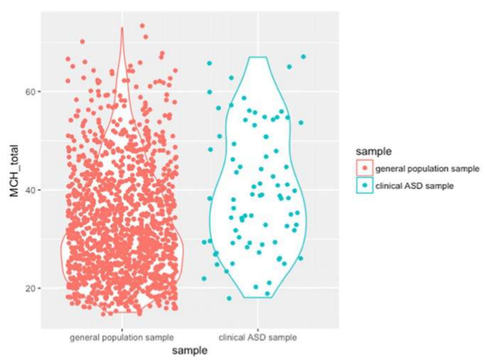
When considering the total score on the MCH-FS of the children with ASD in relation to the 84.1, 95.0 and 97.5 percentile cut-off point calculated in the normative sample, 15 children fell in the category 'mild problems', 6 children in the category 'moderate problems', and 3 children in the category 'severe problems'.

The response patterns on the individual MCH-FS items was highly similar. There was a slight increase in feeding problems with age for the GPS ($\chi2(5) = 138.282$; p < .001), but not the ASD sample ($\chi2(5) = 4.015$, p < .547).

Table 1 Descriptive statistics for the MCH-FS items for the general population sample and the clinical ASD sample

MCH-FS	General population sample				Clinical ASD sample			
Item content	M	SD	Range	Skewness	M	SD	Range	Skewness
1. Difficult mealtimes	2.84	1.38	1–7	1.38	3.99	1.47	1–7	0.00
2. Worries about feeding	2.19	1.45	1–7	1.45	2.67	1.72	1–7	0.83
3. Poor appetite	3.25	1.17	1–7	1.17	3.47	1.29	1–7	0.13
4. Start refusing food	3.48	2.00	1–7	2.00	4.90	2.06	1–7	− 0.62
5. Long mealtimes	2.77	0.97	1–7	0.97	2.44	1.28	1–7	1.12
6. Bad behavior	2.86	1.48	1–7	1.48	3.85	1.56	1–7	− 0.22
7. Gags/spits/vomits	1.72	1.20	1–7	1.20	2.26	1.81	1–7	1.26
8. Holding food in mouth	2.09	1.49	1–7	1.49	2.45	1.80	1–7	1.05
9. Follow around/distract	2.33	1.65	1–7	1.65	3.01	2.10	1–7	0.62
10. Force to eat	2.46	1.60	1–7	1.60	2.84	1.65	1–6	0.46
11. Poor chewing	1.63	0.97	1–7	0.97	1.87	1.16	1–6	1.49
12. Poor growth	1.71	1.16	1–7	1.16	1.66	1.17	1–7	2.21
13. Influence relation	1.75	1.13	1–7	1.13	1.96	1.20	1–6	1.17
14. Influence family relations	1.99	1.44	1–7	1.44	2.50	1.78	1–7	0.91
Total score	33.07	11.26	15–73	11.26	39.96	12.52	18–67	0.31

Fig. 1 Violin plots of the distribution of scores in both the clinical ASD sample and the general population sample



Conclusions

The Dutch version of the MCH-FS – called the SEP – is very well suited to function as a general screening instrument in the diagnostic process, in populations that include children with ASD. The questionnaire has a **good internal consistency** in both the general population sample and the (clinical) ASD sample.

Caregivers of **children with ASD scored higher** on this questionnaire, evidencing more feeding problems in their children, as expected.

Further research is needed on the sensitivity and specificity of the instrument in this group. If significant feeding problems are found in children with ASD, it may be advised to use a more specific instrument focusing on more specific symptoms in this subgroup, such as the BAMBI and by collecting additional information from parents.

References are published in

van Dijk, M.W.G., Buruma, M.E., & Blijd-Hoogewys, E.M.A. (2021). Detecting feeding problems in young children with autism spectrum disorder. Journal of Autism and Developmental Disorders, 1-13.