



Assessing Appropriateness, Comprehensibility and Accessibility of Checklist for Oromotor, Oral Sensory, Feeding, and Praxis Issues for Children with Autism Spectrum Disorders (COFAS-ASD) by Speech Language Pathologist. A Pilot Study.

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Abstract

This pilot study investigates the feasibility, comprehensibility and accessibility of Checklist for Oromotor, oral sensory, feeding, and praxis issues in children with ASD (COFAS-ASD) between typically developing (TD) children and children with autism spectrum disorder (ASD). Utilizing the Checklist of Oromotor, Oral Sensory, Feeding, and Praxis Issues (COFAS), 12 children with TD and 8 children with ASD were assessed by three speech-language pathologists. The study aims to provide insights into the feasibility, comprehensibility and accessibility of SLPs in each group, offering valuable data to guide future research and interventions. Result revealed ASD has more Oromotor, Oral sensory, feeding and Praxis issues compare to TD. Simultaneously, SLPs state the checklist was easily comprehensive, accurate and accessible by all of them.

Keywords: *Autism Spectrum Disorders (ASD), Oromotor Deficits, Oral Sensory Issues, Feeding Issues, Praxis Issues, COFAS-ASD, Speech-Language Pathologist, Assessment, Checklist, Speech Therapy, Oral Integration Therapy, Feeding Therapy.*

Introduction

Oromotor, oral sensory, feeding, and praxis issues are critical aspects of speech and language development in children. These issues can significantly impact a child's ability to communicate effectively and can be particularly pronounced in children with autism spectrum disorder (ASD). ASD is a neurodevelopmental disorder characterized by social communication difficulties and restricted, repetitive behaviors (American Psychiatric Association, 2013). Children with ASD often exhibit oromotor and oral sensory challenges, which can complicate feeding and praxis skills. Understanding these differences between typically developing (TD) children and those with ASD is essential for developing targeted therapeutic interventions.

This study aims to analyse the feasibility, comprehensibility and accessibility in using the Checklist of Oromotor, Oral Sensory, Feeding, and Praxis Issues (COFAS) in TD children and children diagnosed with ASD. By examining these the researcher tried to modify associations and differences, this study aims to identify specific areas that require more focused therapeutic approaches.

Review of Literature

Oromotor skills are crucial for speech production and involve the coordination of muscles in the mouth, face, and respiratory system. Deficits in oromotor skills can lead to difficulties in articulation and phonation (Williams, Stephens, & Connery, 2010). Oral sensory processing involves the perception and response to sensory stimuli in the mouth. Children with atypical oral sensory processing may experience hypersensitivity or hyposensitivity, affecting their feeding behaviors (Ben-Sasson et al., 2009). Feeding issues in children with ASD are well-documented, with many exhibiting selective eating behaviors, food aversions, and difficulties with textures (Cermak, Curtin, & Bandini, 2010). Praxis, or motor planning, involves the ability to plan and execute movements. Children with ASD often struggle with praxis, impacting their ability to perform coordinated actions such as chewing and swallowing (Gernsbacher, Sauer, & Goldsmith, 2008). Studies have shown that children with ASD exhibit significant differences in oromotor, oral sensory, and feeding behaviors compared to their TD peers (Smith & Roux, 2010). These differences highlight the need for specialized assessment tools like the COFAS to accurately identify and address these issues.

Methods

Participants:

The study involved a diverse group of 20 children, categorized into two distinct age brackets: 4-6 years and 6-8 years. These participants were further divided based on the severity of their condition, ranging from mild to moderate, and severe, with an equal distribution of children across each subgroup and severity level, totaling eight children. The sample comprised 12 children exhibiting typical development and 8 children diagnosed with Autism Spectrum Disorder (ASD). The latter were enlisted from local speech and language therapy clinics, while the typically developing children were recruited from a school in Hyderabad.

Assessment: Tool: The Checklist of Oromotor, Oral Sensory, Feeding, and Praxis Issues (COFAS) was used to assess the participants. The COFAS is a comprehensive tool designed to evaluate the existence of oromotor, oral sensory, feeding and praxis issues in ASD

Procedure

Three experienced speech-language pathologists conducted the assessments in presence of Primary Investigator (PI). Each child was evaluated individually in a controlled environment to minimize distractions

and ensure consistency. The assessments included observations and structured tasks to elicit specific responses related to oromotor, oral sensory, feeding, and praxis skills. In the study varieties of food with different textures and taste like Banana (for soft texture), Chips (Mid texture) and murukku snacks (for Hard texture) and others varieties of food with different taste like sauces, mayonnaise. For safety and precautions sanitizers, gloves and disposable utensils were used. Additionally, The SLP's feedback was collected in Likert Scale. The rating scale was from Appropriateness (1=Not Relevant, 2= Somewhat Relevant, 3= Relevant, 4= very Relevant) and for Comprehensibility (1- Easily Understood 2. May Understand, 3. Difficult to Understand), Accessibility (1-very poor 2- poor 3-Fair 4- good 5- very good).

Data Analysis

The data were analyses rating giving on each questionnaire and analysed the comparison between the two groups (TD and ASD). Cross tabulation was done in this study.

Results and Discussions

The analysis revealed significant differences between the TD and ASD groups in several areas:

In the comprehensibility, appropriateness and Accessibility all the three-speech language Pathologist showed following results:

Sl. No	comprehensibility				Appropriateness				Accessibility			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
SLP 1	1	1	2	2	4	3	3	4	4	5	5	5
SLP 2	2	2	1	2	3	4	4	4	5	5	5	5
SLP 3	1	1	1	1	4	4	4	3	5	5	5	4

Table 1: Feedback about the questionnaire from Speech language Pathologist

Table 1 state that all the three SLPs found the tool appropriate, Comprehensive and Accessible, there was certain advice and suggestions received, based on that final questionnaires were modified.

In Objective two of pilot study among 8 children from experimental groups and 12 from control groups revealed following results.

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- 1. Oromotor Skills:** Comparison between TD and ASD, Children with ASD showed greater difficulties in oromotor coordination, Active participations, particularly in tasks initiation and sustaining attention, limited interest for complex movements such as tongue elevation and lip rounding.
 - 2. Oral Sensory Processing:** The ASD group exhibited a higher prevalence of oral sensory processing issues, including hypersensitivity to certain textures and tastes. These findings are consistent with previous research indicating sensory processing differences in children with ASD (Tomchek & Dunn, 2007).
 - 3. Feeding Behaviours:** Feeding issues were more pronounced in the ASD group, with children displaying selective eating behaviours, aversions to specific textures, and difficulties with chewing Pica habits, spitting of foods, food pocketing and swallowing. These behaviours align with existing literature on feeding difficulties in children with ASD (Cermak et al., 2010).
 - 4. Praxis Skills:** The ASD group showed significant challenges in motor planning and execution, impacting their ability to perform coordinated feeding actions. This finding underscores the need for targeted interventions to improve praxis skills in children with ASD.

Children with TD shows no significant issues in any of the four sections.

The study highlights the importance of using comprehensive assessment tools like the COFAS to identify specific areas of need in children with ASD. The differences observed between the TD and ASD groups provide valuable insights for developing tailored therapeutic strategies.

Summary and Conclusions

This pilot study provides a detailed comparison of oromotor, oral sensory, feeding, and praxis issues between typically developing children and children with autism spectrum disorder. Additionally, checked comprehensibility, appropriateness and Accessibility all the three-speech language Pathologist. The findings in pilot study underscore the significant differences in these areas among TD and ASD, highlighting the need for single comprehensive tools to assess Oromotor, Oral sensory, feeding and Praxis issues among children with ASD. By using the COFAS checklist, clinicians can better identify and address the specific challenges faced by children with ASD, ultimately improving their speech, language, and feeding outcomes. Future research should expand on these findings with larger sample sizes and longitudinal studies to further understand the developmental trajectories of these issues.

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