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A Comparative Study of Feeding Difficulties Faced by Parents of Children with Autism Spectrum Disorder and Typically Developing Peers Ages 3-5 Years

Dr Arun Banik[1], Sindhuja Senthil Kumar[2], Tania Solanki[3], Anindita Banik[4]

[1,2,3,4]*School of Rehabilitation and Behavioral Sciences, Vinayaka Mission'sResearch Foundation Deemed to be University, Puducherry, India*

***Abstract*-- *Introduction*: Autism Spectrum Disorders (ASD) leads to feeding problems, including slow picker eating, oro-motor difficulties, restricted food repertoire, and food refusal. Behavioural difficulties, such as disruptive aggressive behaviours, also occur. These problems can range from 6.7% to 90% in prevalence in children age range 5-11 years (Mari Viviers et.al. 2020).**

***Aims And Objectives:* The aim of the study is to investigate the parental perception of feeding and swallowing difficulties in young children with ASD in comparison to their typically developing peers. The objectives of the study are to compare the feeding difficulties faced by parents of ASD and developing peers aged 3-5 years.**

***Method:* A study recruited 28 participants, including 10 diagnosed with autism spectrum disorder and 18 parents. A 10-item questionnaire was developed and validated by 5 professionals, addressing common feeding and swallowing behaviours. The questionnaire was given to 18 normally developing and 10 ASD parents.**

***Results And Discussion:* A study found that many parents struggle with feeding their children, including those with ASD and typically developing children. Parents with developmental needs use flexible parenting styles, making it challenging to apply reasoning and expectations. Culturally Indian children, particularly in rural areas, may have authoritarian parenting styles.**

***Summary And Conclusion:* The study found that feeding problems may cause nutritional insufficiencies in families with children with ASD and their peers. These insufficiencies affect motor brain development and appetite, further exacerbating the issue of inadequate nutrition intake. The present study suggests culturally sensitive programs benefit children in overcoming feeding difficulties.**

The study concluded with 3 important suggestions that mothers should be educated regarding the choice of child's food preference viz. (i) Mother should be educated on selecting easy-to-feed utensils to overcome swallowing difficulties (ii) Based on anatomical and physiological development both ASD & normal face feeding problems at certain age (ii) Mother should always be oriented to motivate the child to eat food.

Overall, Study is crucial for the therapeutic management of swallowing problems in ASD and developing children.

I. Introduction

The five illnesses that makeup autism spectrum disorders are characterized by language difficulty, repetitive or constrained interests, and stereotyped behaviors. These conditions are classified as pervasive developmental disorders in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV:TR; APA, 2000). These include childhood disintegrative disorder, Asperger's disorder, Rett's disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS). Autismis also referred to as autistic disorder.

Autism spectrum disorders (ASD), a set of complex neuro developmental conditions with varying degrees of severity, are distinguished by a variety of symptoms, including challenges with social interaction, communication, sensory integration, and conduct[1, 2, 3.]

Feeding issues have a significant impact not only on the health of the child but also on the dynamics and psychological health of the family. Evidence-based management recommendations are required due to these negative impacts. Behavioural therapies have been proven to be helpful for some forms of feeding issues; however, many frequently advised interventions frequently lack evidence of their efficacy. There is a dearth of comparative research on behavioural therapies, much of it small-scale, and extremely provider-dependent.

Children with ASD frequently experience behavioural feeding issues and unusual eating, with a prevalence as high as 20%. March 2020 524 African Health Sciences Vol 20 Issue 1 © 2020 African Health Sciences is the licensee for Viviers M et al. The Creative Commons Attribution Licence (https://creativecommons.org/licenses/BY/4.0), which permits unrestricted use, distribution, and reproduction in any form as long as the original work is properly credited, governs the dissemination of this Open Access paper. 46–89% for African Health Sciences[6,7]

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Food selectivity, picky eating, oral-motor difficulties, obsessive eating habits, improper eating rate, food cravings, pica, restricted use of utensils, and unique meal presentation are among the feeding issues connected to ASD.[6,9,10]. Although more concrete data regarding its appearance in this population is required9, dysphagia may also be widespread in kids with ASD. Nutritional deficiencies, elevated risk for illness, aspiration pneumonia, dehydration, airway blockage, weight loss or obesity, and serious health issues like rickets that have a negative impact on quality of life are examples of secondary problems[11,12,13.]

The development and validation of this study South Indian population: comparison of eating issues reported by parents of children with autism spectrum disorders (aged 3 to 5 years) with classmates who are usually developing. The development and validation of the questionnaire was a further goal of the study. to evaluate the questionnaire among children with ASD and generally developing kids. Children without a clear medical cause for their feeding issues made up the initial clinical group. The ASD in the second clinical group. According to a recent study by Stark et al4, children with cystic fibrosis (CF) and their parents exhibit similar eating-related behaviours to healthy controls, but more frequently. We were interested in determining whether children who were referred for feeding issues engaged in fundamentally different behaviours (maladaptive) or comparable behaviours that occurred more frequently than those seen in healthy, typically developing toddlers.

II. METHODS

The questionnaire in this study contains 10 questions grouped. It was specifically designed to evaluate feeding problem faced by parents of two group, one group typically developing children and another group ASD. It contains simple and short sentences that were created to be comprehensible to parents. The questionnaire was first developed in English and then translated in Tamil. All the parents were signed the free and informed consent and/or assent form. The four-step methodology used for the translation and validation of questionnaires developed in other languages was followed, as described below.

Participants and sampling

The group of children diagnosed with ASD consisted of 10 parents from different cultural backgrounds in Puducherry. These parents had children between the ages of 3 years and 11 months to 5 years and 11 months who had a confirmed diagnosis of ASD. The TD group consisted of 18 parents whose children were typically developing peers within the specified age range. The reason for including this specific age group is that the diagnosis and methods for assessing Autism Spectrum Disorder (ASD) in children under three years old are not well established

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Table:

	Frequency	**Percentage**
Male	19	67.9
Female	9	32.1
ASD	10	35.7
Normal	18	64.3

Participant description (n=28)

Description of gender

Gender	Normal	ASD	P value
Male	4	15	.019
Female	6	3	

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Variables

Categorical variables such as age, gender and diagnostic status were included to ensure that the experimental and control groups came from similar backgrounds as to eliminate confounding variables.

The quantitative variables that were examined in the Screening tool were measured on a Likert scale (yes/No) to obtain numerical data that fell on a continuum. As the questionnaire was developed from

Table: Description of question.

Mean	4.075
Std. Deviation	.8813
Minimum	3.0
Maximum	5.9

The current study described the variables categorically to comprehensively investigate the feeding and swallowing difficultiesin children with ASD and typically developing children.

Hence, categorical variables measured with the questionnaire included the presence of oral-motor difficulties; the presence of obsessive eating patterns; sensory processing difficulties; the requirement of specific utensils, food presentation and symptoms of dysphagia. The variables investigated are presented in below.

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Variables measured by the Questionnaire

Measured variables	Questions on the screening tool related to variable	The rationale for variables inclusion
Atypical feeding behavior	Q1 Does your child get agitated during mealtime? Q5 Does your child crave more for junk food (liquids/solids)? Q6 Does your child spit the food while chewing? Q8 Does your child ask for food when he/she is hungry?	Children with ASD only exhibit behavioral responses when food given to the child, typically developing children don't show aggressive behavior, not sitting for meal time, throwing the foods, no hunger indication will be showed these are some of the disruptive behavior shown by ASD
Food selectivity and preferences	Q9 Does your child prefer/crave certain tastes? Q5 Does your child have a problem chewing certain types of food? Q4 Does your child crave more for junk food?	It is a common problem for every child on food preference and selectivity, sometimes mother specially the less educated population doesn.t understand the child's preference.
Oral-motor difficulties	Q3 Does your child keep the food in his/her mouth for a longer period of time? Q5 does your child have problem in chewing certain types of food(liquids/solids)?	The oral motor function is related to development of anatomy and physiology over a period of time, this kind of difficulty very really noticed.
Sensory processing difficulties	Q7 Does your child shows over-eating behavior? Q3 Does your child keeps the food in his/her mouth for a longer period of time? Q2 Does your child have a selectivity of certain types of textures for the food? Q10 Does your child overload the food in the mouth?	Sensory processing issue is a common problem in both ASD and typically developing children, sometimes mother required appropriate management.
Dysphasia	Q6 Does your child spit the food while chewing?	This issue is related to food preference and it is commonly noticed in normal children mothers required proper education/ guidance
Obsessive eating pattern	Q7 Does your child shows over-eating behavior?	An obsession eating pattern is based on a child's food choices and tastes.

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Validation results

Five professionals were given for validation out of five, three people responded highly relevant for all the questions have shown below. The question which rated more than 80% as highly relevant were considered as making a screening tool for the study. Only question no: 4, 5, 6 is were rated as quite relevant or somewhat relevant respectively.

Reliability Statistics

Cronbach's Alpha[a]	N of Items
0.889	10

Interpretation:

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

III. RESULT

Swallowing and feeding difficulties reported by parents of ASD and typically developing children were compared by using mean, median, and standard deviations. Descriptive analysis was done, overall, the feeding and swallowing problem was the same for both ASD and TD groups. A study found that many parents struggle with feeding their children, including those with ASD and typically developing children. In a study by Viviers (2020), the ASD population has more feeding difficulties than typically developing children. Parents with developmental needs use flexible parenting styles, making it challenging to apply reasoning and expectations. Culturally Indian children, particularly in rural areas, may have authoritarian parenting styles.

To obtain the feeding difficulties faced by parents of TD Q1-Q10 was assessed and analysis was done using cross table to obtain the frequency of the above objective and chi- square test was used to analyses the level of significance. The summarized results of this objective is shown in table.

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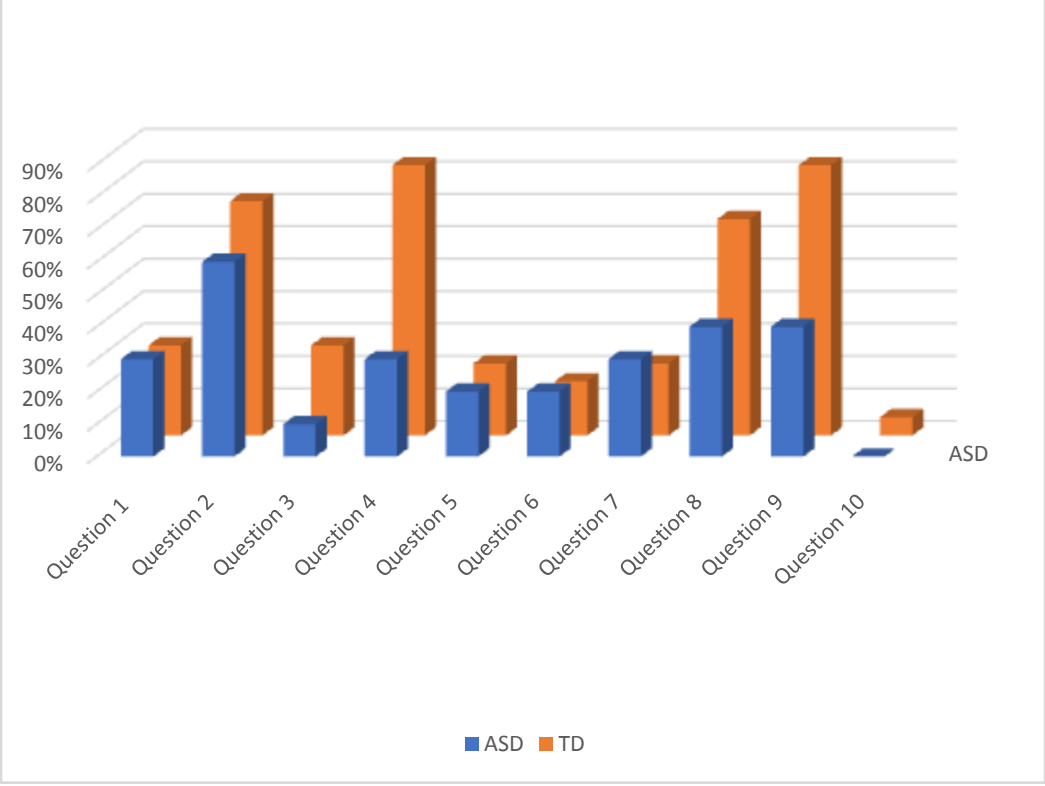
Questions	Responses				Chi-square value
	ASD		TD		
	Yes	No	Yes	No	
1	30.0%	70.0%	27.8%	72.2%	0.677F
2	60.0%	40.0%	72.2%	27.8%	0.507
3	10.0%	90.0%	27.8%	72.2%	0.375F
4	30.0%	70.0%	83.3%	16.7%	1.000F
5	20.0%	80.0%	22.2%	77.8%	0.891
6	20.0%	80.0%	16.7%	83.3%	1.000F
7	30.0%	70.0%	22.2%	77.8%	0.674F
8	40.0%	60.0%	66.7%	33.3%	0.243F
9	40.0%	60.0	83.3%	16.7%	0.19
10	0.0%	100.0%	5.6%	94.4%	1.000F



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Overall the research outcome indicated that there are differences in difficulties noticed in feeding among ASD and TD children. And also, statistically, the result indicated that there is no statistical significance among the groups.

The mean percentage score for the severity of total feeding and swallowing difficulties in children with ASD differed significantly from that of TD children (p= 1.000) for the questions 4, 6,10.

This implies that the overall severity of feeding and swallowing difficulties differed between the two groups.The mean percentage score (p=0.677)for the child getting agitated during meal time in children with ASD also differed significantly from that of TD children, p=0.507severity score in the TD group was higher than the ASD group.

IV. Discussion

"Feeding is considered as a learning process for children with autism. Initially, progress may be slow, but with consistency, sensory support, and professional guidance, improvement is possible in feeding."

Anatomical and physiological development of a child always correlates with age because as the child grows, such biological feeding functions automatically develop, and hence,there will typically be fewer swallowing issues. The issues are generally observed more significantlyamong low socio-economic status families. Mother faces a lot of difficulties in feeding their babies. Feeding problems may cause nutritional insufficiencies in families with children with ASD and their peers. It may be related to the food preference of the child, where a less educated mother is not able to assess the child in an appropriate manner regarding feeding. Sometimes mothers cannot be able to purchase appropriate utensils for the child to feed food and to motivate the child to eat.

Below are some**special notes and practical guidance**that can be shared with **mothers of children with Autism Spectrum Disorder (ASD)** regarding **feeding difficulties and effective feeding techniques**. The below mentioned content below is written in a **parent-friendly and professional tone**, suitable for counselling sessions, handouts, or academic use.

(A) Special Notes for Mother regarding Feeding Difficulties in Children with Autism

1. Common Feeding Difficulties in Autism- Mothers may face several challenges, such as:

- *Food selectivity* (limited food variety, preference for specific colours/textures)
- *Sensory sensitivities* (aversion to smell, taste, texture, temperature)
- *Oral-motor difficulties* (poor chewing, swallowing issues)
- *Rigid routines* (same food, same plate, same place)
- *Behavioural issues* (tantrums, refusal, gagging, spitting)
- *Difficulty sitting for meals*

2. Emotional Support for Mothers

- Reassure the mother that **feeding problems are common in autism**
- Avoid blame, guilt, or comparison with other children
- Encourage **patience, consistency, and gradual progress**
- Celebrate **small achievements** (e.g., touching food, smelling food)

(B) Special Feeding Techniques and Strategies

3. Structured Mealtime Routine

- Fix **regular meal and snack times**
- Keep mealtime duration **20–30 minutes**
- Feed in a **quiet, distraction-free environment**
- Use the **same seating position and utensils**

4. Sensory-Based Feeding Techniques

- Allow the child to **explore food without pressure** (look, touch, smell)
- Introduce new foods alongside **preferred foods**
- Gradually change:
  - Texture (puree → mashed → soft solids)
  - Taste (mild → strong)
  - Temperature (room temperature → warm/cold)

5. Food Chaining Technique

- Start with foods the child already accepts
- Make **small changes** in:
  - Shape
  - Color
  - Brand
  - Preparation method

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📌 *Example:*

- Accepted: plain biscuits
- Next: biscuits with mild flavor
- Next: soft cake with similar taste

6. Visual Supports and Communication

- Use **picture schedules** for mealtime steps
- Show pictures of foods to be eaten
- Give **simple instructions**:
  - "Sit"
  - "Take one bite"
  - "Chew"
- Use **visual rewards** (stars, smiley charts)

7. Positive Reinforcement

- Praise immediately after desired behavior
- Use **non-food rewards**:
  - Verbal praise
  - Stickers
  - Favorite activity after meal
- Avoid punishment or force-feeding

8. Oral-Motor Support (if needed)

- Encourage activities that improve oral strength:
  - Blowing bubbles
  - Whistling
  - Chewing tubes/toys (under supervision)
- Consult a **Speech-Language Pathologist** for:
  - Chewing
  - Swallowing
  - Drooling issues

9. Managing Problem Behaviors

- Stay calm during food refusal
- Do not offer alternative preferred food immediately
- Ignore minor negative behaviors (if safe)
- End meal neutrally if child refuses after set time

🚫 *Avoid:*

- Force-feeding
- Threats or bribes with food
- Long stressful meals

10. Nutritional and Medical Considerations

- Monitor weight, growth, and hydration
- Consult a **dietitian** for nutritional balance
- Rule out:
  - GERD
  - Food allergies
  - Constipation
  - Oral or gastrointestinal discomfort

Hence, based on the outcome of the present study few suggestions are made as under:

1) The mother should be educated regarding the choice of the child's food preferences
2) The mother should be educated to select the appropriate utensils thatare easy to feed with comfortably and appropriate for feeding to overcome any swallowing difficulties.
3) Based on anatomical and physiological development of both ASD &Typically developing children normally face the feeding problem ata certain age.
4) The mother should always be taught and oriented to motivate the child to eat food correctlyand comfortably.

V. Limitation Of The Study

1. The study conducted with a limitedsampleneeds to be studied with larger samples togeneralize the present research outcomes.
2. The studywas conducted in rural areas of Pondicherry zone, hence need to explore the study in the urban population with different Pondicherry zones in socio-economic status.
3. Necessity to conduct the study with educated mothers and higher social-economic statusgroups.
4. In various clinical population this study can be conducted with large samples.

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Corresponding author

Dr Arun Banik

Professor and HOD, Vinayaka Mission's Research Foundation (Deemed to be University), School of Rehabilitation and Behavioral Sciences, Kirumanpakkam,. Pondicherry (U.T.) India