Mealtime Behavioral Patterns in Children with Autism Spectrum Disorder: Insights from a Kerala-based Study

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ABSTRACT: Feeding difficulties among children, particularly those with Autism Spectrum Disorder (ASD), pose significant challenges to their overall health and well-being. This study explores the prevalence and severity of mealtime behavioral problems in children with ASD, aiming to shed light on the association between persons with autism symptoms and feeding issues. Using the Brief Autism Mealtime Behavior Inventory (BAMBI), mealtime behaviors were assessed across three factors: limited variety, food refusal, and features of autism. A cohort of 210 children aged 7-15 years from three zones of Kerala participated in the study. The findings reveal a high prevalence of mealtime behavioral problems among children with ASD, as indicated by elevated BAMBI scores. This research underscores the significance of addressing feeding challenges in individuals with ASD, emphasizing the correlation between the severity of autistic symptoms and atypical eating behaviors. This can be concluded that in people with autism spectrum disorder exhibiting significant feeding challenges, which is closely associated with atypical and disruptive behaviors during meals.

Keywords: Autism Spectrum Disorder, Children, Eating Behaviors, Food selectivity, BAMBI scale.

INTRODUCTION

Autism spectrum disorder (ASD) enclose a range of developmental disorders marked by deficits in social communication and interaction, and repetitive behaviors. It frequently coexists with other illnesses, requires ongoing management. Because individuals with ASD display diverse symptoms and varying levels of severity, from low to high functioning, the term "spectrum" captures this variability. Asperger syndrome, Rett syndrome, autism spectrum disorder, and pervasive developmental disorder-not otherwise specified (PDD-NOS) were collectively named as "autism spectrum disorder" by the American Psychiatric Association (APA, 2013).

Between the ages of three and four, throughout early years, ASD is frequently pronounced. The illness might have a lifetime course, with progressively improving symptoms. Approximately one in every 100 children is impacted by ASD, and over 78 million people globally—regardless of social or cultural background—are affected by it. Males are more likely than females to be afflicted by ASD at a 4:1 ratio (Baio *et al.,* 2018). It is estimated that 1 in 89 Indian children suffer from an ASD, according to Arora *et al.* (2018). Though the precise cause of the illness is still unknown, environmental triggers and inherited factors are thought to be the primary causes of autism. People with autism sometimes have multiple concurrent health conditions. In comparison to their well-being-matched peers, 46–

91% of patients experience digestive problems, making it one of the most common somatic conditions. Even more noticeable differences can be seen in feeding behaviours (Ristori *et al.,* 2019).

One of the prominent difficulties faced by families and people with ASD is feeding and eating difficulties. These challenges include food selectivity, ritualistic behaviors around mealtime, and sensory sensitivities related to taste, texture, and smell. A significant number of children with ASD exhibit extremely fussy eating habits, which results in nutritional deficiencies and other adverse effects. These feeding problems may stem from the core symptoms of ASD, such as restrictive and repetitive behaviors, as well as sensory processing differences. Seventy-five percent of kids with autism spectrum disorders struggle with eating issues, such as selective eating based on temperature, texture, or colour; food presentation rituals; and obsessive eating of specific foods (Hubbard *et al.,* 2014). Indeed, aberrant mealtime behaviors—ranged between 46% to 89%—are commonly observed in children with ASD and are associated with being particular or picky about food, a highly choosy eating pattern, and a reluctance to try unfamiliar foods (Ledford and Gast 2006). When initially describing children with autism, Kanner (1943) observed that eating difficulties appeared to be common, particularly among those with specific dietary preferences or restrictions.

According to Johnson *et al.* (2014) the fundamental symptoms of restrictive and repetitive behavior as well

as variations in sensory perception with regard to taste, smell, and texture may be linked to the occurrence of feeding difficulties in children with ASD. Getting children with ASDs to taste new meals might be especially challenging because they typically refuse to try new things. As a result, extremely restricted diets are common in children with ASDs, increasing the risk of malnutrition. A combination of consuming a restricted range of foods and resisting trying unfamiliar foods is known as selective eating disorder (SED), often referred to as fussy eating or picky eating syndrome. Different studies conducted over the past 20 years have found that individuals with ASD have a serious issue with extremely limited food acceptability, or picky eating, which is linked to poor nutrition and other detrimental impacts (Hyman *et al.,* 2012).

Food selectivity, or the strong preference for narrow range of foods, is the feeding issue associated with children with ASD that is most frequently documented and studied. This word covers a wide range of circumstances and actions, such as avoiding particular meals, having an allergy to particular flavors, colours, consistency, or warmth, and adhering to a meal consisting only of certain food groups. Bandini *et al.* (2017) suggest that food packaging and presentation may potentially have an impact. A narrow dietary range below 8 to 20 meals indicate a significant rigor in food selections and an inadequate reception of novel meals. Picky eating is not just restricted to food rejection and absence of diversity. Dysfunctional mealtime behaviors, like sobbing, screaming, fleeing, acting aggressively, spitting, tossing food, and chewing without swallowing, frequently accompany this behavior. Packing, or holding food in the mouth for extended periods of time, drink avoidance, and fast eating—eating too quickly to allow for proper chewing and swallowing—are less frequently mentioned issues in people with ASD.

When comparing children with ASD to those with other delayed developmental conditions including cerebral palsy and Down syndrome, Field *et al.* (2003) discovered that food selection was more common in ASD children. There exist multiple explanations for why certain feeding issues, specifically related to preferences in food choices, can be more prevalent in the ASD community in contrast to those with other developmental disorders. First, as repetitive behavior patterns are a hallmark of ASD, it is possible that the child's strong preference on consuming a limited array of foods is a symptom of these disorders. Secondly, children with ASD frequently exhibit challenges with copying and conveying, all of which may facilitate or exacerbate these feeding issues. This study aimed to assess mealtime behavioral problems in children diagnosed with ASD.

MATERIALS AND METHODS

The study involved assessing the mealtime habits of school-going children with ASD. Schools hosting Autism centers under the Samagra Siksha Kerala program were selected from three zones in Kerala: South, Central, and North. Purposive sampling was used to select 210 children (aged between 7 and 15 years) with ASD from these centers. The Brief Autism Mealtime Behavior Inventory (BAMBI) was utilized to evaluate eating difficulties (Lazaro *et al.,* 2018). To assess the severity of autism, we collected detailed data from disability board certificates in conjunction with input from special educators. Data were collected through face-to-face interviews with parents and teachers.

A. *Locale of study*
The research was conducted across three geographic zones in Kerala: South, Central, and North. From each of these zones, one district was selected: Thiruvananthapuram, Thrissur, and Kozhikode, respectively.

B. *Selection of the sample*
Children diagnosed with ASD was drawn from Autism centres affiliated with the Samagra Siksha Kerala program across selected districts. The sample comprised 210 school-aged children, both genders (male and female), aged 7-15 years. Purposive sampling was employed to ensure the inclusion of participants meeting specific criteria.

Inclusion criteria necessitated a confirmed ASD diagnosis according to DSM-IV guidelines, accompanied by disability certificates, and proficiency in either Malayalam or English. Exclusion criteria encompassed circumstances impeding completion of an elimination diet, current or recent use of Methylphenidate medication, ongoing behavioural therapy or medication, and irregular school attendance. Additionally, parents and/or caregivers were added in the study to explore food selectivity among individuals with ASD. Data collection started with the consent of parents and/or caregivers. The sample comprised 154 males and 56 females between 7-15 years of age with a mean age of 11.36 ± 2.90.

C. *Tool used for assessment*
The following instrument was utilized for assessment in the present study. The effectiveness of any research activity depends on the employment of suitable and well-designed tools or approaches to elicit information from the sample caregivers.

(i) Brief Autism Mealtime Behavior Inventory (BAMBI). The Brief Autism Mealtime Behavior Inventory (BAMBI) was used to look into children's feeding issues. This standardized tool designed to specifically measure feeding and mealtime problems in kids with ASD is the BAMBI. The 18-item BAMBI parental report questionnaire was created with the purpose of identifying mealtime habits in kids with ASD. Three factors—1) Limited variety: Eight components make up this factor, which assesses how willing the kid is to try different meals and foods sorted according tocooking, consistency , and type; 2) Food refusal: Five elements that make up this factor represent the problematic behaviors that arise when a kid refuses food that is offered to them (such as weeping or spitting it out) and 3) Autism-related features: Self-harming behavior, being preoccupied, and repeated behaviors during mealtimes that are suggestive of ASD behavioral

traits are among the characteristics of the autism factor —define the eighteen items. A Likert scale with 1 denoting behavior that "never" occurs at mealtime and 5 denoting behavior that "always" occurs at mealtime is used to score the BAMBI. Four items that rate favorable mealtime habits employ reversed scoring. The overall score, which can range from 18 to 90, is determined by adding up all the elements. Higher score indicates more mealtime behavioral problems. When the total scores for every question exceeded 34, it was concluded that the feeder presented a concern. Parents should consider the last six months of mealtimes spent with their child. When rating an item, they are to indicate with a "Yes" whether they believe it to be an issue or a "No" if they do not.

Some of the items in this questionnaire deal with behaviors that are disruptive when food is served. These behaviors can be strong behavioral reactions like leaving the table while dining or tossing food or eating tools, or they can be self-harming actions, which are features of autism. Additional inquiries pertain to food selectivity, wherein it is inquired about any actions such as averting the gaze and shutting the lips when undesired food is presented, or declining to consume or even sample a range of meals apart from their preferred options during each meal. Oro-motor issues are also assessed because they can cause children to spit food out of their mouths. Chewing is an intricate oro-motor skill that, if not used correctly, can lead to difficulties with feeding. A preference for textures is inquired about in this questionnaire as well, since preferences are connected to deficiencies in sensory processing. This questionnaire also examines whether there are sensory processing difficulties present. Oral sensory challenges results in food expulsion. Even though dysphagia can manifest at various stages of swallowing, BAMBI is able to detect its presence; nonetheless, the parental replies that the questionnaire collects do not provide a description of the condition. The same is true for the effects of poor oral motor skills, which are only detectable with comprehensive assessment and guidance from medical experts with expertise in the area. This is a very valuable and helpful tool that has been validated for use by various health professionals. It looks at problematic behaviors that are visible in children with ASD and has a lot of potential for evaluating the mealtime issues that children with ASD face. There is currently no alternative tool designed expressly to evaluate feeding issues in children with ASD. The BAMBI is the only one available option.

D. Conduct of study

Prior to administering the Behaviour Autism Mealtime Inventory (BAMBI), comprehensive socio-demographic data regarding the family, nationality, and parental occupation, were collected. Additionally, detailed information pertaining to the child's age, gender, weight, height, food habits, and level of autism severity was obtained from parents. This data collection process was facilitated through structured questionnaires designed specifically for this purpose.

The questionnaire comprised close-ended questions, deemed optimal for quantitative research methodologies. Data collection occurred through face-to-face interviews conducted with both parents and teachers by trained interviewers. Each response provided was meticulously recorded for subsequent analysis.

E. Data analysis

Descriptive statistics involved reporting of continuous variables as mean ± standard deviation (SD), while categorical variables were described in terms of frequency (n) and percentage (%). Comparisons of variables was performed using correlation analysis.

RESULTS AND DISCUSSION

The study underscores the multifaceted nature of eating behaviour development, suggesting that it commences from the prenatal period and is shaped by a myriad of factors including genetic predisposition, familial influences, social environments, and media exposure. Moreover, it highlights how children with ASD exhibit distinct eating behaviors, often influenced by comorbid disorders and sensory sensitivities.

Notably, the study reveals a high prevalence of mealtime behavioural abnormalities among children with ASD, with selective eating emerging as a predominant issue. This result aligns with prior studies emphasizing the challenges ASD individuals face in accepting a varied diet, preferring certain textures and flavors while exhibiting resistance towards unfamiliar foods. Moreover, the correlation between ASD severity and mealtime behaviour scores underscores the interplay between core autistic traits and eating difficulties.

Parents' perspectives provide crucial insights into the impact of mealtime behaviors on familial dynamics and stress levels. The study underscores the significant burden experienced by families of autistic children, attributing it not only to the challenges of feeding but also to its broader consequences on familial relationships and parental stress levels. This underscores the urgent need for effective interventions to alleviate these burdens and improve the overall well-being of affected families.

The findings reveal that among the 210 children included in the study, 73.3% were male and 26.6% were female. Notably, a predominance of male children with ASD was observed across all three selected districts: Thiruvananthapuram (74.2%), Thrissur (74.2%), and Kozhikode (71.4%). Table 1 presents a summary of the gender distribution among children diagnosed with ASD. This study's results underscore the well-established observation that ASD disproportionately affects males, a phenomenon documented in seminal works by Kanner (1943).

Table 2 presents a breakdown of the 210 children with ASD, aged between 7 and 15 years, categorized into three distinct age groups: 7-9 years (49 males and 20 females), 10-12 years (53 males and 17 females), and 13-15 years (52 males and 19 females). The mean age was observed as: 11.6± 2.80475 years (Thiruvananthapuram districts); 10.1± 2.99412 years (Thrissur district) and 11.7± 2.74963 years (Kozhikode district).

Table 3 presents an overview of the severity levels of autism among the respondents. Among the 210 children assessed, 50% exhibited a moderate level of ASD, while 10.4% displayed mild symptoms. Notably, 39.5% of the children were classified as having severe autism.

Table 4 illustrates the dietary preferences of the respondents. Among the surveyed individuals, 89% identified as non-vegetarians, while 6.6% adhered to a Lacto-vegetarian diet, 1.9% followed an ovo-vegetarian regimen, and 2.3% maintained a strictly vegetarian diet. Notably, 10.8% of children with ASD avoided meat and meat products. The decision to adopt a vegetarian diet may be impacted by a number of variables, including personal taste preferences, cultural or religious beliefs, and familial or societal influences. Additionally, individuals may abstain from meat and animal products due to ethical considerations or health-related reasons, including lactose intolerance or dairy allergies.

Table 5 presents the distribution of children with ASD across three districts based on their scores on the BAMBI scale. In Thrissur (TSR), all surveyed children scored within the high range, constituting 100% of the sample. Similarly, in Thiruvananthapuram (TVM), 98.5% of children achieved high scores, while in Kozhikode, 97.1% fell within this category. The mean BAMBI scores were 58.61 ± 4.2 in TSR, 60.18 ± 3.4 in TVM, and 58.71 ± 3.9 in Kozhikode (KKD). Notably, elevated scores on the BAMBI scale point to a higher prevalence of mealtime behavioral problems among the children assessed.

Table 6 illustrates the frequency of various eating behaviours exhibited by children with ASD. Among the observed behaviours, approximately 53.3% of children often expressed distress by crying or screaming during mealtime, while 50% frequently turned away from food. Furthermore, 46.1% avoided being seated at the table until the meal concluded, and 50% habitually expelled or spit out consumed food. Aggressive actions such as hitting, kicking, and scratching others were observed in 40.4% of cases, and self-injurious behaviors were displayed by 44% of the children. Additionally, disruptive behaviors were common, with 43.3% of children often demonstrating them during meals. Notably, 40.9% of children closed their mouths when presented with food, and 45.7% exhibited inflexibility regarding mealtime routines such as timing and seating arrangements. Moreover, 40.4% of children displayed reluctance to try new foods, while 44.7% refused foods requiring extensive chewing. Preferences for repetitive food choices, crunchy textures, specific meal presentations, and preparations were observed in varying proportions. Interestingly, none of the children preferred variety in their meals, and approximately 34.6% exhibited a preference for sweet foods. These findings align with previous studies (Zulkifli *et al.,* 2022), which reported similar atypical mealtime behaviors among children with ASD, ranging from 43.6% to 96%. Additionally, Schreck *et al.* (2004) highlighted significant behavioural challenges associated with dietary preferences and food intake in autistic children.

According to the current study findings, 98.5% of ASD children displayed challenging mealtime behavior the most prevalent category was restricted food variety. Individuals with autism experienced more significant challenges with feeding and mealtime issues, such as food refusal and selectivity, than non-autistics, even among those with intellectual limitations (Fodstad and Matson 2008). The fact that ASDs are now recognized as a public health issue makes this very alarming.

Actually, a variety of feeding problems have been identified in ASD patients, among which, food selectivity was reported as the most common (Vissoker *et al.,* 2015). In the present study selective food behaviors found high frequency, 40% of children were not willing to try new foods, majority were rejected foods they dislike, refused foods require lot of chewing, mostly preferred sweet, crunchy and same food for each meal. And preferences had given to food prepared and presented in a particular way. According to Ledford and Gast (2006), children with ASD demonstrate discriminating acceptance of food or reluctance to consume most or majority of foods, with a percentage ranging from 46% to 89%. The reason for this behavior is unknown.

The way an individual presents with autism, however, varies over the course of their lives. Over time, autism can alter and evolve in the same way that people do in all spheres of functioning. Still, each person's propensity for change is unique; some tend to get less severe while others become more so. Atypical eating behaviors, common in autism, may stem from this characteristic of the condition. Individual differences also occur at different stages of life; for example, certain changes become less severe in early childhood but become more severe in school. Furthermore, the same developmental traits and co-occurring disorders that influence autism presentation at a particular moment also influence how it evolves over time.

Table 7 delineates the specific mealtime behaviors perceived as problematic by parents of children with ASD. Instances of screaming, turning away from food, expelling consumed food, displaying aggression, and disruptive behaviors were unanimously reported as problematic by all parents. Similarly, behaviors such as closing the mouth, disliking new foods, rejecting foods requiring extensive chewing, and displaying preferences for repetitive food choices, crunchy textures, specific meal presentations, and preparations were identified as significant concerns by all parents. However, approximately 34.4% of parents did not perceive difficulties with their child remaining seated at the table until the meal concluded.

The study also found that 98-100% of parents were facing the eating habits of children with ASD as a problem for them. Moreover, food selection behaviors and autism features during mealtime were identified as major problem for most of the parents. Parents' reports of ASD persons with eating disorders have frequently revealed worse daily life abilities and more severe autism symptoms. Although Food preferences influenced by family backgrounds have a limited effect on the food selection of ASD children (Shmaya *et al.,* 2017), families and eating habits are thought to have an influence on one another. In order to steer a child's food intake in a healthy path, parents' actions may be crucial.

However, it appeared that the child's disruptive activities during mealtime had an effect on the child's quality of life and the parent-child bond (Thullen and Bonsall 2017).

Parental stress and food choice are still hotly contested topics, with contradictory findings from the two studies that looked at the relationship. Postorino *et al.* (2015) discovered that the food selective group experienced elevated parental stress levels in contrast to the non-selective group. Particularly for the members of autistic children's family, the issue of eating and feeding presents a significant emotional strain (Hubbard *et al.,* 2014). Stress, resulting from both the eating procedure and its aftermath, is a consequence of feeding the autistic child. The food issues that autistic children face typically last until late childhood if treatment is not received (Suarez *et al.,* 2014). Therefore, increasing our understanding of eating disorders in ASD is important to expand the body of treatment-related evidence and create new opportunities for the best possible intervention approaches.

Table 8 summarizes the results of the Pearson coefficient of correlation analysis, illustrating the connection between mealtime behaviors and the severity level of ASD. The analysis findings showed a statistically significant correlation between mealtime behaviors and the severity of ASD at the 0.01 significance level. Specifically, the findings indicate that as the severity level of ASD increases in children, there is a corresponding increase in mealtime behaviors, with correlation coefficients of 0.893, 0.492, and 0.643 observed in Thiruvananthapuram, Thrissur, and Kozhikode, respectively, among the respondents.

Current study results shows that significant correlation between the mealtime behavior score and ASD severity at the 0.01 level. The connection with a restricted diet and ritualistic or repeated habits has been shown, indicating that eating disorders may be viewed as an outgrowth of the inflexibility and rigidity that characterize individuals with ASD (Ahearn *et al.,* 2001). These results align with previous research study, which have consistently demonstrated a link between elevated scores across measures of autism symptoms (Schreck *et al.,* 2004) as well as Particular characteristics of autism, such as challenges with adaptation to change (Martins *et al.,* 2008) and prohibitive and repetitive behaviors (Suarez *et al.,* 2014) with increased levels of mealtime problems.

Moving forward, the discussion calls for further research into the multifaceted implications of ASD severity, cognitive impairments, age, and sex on eating behaviors. By acquiring a deeper comprehension of these factors, researchers can flourish more effective intervention programe to address the complex challenges associated with eating abnormalities in ASD individuals.

Table 1: Distribution of children with ASD based on their gender.

Distribution of children based on their gender			
District	**Gender**	**Frequency(n)**	**Percentage (%)**
Thiruvananthapuram (n=70)	M	52	74.28
	F	18	25.71
Thrissur(n=70)	M	52	74.28
	F	18	25.71
Kozhikode(n=70)	M	50	71.42
	F	20	28.57
Total(n=210)	M	154	73.33
	F	56	26.66

Table 2: Distribution of children with ASD based on their Age.

Distribution of ASD children based on their Age									
District	Age						**Minimum**	**Maximum**	**Average**	**SD**
	7-9 year		**10-12 year**		**13-15 year**					
	M	**F**	**M**	**F**	**M**	**F**				
Thiruvananthapuram (n=70)	13	5	17	5	22	8	7	15	11.66667	2.80475
Thrissur (n=70)	24	11	15	5	13	2	7	15	10.14285	2.99412
Kozhikode (n=70)	12	4	21	7	17	9	7	15	11.73185	2.74963
Total (n=210)	49	20	53	17	52	19				

Table 3: Severity Level of Autism Spectrum Disorder in samples (n=210).

ASD	Frequency(n)	Percentage (%)
Mild	22	10.4
Moderate	105	50
Severe	83	39.5

Table 4: Food habits of children with ASD (n=210).

Category	Frequency	Percentage (%)
Vegetarian	5	2.3
Ovo- vegetarian	4	1.9
Lacto-vegetarian	14	6.6
Non-vegetarian	187	89.0

Table 5: Distribution of children with ASD according to BAMBI score.

SCORE	TVM(n=70)	TSR(n=70)	KKD(n=70)
High	69(98.5%)	70(100%)	68(97.1%)
Medium	1(1.4%)	0	2(2.85%)
Low	0	0	0
Minimum	45	52	43
Maximum	66	66	63
Mean	58.614286	60.18571	58.7142857
SD	4.294563	3.440142	3.96777913

Table 6: Percentage Distribution of the frequency of Mealtime Behaviors Displayed by Children with ASD During Mealtime (n=210).

Behaviour Exhibited	Never n(%)	Seldom n(%)	Occasionally n(%)	Often n(%)	At almost every meal(%)
Screaming	0	16(7.6)	62(29.5)	112(53.3)	20(9.5)
Turning face	0	5(2.3)	41(19.5)	105(50)	59(28.1)
Siting until finishing food	57(27.1)	97(46.1)	40(19.0)	14(6.6)	2(0.95)
Expelling food	0	3(1.4)	47(22.3)	105(50)	55(26.1)
Aggressive	0	25(11.9)	85(40.4)	85(40.4)	15(7.1)
Seif-injurious	8(3.8)	24(11.4)	79(37.6)	93(44.2)	6(2.8)
Disruptive	9(4.2)	20(9.5)	85(40.4)	91(43.3)	5(2.3)
Closing mouth	6(2.8)	32(15.2)	73(34.7)	86(40.9)	13(6.1)
Flexible meal routines	66(31.4)	96(45.7)	43(20.4)	5(2.3)	0
Trying new foods	82(39.0)	85(40.4)	31(14.7)	10(4.7)	2(0.95)
Won't eat disliked foods	0	3(1.4)	28(13.3)	94(44.7)	85(40.4)
Refusing foods that require lot of chewing	0	4(1.9)	54(25.7)	101(48.1)	51(24.2)
Prefer Same food	0	5(2.3)	41(19.5)	130(61.9)	34(16.1)
Prefer crunchy foods	14(6.6)	31(14.7)	59(28.1)	76(36.1)	30(14.2)
Prefer variety foods	92(43.8)	92(43.8)	26(12.3)	0	0
Prefer foods serving in particular way	0	5(2.3)	56(26.6)	130(61.9)	19(9.0)
Prefer sweet foods	0	25(11.9)	39(18.5)	73(34.7)	73(34.7)
Prefer food prepared in a particular way	1(0.4)	30(14.2)	60(28.5)	106(50.4)	13(6.1)

Table 7: Parental Challenges with Mealtime Behaviors in Children Affected by ASD.

BAMBI Items	Problem Yes Number of parents (%)		
	TVM	TSR	KKD
1	67(95.7)	70(100)	66(94.2)
2	68(97.1)	70(100)	68(97.1)
3	68(97.1)	65(92.8)	46(65.7)
4	67(95.7)	70(100)	61(87.1)
5	68(97.1)	70(100)	66(94.2)
6	68(97.1)	69(98.6)	66(94.2)
7	67(95.7)	70(100)	64(91.4)
8	67(95.7)	70(100)	67(95.7)
9	68(97.1)	61(87.1)	57(81.4)
10	66(94.2)	70(100)	67(95.7)
11	69(98.6)	70(100)	70(100)
12	67(95.7)	70(100)	70(100)
13	68(97.1)	69(98.6)	70(100)
14	67(95.7)	70(100)	70(100)
15	68(97.1)	69(98.6)	66(94.2)
16	68(97.1)	70(100)	55(78.5)
17	67(95.7)	69(98.6)	70(100)
18	67(95.7)	70(100)	70(100)

Table 8: Correlation Between Autism Spectrum Disorder Severity and BAMBI Score.

District				
		Correlation	Mean	SD
Thiruvananthapuram	ASD severity	0.893**	1.17	0.7
	BAMBI score		58.61	4.294
		Correlation	Mean	SD
Thrissur	ASD severity	0.492**	1.342	0.535
	BAMBI score		60.185	3.975
		Correlation	Mean	SD
Kozhikode	ASD severity	0.643**	1.357	0.681
	BAMBI score		58.71	3.967
** correlation is significant at 0.01level				

CONCLUSIONS

In conclusion, feeding and eating challenges pervade the lives of persons with ASD over various age groups and cognitive capabilities. A notable segment of ASD population exhibits problematic eating behaviors, with selective eating tendencies emerging as a prevalent issue. It is evident that ensuring nutritional adequacy is vital for the overall well-being of children with ASD. Mealtime behaviors among children with ASD not only pose concerns for parents but also have the potential to impact familial dynamics and quality of life.

FUTURE SCOPE

Recognizing feeding behaviour abnormalities as potential early markers of ASD warrants further investigation, pointing towards a promising avenue for future research. Moving forward, there is a pressing need for comprehensive investigations into the implications of feeding and mealtime behaviors in individuals with ASD. Such endeavours will deepen our comprehension of the underlying mechanisms beyond feeding problems and help in the creation of more successful intervention plans suited to this population's particular requirements.

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