



## Food Behaviours of the Autistic Children

### KEYWORDS

picky eating, pica, food packing

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**ABSTRACT** *The food behaviours of the autistic children were elicited since they have atypical behaviours and dietary restrictions. Sixty autistic children both boys and girls in the age group of 5 to 16 yrs were assessed. Food selectivity, appetite and picky eating were the predominant factors that altered their food habits. Most of the food behaviours exhibited by these children were influenced by their atypical behaviours. Classic food behaviour of these children impaired their nutritional status and well being.*

### INTRODUCTION

Autism is increasing in epidemic proportions in India the alarming proportions by which it is rising can make India the most populous country in the world having this disorder. Nair, (2007) estimated that there are approximately 1.7 million individuals with autism in India. Children with autism have impaired nutritional and health status which is an essential component of a country's overall human development. A well nourished child has increased alertness and stamina to participate in therapies, educational activities and social interactions and benefits from fewer illnesses and improved coping skills. Optimal nutritional status and feeding skills may increase the level of independence the child is able to achieve. It can improve the child's perception of self and the caregiver's perceptions of their abilities to meet the child's needs. Research has indicated that from a nutritional perspective, it is important to stress the fact that autism, as a behavioural syndrome, is characterized, very frequently, by abnormal behaviour towards food. The potential for behaviour affecting nutrition is at least as great as the potential for nutrition to affect behaviour. When behaviour involves eating disorders, it may lead to situations of clinical or subclinical malnutrition. Research indicates that many children with Autism Spectrum Disorder (ASD) have some type of immune system abnormality and suffer from infections (Shaw, 2002).

The behavioural characteristics of the autistic children are also manifested in their food habits making them vulnerable to nutritional deficiencies and undernutrition. Food behaviours and food habits play a crucial role in the health and well being of these children. Since literature pertaining to the food behaviours and their impact on the nutritional status of the autistic children is scarce, this study was undertaken to examine these crucial factors.

### MATERIALS AND METHODS

#### Selection and Grouping of the Autistic Children

Sixty children identified by DSM IV criteria to be autistic including both boys and girls in the age group of 5 to 16 years were selected for the study in Tamil Nadu, India. Consent was obtained from the school authorities, individual parents and Human Ethical Committee of the University (HEC.2010.15) for the conduct of the study.

#### Development of a schedule

A schedule was specially developed to make a detailed study on the food preferences, food habits, food pattern

and the factors that influence their food intake.

#### Conduct of the study

The parents, caretakers and the guardians were interviewed to ascertain the food behaviours common among these children. To obtain a holistic perspective on this vital issue the children were observed during their meal time by the investigator and additional inputs were obtained from the special educators.

### RESULTS AND DISCUSSION

#### Food and behaviour of the autistic children

The dietary habits of the autistic children reveal that they had certain food beliefs, food allergies and mal-digestion of specific foods. Some of the parents opined that the allergic foods altered their physical well being and aggravated their abnormal behaviour. The allergic responses to food were studied among the samples and about 7 parents reported that their children exhibited allergic response to foods which were mostly physiological. None of the parents were aware about the behavioural changes exhibited by the intake of specific foods. Seroussi, (2002) reported that many autistic children had several food allergies, including milk, wheat, soy, eggs and peanuts.

Majority (90%) of the parents did not believe that the food affected the behaviour of their children a few (10%) parents cited that food definitely affected the behaviour of their child and certain foods such as sweets and confectionary made them more hyperactive and presented with increased abnormal behaviours. About 7 per cent of the parents opined that their child had a certain degree of addiction to milk and that the milk and milk products aggravated their abnormal behaviours. Only thirty seven per cent of the parents opined that there was a relationship between eating and behaviour.

#### Food selectivity

Food selectivity which is a characteristic phenomenon in the autistic children is presented in Table 1. A good appetite in the children is an indicator of good health. In this study appetite of 60 per cent of the children was good for the foods which they liked and in 40 per cent of the children it was good for most of the foods. Some children were unable to express their food likes and dislike since they lacked the communication ability which exhibited as altered food behaviours. Intense food selectivity also compounded this aspect making them vulnerable to

malnutrition. Complete food refusal was not found among the samples studied which is in line with the study by (Williams *et.al.* 2000) in which 73 per cent of the mothers reported that their child had a good appetite for the food that was liked; 19 per cent reported a good appetite for most foods and 6 per cent reported a poor appetite for most foods.

Picky eating was more common in autistic children who tend to refuse most foods and was likely to restrict their diets to a smaller variety of foods. Autism children have restricted interests and insist on sameness. This also holds good for the foods they consumed. This habit of picky eating was found in 83.3 per cent of the children, with various factors affecting their food choices. The greatest nutritional risk would occur not because of food refusal but rather from diets with a limited variety.

Autistic children had certain food addictions, many of them were sensitive to the taste of the food, 76.7 per cent of the children had a strong inclination to the taste of the food. Smell of the food was another factor that led to the acceptance or rejection of the food. The taste phenomenon was not common in all the children; there were individual variations, with some of them having a strong preference for sweet, pungent, spicy or sour foods. Around 44 per cent of the children were in the habit of smelling the food before they ate. Some of the children ate only home made foods prepared in a particular style, while most of the children relished foods bought from restaurants and hotels. The appearance of the food was also a matter of concern for 36.7 per cent of the children who ate the food only when it was presented in a particular form. Similarly 16.7 per cent of the children ate the food only when they were warm and at room temperature and they avoided the foods that were at extremes of temperature. Around 10 per cent of the children were particular about the texture of the food, some children avoided foods that were sticky and gelatinous while a few avoided hard and crispy items. The feel or touch of the food is commonly a sensory factor for individuals with autism which influenced their food selectivity.

#### Food behaviour of autistic children

Specific food behaviours of the autistic children are presented in Figure 1. Which were unique and very much different from that of the normal children. One of the characteristic features of the autistic children was to insist on rituals, such as eating in the same plate or same place. This habit existed among all the children studied. Most of the children were in the habit of swallowing the food without proper mastication, 61.7 per cent of the children refrained from chewing the food and swallowed both hard and soft foods, though they were repeatedly insisted to chew the foods. Thus improper chewing would result in maldigestion and malabsorption. In a study by (Williams *et.al.* 2000), 23 per cent indicated that their child had some problems with chewing.

Feeding the autistic children was laborious in about 23.3 per cent because they exhibited the habit of food packing and held the food in the mouth for a prolonged period of time without chewing and it took 30 – 60 minutes to feed the child a single meal. About 30 per cent of the children were also in the habit of spitting away the food. The foods that were commonly spit out were the vegetables and the hard foods which could lead to nutritional deficiencies and malnutrition.

It was found that 41.7 per cent of the children threw away the food during self feeding process or toppled the foods when they were fed by their care givers. This attitude was persistently present in the children though their mothers adopted certain changes in the cooking methods and made their children eat under the supervision of the teacher.

Pica is a serious eating disorder that can result in serious health problems such as lead poisoning and iron deficiency anaemia. About 35 per cent of the autistic children exhibited this behaviour. Some of the children ate chalk, crayons, rubber or sometimes even inedible things and filth. This is because they were not able to discriminate the edible foods from the non-edible items. Some psychological theories relate pica to behavioural response to overcome stress or an indication that the child has an oral fixation. Mouthing the objects such as toys, coins, keys, pencils etc., was present in 31.7 per cent of the children.

Certain sensory characteristics were strong in the autistic children. It was found that 43.3 per cent of the children smelt the food each time before eating. The acceptance or rejection of the foods was mainly based on the flavour of the food. Taste and smell are both critical for ingestive behaviours and there is a growing literature documenting high rates of restricted and atypical eating in autism (Schreck *et.al.* 2006). They ate comfortably only in certain places, eating outside the home, especially in public places such as hotels and restaurants were very difficult. This behaviour was observed in 45 per cent of the children.

New things were always resisted by the autistic children and this applied for the food as well, 51.7 per cent of the children were unwilling to try new foods. Around 40 per cent of the children were accustomed to the taste and flavour of the foods prepared in specific ways and they refused to eat the food, when it was prepared differently.

**TABLE – 1**  
**FOOD SELECTIVITY OF THE AUTISTIC CHILDREN**

Details		N	%
Appetite	Good for liked foods	36	60
	Good for most foods	24	40
Picky eating	Present	50	83.3
	Absent	10	16.7
Factors affecting food selection	Taste	46	76.7
	Texture	06	10
	Temperature	10	16.7
	Smell	26	43.3
	Appearance	22	36.7

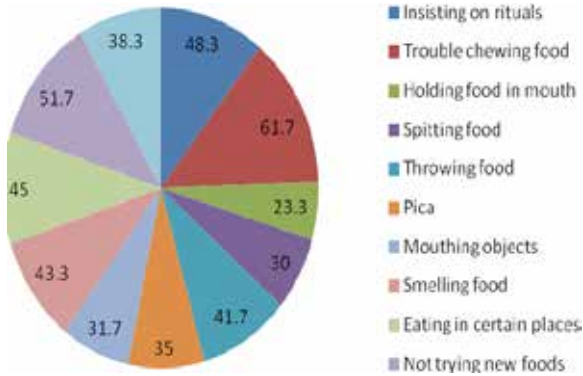


Figure 1: Food Behaviours of the Autistic Children

## CONCLUSIONS

There was a high degree of food selectivity and classic food behaviours were exhibited by these children which would reflect on the nutritional status. Nutrition education emphasizing dietary modification and establishing consistent change in the food habits coupled with improved physical activities is crucial for promoting the nutritional status, health and well being of the autistic children.

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