

DIETARY HABITS OF INTELLECTUALLY DISABLED CHILDREN ATTENDING SPECIAL SCHOOLS

P. Magdalene Virjini

Research Scholar, Food & Nutrition, Mother Teresa Women's University, Kodaikanal

Dr. R. Jagan Mohan

Professor & Head, Department of Food Product Development, IIFPT, Thanjavur

Abstract

Intellectual disability is one of the significant clinical and socially relevant conditions that affect 3 per cent of the total paediatric population. Disabled children are at high risk of developing malnutrition. Malnutrition can be prevented by providing an optimal diet. Food preferences play a pivotal role in the contribution of an optimal diet. This study aims at finding the food preferences and dietary habits of intellectually disabled children. Three hundred and thirty-eight children of age range 9-16 years attending Special School were purposely selected. The demographic profile, dietary habits and eating behaviour were investigated with a well-structured interview schedule of the children from their parents. The results revealed that out of 338 intellectually disabled children majority (30.5%) were in the age group of 13-14 years. The percentage of boys (67.2%) than girls (46.7%) was more. Most of the children were non-vegetarian (89.9%). Among the total population of intellectually disabled children studied, only 10.1 per cent were vegetarian, and the remaining 89.9 per cent were non-vegetarian. Sweets, bakery products, processed, packed and fizzy drinks were the preferred food items. The intellectually disabled children less preferred nuts, fruits and pulses. The frequency of snacking outside and snacking in a day was moderate in 46.7 per cent and 56.2 per cent, respectively. Forty-four per cent of the children's snacking time was found to be evening. Most of the children spent an amount of rupees 20 -25 on snacks. The conclusion drawn from the study is: to bring in a change in the attitude towards the proper selection of foods and their inclusion in the diet, to plan for comprehensive nutrition education programme exclusively, to design for the parents and caretakers of the intellectually disabled children which in turn can maximise the overall health of the disabled children as well as their educational, vocational and social potential paving way to create a radical change in life.

Keywords: *intellectual disability, malnutrition, nutrition.*

Introduction

Intellectual Disability is one of the most severe distressing disabilities and a significant social problem among children in industrialised and developing countries worldwide¹. Historically, it has been defined as a score less than an IQ of 70 that is accompanied by significant deficits in abilities necessary for independent daily functioning. These children face daunting educational, social, and mental health challenges². Disabled children are at high risk of developing malnutrition, partly explaining the growth retardation encountered in such children.³ The deleterious effect of early malnutrition and associated complications on later intellectual development in children in developing countries has been documented⁴. The important factors contributing to malnutrition in intellectually disabled children include insufficient calorie and nutrient intake, excessive nutrient losses, feeding and meal time behaviour problems like food refusal, food sensitivity, meal time aggression, food likes and dislikes, insufficient feeding skills, gross motor self-feeding impairment, food aversion and poor food and feeding knowledge among parents and care takers^{5,6}. It also influences impairment in memory, attention span, deficiency in learning and lower academic

achievement⁷. A better understanding on the incidence of malnutrition in intellectually disabled children is need of the hour, as many children have started getting enrolled in Special Schools. Significant developmental progress has been shown to accompany improved nutritional status. The golden rule of avoiding and preventing the potential and actual detrimental effects of malnutrition is by providing an optimal diet. Food preference is a learned behaviour and play a pivotal role to the contribution of optimal diet. The dietary habits, food consumption pattern and nutritional status of intellectually disabled children is a largely neglected area of knowledge and research in the field of nutrition in India. Therefore, this study aims at finding the dietary habits of the intellectually disabled children to bring in a change in the attitude towards the proper selection of foods and their inclusion in the diet and to plan for comprehensive nutrition education programme exclusively to design for the parents and caretakers of the intellectually disabled children.

Material & Methods

The study was undertaken in Special Schools after a school-based survey to select the Special Schools at

Madurai city. The samples were selected by the purposive random sampling method. Out of the total 356 children available from 8 Special Schools, only 338 children were enrolled for the study based on the cooperation and consent extended by the parents of the intellectually disabled children. The schools were visited frequently by the investigator to establish good rapport among teachers and students. Interactive sessions were organized to motivate the respondents to extend their cooperation for the successful conduct of the study.

A well-structured interview schedule was framed to collect demographic profile of the intellectually disabled children. The investigator carried out a personal interview to procure information on feeding method, meal pattern, food preferences, other dietary habits and eating behaviour of the children from their parents. The data collected were consolidated, tabulated, analysed and interpreted as per the requirement of the study using statistical analysis.

Results & Discussion

Demographic Profile

The dynamics of any human population can be studied with the help of the basic components of demographic structure which help to understand the demographic processes. The basic demographic structure is formed by many factors and one of which is age and gender composition. The age and gender classification of the intellectually disabled children enrolled in the study were collected from the school records.

The age and gender classification of the selected intellectually disabled children is presented in Table 1.

Table 1: Age and Gender Classification of the Selected Intellectually Disabled Children

(n=338)

Variables	Number	Percentage
Age		
9 -10	86	25.5
11- 12	97	28.6
13 -14	103	30.5
15 – 16	52	15.4
Total	338	100
Gender		
Male	227	67.2
Female	111	32.8
Total	338	100

The above table reveals that the age of the children is ranged between 9-16 years. Most of the children were in the category of 13-14 years of age (30.5%). The age range of 28.6 per cent of the children was 11-12 years. Among the study population, there were 25.5 per cent and 15.4 per cent in the age group 9-10 and 15-16 years, respectively. The mean age of the children was 12.5 ± 2.5 years.

The percentage of boys and girls in the study population was 67.2 per cent and 32.8 per cent. It is evident from the result that most of the study population was boys.

Dietary Pattern of the Intellectually Disabled Children

Dietary pattern was investigated to understand the food preference and dietary habits of the intellectually disabled children.

Table 2 gives the dietary pattern of the intellectually disabled children.

Table 2: Dietary Pattern of the Intellectually Disabled Children

Parameters	Vegetarian		Non-Vegetarian		Total (n = 338)	
	No	Percentage	No	Percentage	No	Percentage
Boys	20	8.8%	207	91.2%	227	67.2
Girls	14	12.6%	97	87.4%	111	32.8
Total	34	10.1%	304	89.9%	338	100%

Dietary pattern of the intellectually disabled children was examined, and it was observed that, among the boys 8.8 per cent and 91.2 per cent were following vegetarian and non-vegetarian types of meals, whereas in girls, it was 12.6 per cent and 87.4 per cent. Among the total population of intellectually disabled children studied, only

10.1 per cent were vegetarian, and the remaining 89.9 per cent were non-vegetarian.

Preferred Snacks of the Intellectually Disabled Children

Children's food preferences reflect their exposure to foods at mealtime, snack time and their exposure to food familiarity and advertising.

Preferred snacks of the intellectually disabled children are presented in Table 3.

Table 3: Preferred Snacks of the Intellectually Disabled Children

(n=338)

*Snacks	Frequency	Percentage
Sweets	292	86.4
Savouries	225	66.6
Bakery Products	263	77.8
Soft Drinks	290	85.8
Processed Foods	325	96.2
Fast Foods	273	80.8
Fruits	132	39.1
Nuts & Oilseeds	136	40.2
Pulses & Sprouts	76	22.5

*Multiple responses

The preferred snacks of intellectually disabled children revealed that sweets of all types and forms were liked by 86.4 per cent. Children were even too stubborn to share sweets with others. Sixty-seven per cent of the children consumed savouries as snacks. These children were fond of the crispy and spicy fried variety of savouries like chips. Most of these spicy oil fried savouries caused stomach distention and stomachache due to the lack of digestibility in intellectually disabled children. However, their preference was more than 50 per cent.

Children also expressed their liking for bakery products through their responses as it was observed to be 77.8 per cent. They had an overwhelming fondness for cakes decorated with brightly coloured icings of different shapes, cream biscuits and chocolate-filled biscuits.

Soft drinks and sweetened fizzy drinks were found to be all-time favourites of intellectually disabled children. Research evidence has proved that these drinks were high in high fructose corn syrup and acidic, which might erode the teeth' enamel. However, 85.8 per cent of the children

consumed these products, which was detrimental to the intellectually disabled children's health.

Most of the commercially available processed and packed foods are high in sodium and with added chemicals in the form of additives. These have an alarming effect on the nutritional and health status of intellectually disabled children. As these foods are more attractive in terms of color, shape, and texture, children's preference was more inclined.

The percentage of fast food consumed by intellectually disabled children was 80.8 per cent. One of the most preferred types of fast food was noodles. Mothers also tend to prepare and give according to the demands of the children and for their convenience.

Fruits were preferred only 39.1 per cent of the disabled children. A few expressed the liking for fruits and vegetables in the form of salads. Some preferred fruit juice rather than fresh fruits. Forty per cent of the children preferred nuts and oilseeds. Among the nuts and oilseeds, the commonly consumed nuts and seeds were groundnut and sesame seeds. They were consumed either as roasted nuts or incorporated in the form of some traditional sweets. At the same time, other types of nuts and seeds were rarely consumed by disabled children. Parents and caretakers were unaware of the health benefits of nuts and seeds for intellectually disabled children.

Pulses were consumed by the disabled children in the roasted form like roasted Bengal gram, whereas in the form of sprouts, it was not preferred much among the disabled children. The preference for pulses by the disabled children was only 22.5 per cent. As reported by the mothers, in some cases, pulses were avoided by the children as it caused stomach problems due to indigestion. Mothers and caretakers were unaware of sprouts' benefits in terms of availability of nutrients and improved digestibility.

Snacking Pattern of the Intellectually Disabled Children

Snacking is associated with undesirable health outcomes and dietary patterns since children and adolescents select snacks based on taste rather than nutritional value.

Table 4 presents the snacking Pattern of the Intellectually Disabled Children.

Table 4 Snacking Pattern of the Intellectually Disabled Children

(n=338)

Snacking Pattern	Criteria	Number of Children	Percentage
Frequency of snacking outside	Rarely (1 or 2 days / week)	100	29.6
	Moderately (3 or 4 days / week)	157	46.4
	Very often (5 or 7 days / week)	81	24.0

Frequency of snacking in a day	Rarely (1 – 2 times)	73	21.6
	Moderately (2– 3 times)	190	56.2
	Often (3 – 4 times)	52	15.4
	Very often (more than 5 time)	23	6.8
Time of snacking	Morning	111	32.8
	Afternoon	20	5.9
	Evening	149	44.1
	Night	58	17.2

The above data indicate that the frequency of snacking outside by the intellectually disabled children was rarely 29.6 per cent, followed by moderately 46.4 per cent and very often 24 per cent.

About the frequency of snacking in a day, it was observed to be rarely 21.6 per cent, moderately 56.2 per cent, often 15.4 per cent, and very often 6.8 per cent.

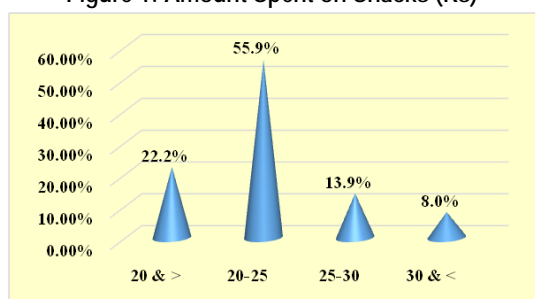
Time of snacking was found to be morning 32.8 per cent. Afternoon, evening, and night time of snacking was observed in 5.69 per cent 44.1 per cent 17.2 per cent respectively.

It could be concluded from the above results that the frequency of snacking outside and frequency of snacking in a day was moderate by most of the intellectually disabled children (46.4% and 56.2%). Most of the snacking time of children was found to be evening (44.1 %). The parents reported in the present study that eating snacks was more after coming from school while watching television or on the way from school in the evening.

Amount Spent on Snacks

Amount spent on snacks is depicted in the Figure 1

Figure 1: Amount Spent on Snacks (Rs)



The data on the amount spent on snacks for the intellectually disabled children revealed that 22.2 per cent of the children spent rupees 20 or less followed by 55.9 per cent rupees 20-25, 13.9 per cent rupees 25-30, and 8 per cent spent a sum of rupees 30 and above. Most of the snacks purchased were processed, packed, and fried foods that were not healthy alternatives, especially for them.

Conclusion

Preventing the potential and actual detrimental effects of malnutrition is by providing an optimal diet. Dietary habits play a pivotal role to the contribution of optimal diet. The study on the dietary habits of the intellectually disabled children revealed that, a change in the attitude towards the proper selection of foods and their inclusion in the diet and plan for comprehensive nutrition education programme exclusively to design for the parents and care takers of the intellectually disabled children can maximize the overall health of the disabled children as well as their educational, vocational and social potential paving way to create a radical change in life.

References

1. Leonard, H., Petterson, B., De Klerk, N., Zubrick, S. R., Glasson, E., Sanders, R., & Bower, C. (2005). Association of socio demographic characteristics of children with intellectual disability in Western Australia. *Social Science & Medicine*, 60(7), 1499-1513. <https://doi.org/10.1016/j.socscimed.2004.08.014>
2. <https://www.ncbi.nlm.nih.gov/books/NBK33287710>.
3. AbdAllah, A.M., El-Sherbeny, S.S.A., Khairy, S. (2007). Nutritional status of mentally disabled children. *Egyptian J Hospital Med*, 9, 604–615.
4. Richardson, S.A., (1984). Consequences of malnutrition for intellectual development. In: Dobbing J, ed. *Scientific Studies in Mental Retardation*. London: Macmillan Press 1984; pp 233-250
5. Kuhn, D.E., Matson, J.L.,(2004). Assessment of feeding and mealtime behaviour problems in persons with mental retardation. *Behaviour Modification*, 28, 638-648.
6. Marais, M.L., Labadarios, D.,(2000). The mentally disabled – a responsibility and a challenge. *SAJ Clin Nutr*; 13,4.
7. Kar, B. R., Rao, S. L., & Chandramouli, B. A. (2008). Cognitive development in children with chronic protein energy malnutrition. *Behavioral and brain functions*. 4, 31. <https://doi.org/10.1186/1744-9081-4-31>