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A STUDY TO ESTIMATE THE NUTRITIONAL STATUS OF PRESCHOOL CHILDREN

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A Study to Estimate the Nutritional Status of Preschool Children

Mohini Panwar

Research Scholar, CMJ University, Shillong, Meghalaya, India

Abstract – This is the first available study in Muzaffarnagar district to examine the nutritional adequacy of foods in the lunch box currently supplied by their mother. It aims to give the knowledge & idea about the quality and the quantity of the foods in the lunch box. The study was a cross-sectional survey carried out in all full day primary schools in Muzaffarnagar District. Lunch boxes samples from each participating schools were collected. The different food group such as cereal product, vegetable, meat and milk product in the lunch box was included to assess the nutritional status of the foods in the lunch box of pre-school children. Different cooking method was also used to assess the nutritional status of lunch boxes of primary school children. This Studies shows that 7% like roasted method to prepare food for lunchbox, 13% like boiling method, 56% like deep frying method whereas 24% like other methods to prepare food for lunchbox.

For the cooking methods of foods in the lunch box, the commonest cooking methods for cereal and vegetable was boiling and steaming. But most of the mother like fried and deep fried cooking method for their child because their child like fried food lunch contribute about one third of daily energy intake for primary school students. If the nutritional value does not meet with the recommended value, it will predispose to childhood obesity. Therefore, appropriate health promotion programmed on healthy lunch box, in particular on the promotion of correct quality& quantity of the foods, should be implemented.

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INTRODUCTION

Lunch contributes around one third of daily energy and nutrient requirement for primary school students. If the nutrition content of the lunch boxes deviates from the dietary recommendations, it may cause adverse effect on student's health. The aim of this study is to give a concept to the public about the quantity and the quality of the foods in school lunch box currently supplied by mother.

As most primary schools in Muzaffarnagar change from half day to full day, it is becoming more likely that students will have lunch at school. It is also clear that the trend of using lunch box catering service will increase as well. The most of the lunch boxes supplied by mother contained lots of high fat foods and was considered to be unhealthy. Unhealthy school lunch has a wide range of potential effects on students' lives since what students eat may affect their growth and various health outcomes, both in their childhood and in adulthood.

The preschool years are characterized as a time of increasing autonomy, expanding language skills, increasing ability to control behavior, and broadening social circumstances, such as attending preschool or staying with friends or relatives (100). Preschool

children continue to expand their gross and fine motor capabilities and by age 4 years, a child can hop, jump on one foot, ride a tricycle or bicycle with training wheels, and throw a ball overhand.

Most children consume the foods eaten by the rest of the family by age 2 to 3 years. Feeding is not as messy because the child can use a fork, spoon, and cup well, although the ability to use a knife to cut or spread foods is not fully developed. The overall rate of growth continues to be relatively slow, with periods of growth "spurts." Consequently, the preschool child has a relatively small appetite with periods of increasing food intake in advance of a growth spurt. Although the preschool child's intake may fluctuate widely from meal to meal and day to day, over a week's time the intake remains relatively stable because preschool children have the ability to self-regulate food intake and to adjust their caloric intake to meet caloric needs (133). The child's increasing autonomy and expression of food preferences, combined with a variable appetite, cause many parents to describe their child as a "picky eater" (100).

More importantly, as students consume about one third of their daily food at school, an unbalanced diet may predispose to childhood obesity, which itself is

associated with a variety of adverse health consequences. Therefore, the 'healthiness' of school lunch box is an important issue that needs to be considered in comprehensive obesity prevention program.

IMPORTANT DETRIMENTAL 'LUNCH BOX'

It is commonly agreed that the criterion of defining a healthy lunch box should include the conditions that it should be prepared by healthier cooking methods, the portion size & nutrient value of vegetable, meat and cereal products should follow the recommended value. However, there is no available criterion on how to define an unhealthy lunch box though the presence of high fat food and inappropriate food portion size was commonly suggested by some studies.

In this study, we arbitrarily define an unhealthy lunch box as the nutritional status of foods was very low & does not meet with the recommended value.

PRESCHOOL NUTRITION

The years between a child's 2nd and 5th birthdays represent a period of rapid social, intellectual and emotional growth. At the same time, overall physical growth is decelerating while motor skills are being fine-tuned. Preschoolers are busy exploring the environment. They have tested their independence and are now ready to learn. Preschoolers have two common preferences. Firstly, they have a preference for routine in daily life. Most children need some structure and routine to their day. Generally, they prefer meals and snacks at regular times, as governed by the family's lifestyle.

Secondly, they have a preference for simplicity. Many children may like simply prepared, mild tasting foods that they can easily identify. They prefer foods they can manage, for example, cut-up vegetables they can eat with their fingers and soups they can drink from a cup. In the preschool years, food takes on more complex meanings. Preschoolers have an association with food of more than eating. Foods have specific meanings determined by a child's associations With them. For example, sweets may mean a reward for good behavior in the supermarket.

Additionally, caregivers should be aware that early impressions associated with various uses of food, affect food-related attitudes and practices that can last throughout life. Food preferences can now be influenced; parents and friends as well as television advertising will affect food consumed.

NUTRITION DURING PRESCHOOL YEARS

How much food is eaten at this age varies from child to child and from day to day and is influenced by growth and activity levels. The following serving sizes and amounts can be used as a guide to feeding 4 – 7 year

old children each day. Some serve sizes are different to those commonly used for adults.

These suggestions are a guide only. Every child is different, and their activity and growth rate changes from day to day. The main focus should be on the introduction of a healthy eating pattern and family meal acceptance rather than on serves.

Suggested sample servings for children aged 4 –7 years (4, 5)

Food group	Serves per day	1 serve
Bread and cereals, rice, pasta and noodles	3 - 4	2 slice of bread OR 1 medium bread roll OR 1 1/3 cup ready to eat cereal OR 1 cup cooked porridge OR 1 cup cooked rice, pasta or noodles
Fruit	2	1 medium piece of fruit OR 2 small pieces of fruit OR 1 cup diced fruit OR ½ cup fruit juice 1 glass of fruit juice per day is enough. Fresh fruit is best but frozen, canned and dried are also good alternatives
Vegetables, legumes	4	½ cup cooked vegetables OR 1 cup salad vegetables OR 1 small potato ½ cup legumes
Meat, fish, poultry, eggs, nuts and legumes	½ - 1	65-100g cooked meat or chicken (2 small chops, ½ cup mince, 2 slices roast meat) OR 80-120g cooked fish OR 1/2 cup legumes OR 40-60g cooked fish OR 2 eggs OR 1/3 cup nuts. For safety reasons never give nuts to children under 5 years of age – always use paste
Dairy Milk, yoghurt, cheese	3	250ml (1 cup) milk OR 250ml (1 cup) custard OR 200g tub yoghurt OR 40g cheese

METHODOLOGY

The study was undertaken with the objective "A study to estimate the nutritional adequacy of lunch boxes of preschool children's & their nutritional status"

Assessment of nutritional status is the first step in the formulation of any public health strategy to combat malnutrition. The children within 4-6 years of age were selected randomly from the identified schools. 150 children from rural and urban areas each constituted the total sample of 300. Three tools were used in the study to assess the nutritional health status-Nutrition Survey, 24-hr recall method, questionnaire cum interview schedule.

Clinical examination is commonly used in survey, since it is relatively simple and do not call for sophisticated equipment. It reveals the anatomical changes due to malnutrition that can be diagnosed by the naked eyes. 24-hr recall method is generally used to obtain a general picture of person's food intake. It is used to elicit an accurate picture of the diet history. In 24-hr recall method, the actual food and drink consumed in the immediate past 24 hours is recorded. Sometimes,

a longer period may be used. The recorded food consumed in the last 24 hours is then converted to the nutrients available in each food item used in preparing it and then compared with the Recommended Dietary Allowances.

Questionnaire is either interviewer administered or self-completed. A detailed questionnaire includes the list of foods and the subject answers as to how often and in what quantity each food is eaten per day, per week and per month. The collected information of the food consumed is then checked with the Recommended Dietary Allowances (RDA by ICMR, 1990). It gives an estimate of the amount and frequency of the various nutrients consumed by the individual.

The data will be obtained from dietary survey, anthropometric measurement; nutrient intake will be analyzed by using mean standard deviation & percentage.

RESULT AND DISCUSSION

There are different full day primary schools in Muzaffarnagar District. All primary school were agreed to take part in the study, among the participating schools, all were subsidized schools.

What type of food would you like to be given in your lunch by your mother?

Type	No. of Respondents	Percentage
Fruit	33	11%
Fried Food	156	52%
Salad	15	5%
Any other	96	32%

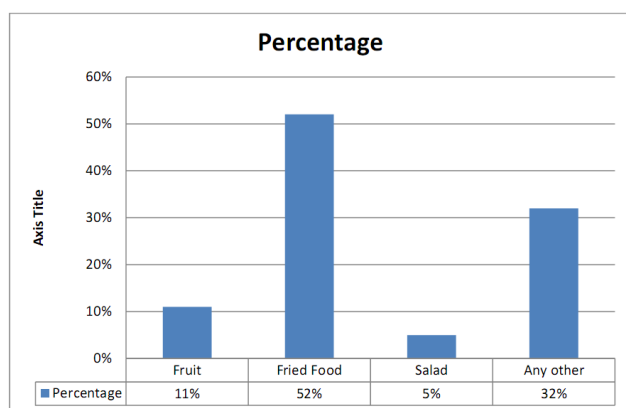


Table shows that 11% of respondents likes fruit, 52% likes fried food, 5% likes salad while 32% like other food.

Do you give fried food in your child's lunchbox?

Response	No. of Respondents	Percentage
Yes	219	73%
No	81	27%

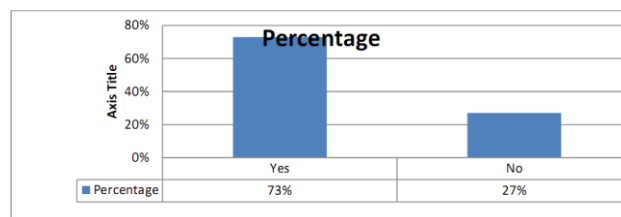


Table shows that 73% of respondents give fried food in their child's lunchbox whereas 27% respondents don't give fried food in their child's lunchbox.

Fried food in the lunch box.

Response	No. of Respondents	Percentage
Parantha	150	66%
Cutlets	50	9%
Finger chips	100	3%
Any others	50	22%

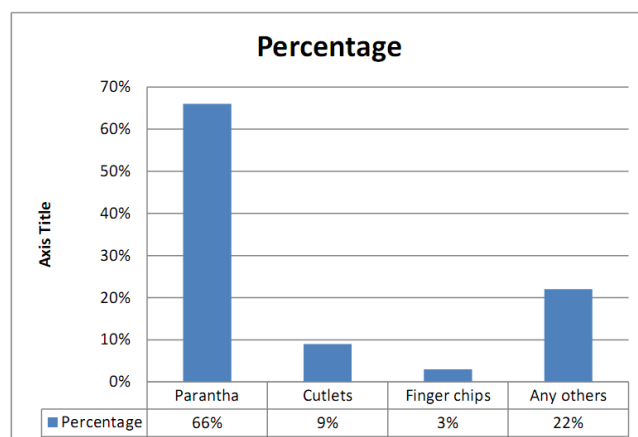


Table shows that 66% respondents give parantha to their child's lunchbox, 9% respondents give cutlets, 3% finger chips whereas 22% give any other food items to their child.

CONCLUSION

The study revealed that the foods in most of the lunch boxes currently supplied by the mothers did not meet with the dietary recommended serving value for primary school students.

There is considerable variation in children's appetite, fluctuating from day to day, depending on their rate of growth and level of physical activity. Children are able to decide how much food they need if allowed to eat to appetite, encourage parents to allow this. Children commonly eat small amounts of foods, frequently, due to their small stomach capacity. Many parents find their children eat better at certain times of the day. Forcing children to 'clean the plate' or giving sweets as rewards may lead to problems of

Overeating later on. That's why it is very necessary to provide nutritious food in their lunch box by their mother to improve their growth and development according to age with respect to anthropometric measurement.

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