

# Food Acceptance and Selection: Activities for Promoting Pro-Vitamin A Foods Among Young Children in Urban Slums

**Kothari G**

*Honorary Project Director  
Child Eye Care Charitable Trust*

**Bhattacharjee L**

*Reader  
Department of Food Science and  
Nutrition, SNDT Women's University*

**Marathe M**

*Research Scholar  
SNDT Women's University  
Mumbai, India*

## Introduction

Nutrition education initiatives aimed at promoting desirable change in vitamin A behaviour have led to varying degrees of success in several Asian countries.<sup>1</sup> However, failures have also occurred because the nutrition education methods used have not led to the desired behaviour change. Nutrition education, in the past, has too often been conducted in an unimaginative way.<sup>2</sup> In order to change eating habits, communicators must learn what motivates food behaviour by mothers and young children and other key household or community members. Understanding the factors that constrain children from following desirable dietary practices will help to find practical and acceptable solutions for improvement of food and dietary behaviour. Dietary and eating habits are largely formed during early childhood, and healthy eating habits acquired at this age will provide sustainable nutrition and dietary benefits. Vegetables and fruits are generally disliked by young children and one of the ways of promoting pro-vitamin A food intake is using a food based approach through effective nutrition communication. The present study made a preliminary attempt to understand the natural choice and spontaneous selection of fruits and vegetables by pre-school children in an urban slum site in the city of Mumbai, Western India.

## Subjects and Methods

### Study Site

The study was a project of the Child Eye Care Charitable Trust, a non-governmental organisation (NGO) in one of the slums in Mumbai. The area where the study sample or subjects resided was typically charac-

terised by overcrowding, poverty and low literacy among the mothers and families. Ignorance, misconceptions about vitamin A foods and infant feeding practices were widespread among mothers of the pre-school children. The study sample included a random sample of eighty pre-school children aged 3 to 5 years and their mothers, who were recruited to participate in a nutrition education programme at the field site of the project. This was done to identify the spontaneous preferences of vegetables and fruits of their young children.

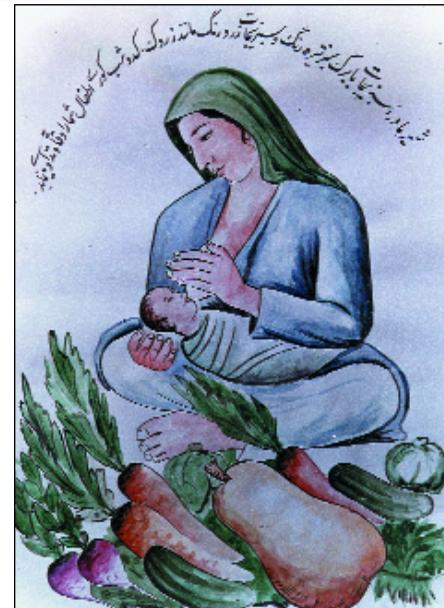
The study was carried out at the community centre in the project's field site, as the children visit with their mothers for health services, growth monitoring and health education and promotion. The facilities are provided as part of the NGO's activities.

### Study Process

As an initial activity in the health education sessions, the children were made to recite poems and rhymes in order to create a lively atmosphere and evoke interest in the activities that followed.

The study was then carried out in two stages.

1. A variety of **locally available vegetables and fruits and those commonly eaten** by the families were displayed in the activity centre on a table. Each child was asked to select any number of fruits and vegetables which he or she liked or wanted. The selection was observed and the order of selection was also noted down. This activity was initially carried out in a sub-sample of 10 children to find out the general trend in food selection. The pro-vitamin A rich vegetables displayed were fresh carrot, tomato, pumpkin, cabbage, dark green leafy vegetables (DGLV) commonly available in Mumbai, such as spinach, fenugreek leaves, radish leaves, colocasia leaves, etc., while fruits included orange and papaya. The commonly consumed vegetables were potato, cauliflower, lady's fingers, brinjal, french beans and fruits were apple, banana and sapota.
2. A variety of **pro-vitamin A fruits and vegetables** was displayed and each child was asked to select any number of fruits and vegetables which they liked or



**Prevention of Vitamin A deficiency.**  
*A poster in Central Asia*

*Photo: M Murtaza Farrahmand*

wanted most. The choice or selection of the items was noted as also was the order of selection. This was undertaken in 80 pre-school children to study the selection of pro-vitamin A foods in detail with a view to planning a dietary improvement action programme strengthening wise food selection and behaviour. The foods displayed included fresh carrot, cabbage, DGLV, tomato, pumpkin, orange and papaya. Mango was not displayed since it was not in season.

Record sheets were used to note the most commonly selected vegetables and fruits, and scores were given to foods which were selected in greatest frequency. Reasons for selection of the foods by the children were also noted.

**Knowledge, attitudes and practice (KAP)** of mothers towards usage of pro-vitamin A vegetables and fruits were also noted as part of the study.

## Results

In the first stage, it was observed that children selected the bright, attractively coloured vegetables and fruits, mainly pro-vitamin A foods. It was noted that yellow-orange fruits (YOF)(21 pick-ups), yellow-orange vegetables (YOV)(12) and DGLV (5) received a higher pick-up than other fruits and vegetables (5).

Among the YOVS, carrot received the highest (10) pick-ups, and 80% selected it as first choice, followed by tomato (6) and pumpkin (5). Orange and papaya received the same pick-ups (6 each). Among other vegetables and fruits, cauliflower and banana received only one pick-up each and apple two, as less preferred choices. Potato is readily available and easily affordable by most families in slums and is acceptable among young children. It also provides the commonly required bulk in their diets. Other vegetables and fruits, that is, lady's fingers, brinjal, french beans and sapota were not selected by the children.

Similar findings were observed in an earlier study by Verghese et al in 1992,<sup>3</sup> where orange, tomato and carrots were selected by most children and the brightness of colour was cited as one of the reasons for selection. A strong preference was observed for the bright coloured pro-vitamin A foods over the more familiar and commonly prepared other vegetables and fruits.

The findings of the second stage activity found that among the pro-vitamin A foods, orange and carrot were selected most often or had highest pick-ups (81.3% and 73.8%), whereas cabbage, DGLV and papaya received lower pick-ups. Pumpkin and tomato received moderate pick-ups. Considering the order of selection, children selected orange (53.8%), carrot (44%) followed by pumpkin (29.7%) as first choices. DGLV and cabbage were selected as the fourth and fifth choices by a greater proportion of children (66.6% and 42.9%). Selection choice of papaya and tomato ranged from first to fifth choice.

## KAP Study of Mothers

Mothers were questioned on their knowledge, attitudes and practices with regard to the intake of pro-vitamin A rich vegetables and fruits. It was found that 23.1% of the children did not like to eat DGLV and a mere 2.3% of the mothers attempted to include these vegetables in different form, acceptable to the child. It was also observed that 13.8% of the mothers in the slum area did not give DGLV during the rainy season due to sanitary and hygiene factors. Other foods not consumed were pumpkin by 54% and papaya by 51%, and reasons stated were, they were 'hot', 'caused illness' and 'not tasty'. Orange was avoided by 15% during illness or at other times due to the belief that it aggravates cough and colds.

## Conclusion

The study helped to provide some preliminary basis for planning innovative dietary intervention activities for young children in the community especially targeted towards addressing vitamin A nutrition, for example, poems based on pro-vitamin A foods: colours and uses, aiming to foster good food habits from an early age. It is likely that children can influence the purchase and selection of foods in the market by picking up/asking for attractive pro-vitamin A foods, thus motivating mothers to purchase the same. The feel of food is also important to young children, and they enjoy foods that can be picked up with the fingers, such as carrot, mango, etc.<sup>4</sup>

Children, therefore, can be given pieces of raw carrot, tomato or fruits like papaya,

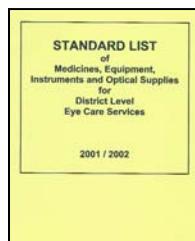
orange and mango when cheaply available in season, and can be educated in a sustained and interesting manner over a period of time, in addition to providing nutrition education to their mothers. Pre-school children are also almost constantly active. Their interest is readily diverted from food but they do enjoy colourful and attractively served meals.<sup>5</sup> Colourful, handy recipes prepared with YOVS and DGLV in combination with other staple ingredients will add colour to the meal and the child can get attracted/motivated to eat. Vegetables prepared in this manner are more acceptable.<sup>6</sup>

Exploiting the natural and attractive colours of pro-vitamin A vegetables and fruits to advantage in nutrition education, and developing suitable and palatable food preparations, can help guide children positively towards wise food selection from an early age.

## References

- 1 Simitasire S, Attig G, Vayasevi A, Dhanamitta S, Tontisirin K (1993). Social marketing vitamin A-rich foods in Thailand – A model nutrition communication process for behaviour change process. INMU Salaya & UNICEF East Asia & Pacific Office, Bangkok, Thailand.
- 2 Latham M C (1997). Human nutrition in the developing world. FAO Food and Nutrition Series No. 29, FAO, Rome.
- 3 Verghese I (1992). A study of vitamin A related food behaviour among socially disadvantaged pre-school children in urban slums. Master's Thesis, SNDT Women's University, Mumbai, India.
- 4 Robinson C H, Lawler M R (1982). Normal and Therapeutic Nutrition. 16<sup>th</sup> edition, Macmillan Publishing Co. Inc., New York.
- 5 Savarirayan S (1986). Child Development. Sheth Publ., Mumbai, India.
- 6 Bhattacharjee L I (1989). A study of dietary factors in the genesis of Vitamin A deficiency. PhD Thesis, SNDT Women's University, Mumbai, India. □

## Standard List of Medicines, Equipment, Instruments and Optical Supplies for District Level Eye Care Services



In response to the need for up-to-date information about appropriate and affordable ophthalmic supplies, the **International Resource Centre of ICEH** has published a new edition of the Standard List of

Medicines, Equipment, Instruments and Optical Supplies (2001) for eye care services in developing countries.

The List, which will be updated annually, is compiled by the **Task Force of the International Agency for the Prevention of Blindness** (a group of international non-governmental organisations concerned with prevention of blindness). There are sections on eye medicines, examination equipment, ophthalmic surgical instruments, eye drop production equipment, teaching materials, spectacles and low vision aids. It includes ordering and price

details as well as a list of suppliers.

**Cost:** Free to eye health workers in developing countries. £5.00 elsewhere. Please make cheques in UK£ or US\$ payable to **University College London**.

**For further information and orders, please contact:**

**Sue Stevens, International Centre for Eye Health, 11-43 Bath Street, London EC1V 9EL, UK. Fax. +44 20 7250 3207; E-mail: [eyeresource@ucl.ac.uk](mailto:eyeresource@ucl.ac.uk)**

☆ ☆ ☆