

INFANT FEEDING PRACTICES IN MALAYSIA

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INTRODUCTION

IT HAS been found that protein-calorie malnutrition is common among children in Malaysia (Chong, 1976; Chen, 1975; Chen, 1977; Rampal, 1977), the prevalence being highest among the Indians, intermediate among the Malays and lowest among the Chinese. In all ethnic groups it is highest among lower income children. Millis (1954, 1956, 1958) has shown that the inadequacy of the weaning diet is an important cause of the slow gain in weight among infants of the poor. Undoubtedly nutrition is the most important single factor influencing growth and this in turn is related to the feeding pattern of infants. In this study the feeding practices of a group of children in Kuala Lumpur and Petaling Jaya are examined.

MATERIALS AND METHODS

One hundred mothers, whose children aged 6 months to 2½ years had been admitted to the Pediatric Unit of the University Hospital, were interviewed regarding the feeding practices of their children. Table I shows the frequency distribution of the children according to their ethnic

Table I

Frequency distribution of children by ethnic group and income

Monthly household income (M\$)	Malay	Chinese	Indian	All ethnic groups
500	11	30	24	65
500 or more	7	19	9	35
All income groups	18	49	33	100

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and income characteristics.

RESULTS

1 Milk Feeding

(1) Breast feeding.

(a) Incidence

Table II shows that only 49% of the mothers breast fed their babies wholly or partially. Breast feeding was most common among the Malays (78%) followed by Indians (55%) and the Chinese (35%). These differences are statistically significant. Further, only 30% of the babies were wholly breast fed at birth.

There is no significant difference in the milk feeding pattern between the upper and lower income groups (where M\$500 or more is defined as upper income group). 58% of working mothers breast fed their babies compared with 46% of housewives. However this difference is not statistically significant.

Table II

Frequency distribution of children by ethnic group and milk feeding pattern

Ethnic group	Breast feeding				Artificial feeding (cow's milk)		Grand total	
	wholly		wholly and partially		No.	%	No.	%
	No.	%	No.	%				
Malay	10	(55.6)	14	(77.8)	4	(22.2)	18	(100.0)
Chinese	8	(16.3)	17	(34.7)	32	(65.3)	49	(100.0)
Indian	12	(36.4)	18	(54.5)	15	(45.5)	33	(100.0)
All ethnic	30	(30.0)	49	(49.0)	51	(51.0)	100	(100.0)

(b) The duration of breast feeding.

Figure 1 gives the cumulative percentages of infant according to the duration of breast feeding. On the whole the duration of breast feeding was short. 50% of the breast fed babies had stopped breast feeding by the age of 3 months. The duration of breast feeding was longest among the

Malays (50% at 6 months of age) and shortest among the Chinese (50% at 1½ months of age). It is interesting to note that there is no significant difference in the duration of breast feeding between working mothers and housewives.

Lower income mothers tended to breast feed longer than upper income mothers so that by the age of 6 months, the proportion still breast feeding were 47% and 10% respectively.

The main reasons given for stopping breast feeding were inadequate lactation (67%), work (15%) and the hospitalization of the infant (5%).

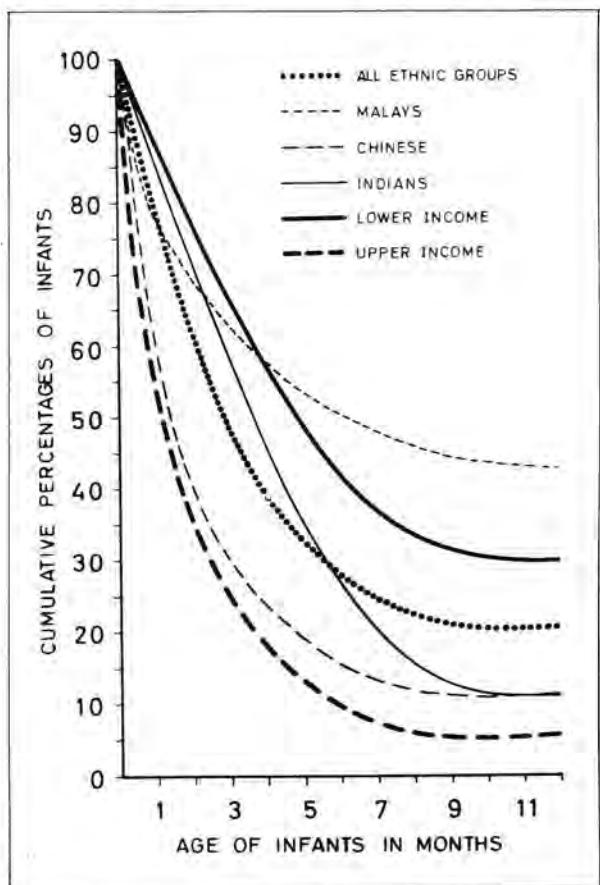


Fig. 1 Cumulative percentage of infants of various ethnic and income groups by the duration of breast feeding.

(2) Artificial feeding.

The chief reasons given for artificial feeding were convenience (26%), mother's illness or weakness (23%) and poor lactation (20%).

The main type of milk used was powdered milk (95%). Only 5% of the mothers fed their babies with sweetened condensed milk.

2 Non Milk Feeding

Figure 2 shows the cumulative percentages of children being introduced to non milk foods.

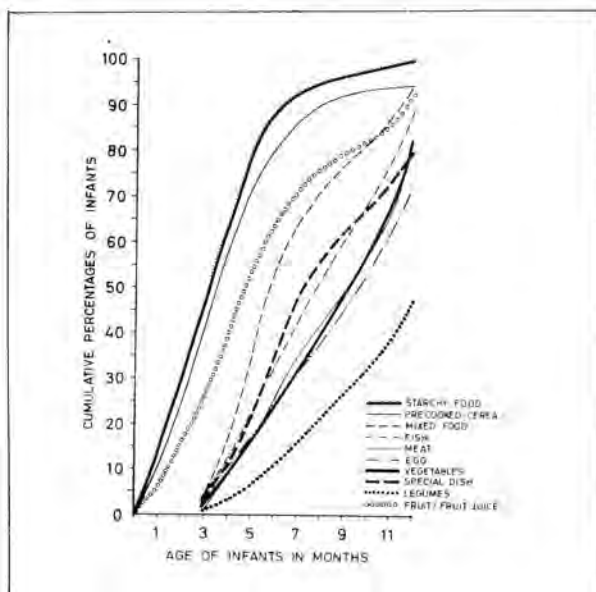


Fig. 2 Cumulative percentages of infants by the initiation of non milk food.

(1) Starchy foods.

This includes foods such as rice, rice powder, commercially prepared precooked cereal, bread, biscuits or rusks. Starchy foods were introduced early, sometimes as early as one week of age and by the age of 3½ months 50% of the infants were receiving starchy foods. However by the age of 9 months, 5% of the infants had still not been given any starchy foods. The Malays tended to start starchy foods earlier than the other ethnic groups and by the age of one month 50% of the Malay infants were receiving starchy foods. The most common first solid food given was precooked cereal. A few children, especially the Chinese, were given rice powder as the first solid.

(2) Fruits.

5% of the infants were given fruit or its juice at one month of age, 50% by 4½ months and 93% by 1 year.

(3) Vegetables

Vegetables were given late to the majority of children. Only 25% were receiving vegetables by the age of 6 months and 48% by the age of 9 months. Legumes were uncommonly used.

(4) Meat, fish and eggs.

Meat, fish and eggs were given late. Only one third of the children were receiving one or more of these items by the age of 6 months. The Indians started fish and meat later than the Malays and the Chinese, while the Chinese started eggs later than the others.

(5) Mixed foods

Mixed foods, which can be defined as a starchy food together with an animal protein other than milk protein, was started by a few as early as 3 months of age but only 50% received mixed foods by 6 months of age, 76% by 9 months and 95% by one year of age. On the whole the Indians and the lower income children tended to start mixed foods later.

However only 80% of the mothers who gave mixed foods to their infants during the first year of life cooked a special dish for the child, the remaining 20% merely gave precooked cereal or biscuits or portions of adult food such as starchy foods with soya sauce, yeast extract or gravy and the occasional fish that the child was able to take. Fewer Indians prepared a special dish for their children compared with the Chinese or the Malays.

On the whole, upper income children tended to receive a more satisfactory weaning diet compared with lower income children.

DISCUSSION

The incidence of breast feeding among the Chinese and the Indians was found to be lower than that reported by Dugdale (1970) for families studied in Kuala Lumpur 10 years ago. However the incidence of breast feeding among the Malays was similar in both the studies.

Compared with rural populations (Teoh, 1975; Balakrishnan, 1977) the incidence of breast feeding was lower in Kuala Lumpur than among rural peoples.

The duration of breast feeding was short especially among the Chinese. The main reason for stopping breast feeding seems to be inadequate lactation. This is not surprising as most of the mothers who breast fed also supplement with bottle feeding right from birth. Milk production depends on the prolactin reflex which is initiated by baby sucking on the breast and the more the baby sucks, the greater is the milk production. In other words, supply equals demand. One of the reasons why many babies were given supplementary feeding right from birth is the fact that babies were put to the breast late after delivery. In a study of babies born in some hospitals in Kuala Lumpur and Petaling Jaya, it was found that most of the babies were put to the breast more than 24 hours after delivery and that babies were given bottle feeding before the initiation of breast feeding. This undermined the mother's confidence in her ability to breast feed, and also gave the impression that bottle feeding was perhaps best for baby since hospitals encouraged such practices. Consequently many mothers breast fed partially resulting in lactation failure in a short time. To ensure successful lactation, mothers should be encouraged to breast feed wholly and babies should be put to the breast as soon as possible (within 6 hours after birth) in a 'rooming-in' type of setting. No bottle feeding should be given in the postnatal wards unless this is absolutely essential.

In contrast to Millis's study in Singapore (1954, 1956, 1958), the Chinese and Indians introduced starchy foods to their babies early in life. However the late introduction of mixed foods, meat, fish, eggs and vegetables was similar to Millis's study in Singapore.

The use of precooked cereal is wide spread among all children. This practice should be discouraged among the lower income children as it is expensive. Table III compares the nutritive values and cost of a home cooked balanced meal with that of a precooked cereal. It can be seen that the precooked cereal costs almost 3 times as much as a home cooked meal. Medical and nursing staff should discourage low income group parents from giving precooked cereal to their children and should instead teach them to prepare a well balanced meal suitable for the infant, using locally available and cheap sources of food. The wide spread practice by medical and nursing staff of

Table III

Comparison of cost of precooked cereal with a well balanced home cook meal

Home cook meal consists of 60 gm raw rice (1 small chinese rice bowl, cooked), 20 pieces of dry small ikan bilis (10 gm raw), 30 gm spinach, 1 slice of papaya and cooking oil (5 gm).

Type of food	Calories	Protein (gm)	Vitamin A (i.u.)	Thiamine (mg)	Riboflavin (mg)	Niacin (mg)	Vitamin C (mg)	Iron (mg)	Calcium (mg)	Cost
Home cooked food	333	10.44	740	0.33	0.44	6.94	56	7.1	361.3	0.21
Precooked cereal	333	8.74	1532	0.49	0.57	7.68	36.77	12.75	563.87	0.72
½ daily requirement of one year old child, weighing 10 Kg.	333	8.33	500	0.17	0.2	2.66	10	2.33	166.66	-

giving free samples of precooked cereal should be discontinued.

The weaning diet of about one third of the children, especially among the Indians and the lower income group, was unsatisfactory and would fail to meet the physiological requirements for rapid growth of infants. This would account for the higher incidence of protein-calorie malnutrition among the Indians and among the lower income children.

To prevent protein-calorie malnutrition breast feeding, among other measures, should be encouraged by all available means. Lactating mothers should be helped to breast feed for as long a period as possible even up to 2 years.

The importance of a transitional diet from milk to adult diet should be stressed to parents. Beginning from the 5th month of life a transitional diet, consisting of a staple diet such as soft rice, legumes and a little animal protein and vegetables should be gradually introduced, at first once a day and gradually increasing to 3 or 4 times a day. Fruits should also be added. During the second year of life suitable protein rich portions from adult meals should be given to the child. However, if the adult food is too "spicy" or tough, then a special dish should be prepared (as in infancy) for the child until the age of 1½ to 2 years when the child eats an adult diet.

To conclude, I would like to quote McArthur

(1962), in relation to her survey of Kampongs, in Perak and Malacca.

"Were toddlers to get a *per capita* share of the family's purchases of animal foods, they could indeed be well on the way to getting the requirement of 1.5 g. of 'reference protein' per Kg. body weight Unfortunately, in most households they did not get this 'per capita share'".

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