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Food habits and malnutrition

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INTRODUCTION

MALNUTRITION is the end-point of a vast number of dietary as well as non-dietary factors which have been diagrammatically outlined by Williams (1962). Basically malnutrition may be due to conditions in the body such as congenital defects, increased needs, malabsorption and other diseases, or it may be due to defective food intake. Defective food intake itself may be due to a series of factors chief among which are poverty and traditional food habits.

In the following paper, only the contribution of tradition and food habits as causative factors of malnutrition will be discussed. This does not mean that other factors are unimportant nor does it imply that tradition and food habits are not related to other factors such as poverty, illiteracy, maldistribution of wealth and general underdevelopment. On the converse, it is against such a background that tradition and food habits must be discussed. In order to provide the perspective from which food habits can be understood, the classification of food in terms of cultural beliefs will be examined.

FOOD CLASSIFICATIONS

Each culture has evolved over the centuries a series of cultural beliefs concerning foods. Not all items are eaten, some foods being classified as non-foods, others as super-foods and yet others as taboo foods.

Non-foods

Not all foods available are eaten by any one culture. All cultures classify potentially edible material into foods and non-foods. Thus while rats, edible toads, water snails and porcupine are foods to the Semai Orang Asli, the Semai will not normally kill or eat those animals, such as wild boar, that they have kept as pets or have reared, in the belief that it is morally wrong to feed and rear an animal and having gained the animal's trust, subsequently deceive it by killing it (Bolton, 1972). On the other hand while wild boar is food to some town folk, rats, toads, water snails and porcupine are non-foods to most towns folk.

Cultural super-foods

In all cultures, one or two foods become elevated to cultural super-foods. Thus among the Iban of Sarawak (McKay, 1970), the Thais, Chinese and Malays of Peninsular Malaysia, rice is considered essential in all the main meals of the day. Because of its importance it may acquire a semi-divine status and its name may become synonymous with "meal". Thus among the Malays rice is not only the staple food but appears at all ceremonies concerned with vital events. For example, among Malays it is used at weddings to bless the bridal couple, at traditional healing ceremonies such as the *main puteri* when it is sprinkled by the *bomoh* (medicine-man), and is fed to the newborn infant soon after birth.

"Heating" and "cooling" foods

Some foods are classified as "heating" while others may be classified as "cooling". Thus among the Chinese, meats, fried foods and roasted nuts are "heating" while vegetables and most fruits are believed to be "cooling". Among the Malays "cooling" foods such as papaya and other fruits

must be scrupulously avoided by women in the puerperium. Women in the puerperium are required to confine themselves to the "heating" foods such as spices and salted fish. The result is often a simple and nutritionally deficient diet of rice, spices, salted fish, coffee and biscuits (Chen, 1973).

Similarly many fruits and vegetables that are a good source of beta-Carotene are avoided by Malay children since it is believed that these "cooling" foods will harm them by causing *cacing halus* (fine worms) to rise into the eyes thus causing night blindness (Chen, 1972).

Medicinal foods

In many cultures, one or more foods are classified as medicinal foods. Among the Chinese crysanthenum flowers in the form of a tea is an example. Among the Malays the *buah jering (Pithecellobium jirings)* has been used as a treatment for diabetes mellitus. Investigations have shown that although it is a hypoglycocymic agent, it also contains an alkaloid which is a hepato-renal toxin (Chen, 1975). In Trengganu the liver of the dog-fish, sheep or chicken has been used by the Malay *bomoh* as a therapy for night blindness due to vitamin A deficiency – a beneficial indigenous practice that can be further exploited in the Applied Nutrition Programme that is being implemented there.

Ceremonial foods

All cultures associate certain foods with specific rituals or ceremonies. Among the Chinese in Malaysia, oranges are always exchanged during the Chinese New Year. Thus the recent suggestion by a member of Parliament that bananas, instead of oranges, should be exchanged during the Chinese New Year, is ridiculous and quite absurd to the Chinese, since oranges, unlike bananas, symbolise a sweet, rounded and complete year. Among the Malays, *pulut* (glutinous rice), stained yellow with tumeric, is ritually used at all important ceremonies such as during marriages, naming of a child, and circumcision.

Such ceremonial foods may be so basic to the ritual that appeals to have the ceremonial food replaced by a cheaper or more nutritious food item will more likely fall on deaf ears. Thus in the Muda Irrigation Scheme, inspite of the introduction of new varieties of high-yielding padi, it has been essential to continue to provide for a small amount of *pulut* to be grown to meet such ceremonial needs, even though yields are relatively low when compared with the new varieties of padi.

Animals may be sacrificed as ritual offerings. Thus among the Kadazan of Sabah, the ceremony of *magambaon,* performed when a child is about four months old, entails the slaughter of a pig which is subsequently cooked and eaten (Bair, 1966).

Prestige foods

Prestige or status foods are recognized by all cultures. The relative status of each food item is often unrelated to its nutritive value. For example, imported fruits such as apples, pears and grapes have a higher prestige value than many equally and more nutritious local foods such as papayas and pineapples. As a result, it is common to see poor families bringing such prestige fruits to a sick member of the family when they can ill-afford to buy basic food items. A nutritionally equivalent quantity of a low prestige vegetable such as *kangkong* would cost only a fraction of the cost of a high prestige food such as cauliflower. The bamboo rat, which is a good source of protein for the deep-jungle Semai, is avoided by the jungle-fringe Semai as a result of the prejudice of sophisticated towns folk who associate rats with sewers. Urban peoples do not realise that the 12 species of forest rat in the Malaysian jungles are as clean as many farm animals eaten by urban people. There should be emphasis on the valuable elements in indigenous diets.

Taboo foods

Some foods are taboo as a result of religious injunctions and beliefs. For example, beef is taboo to the Hindu while pork is taboo to the Muslim. Some other foods may also be taboo not as a result of religious beliefs but as a result of other traditional beliefs. A great variety of dietary taboos are in fact practised by rural Malays and will be described in detail when their food habits are examined. Some Orang Asli will not eat eggs for fear that infertility may result (Williams-Hunt, 1952). The deep jungle Semai will not eat tiger since they believe that tigers sometimes eat man and might thereby contain a human spirit. They will also not normally eat the meat of panther, leopard, and elephant (Bolton, 1972).

Communication foods

Foods are sometimes used as a means of communication. Thus gifts of food may symbolise love or concern. For example, the custom of bringing a gift, *buah tangan,* when one is home-visiting is a well known custom among Malays and Chinese. A gift of fruits when visiting the sick is another well established custom. The Malacca Malay custom of taking home some food from the wedding feast, quite commonly in a "China basket", is a custom observed by the Malays of Meningkabau descent.

Sympathetic magic foods

Some foods are eaten in the belief that sympathetically its purported properties will be thereby

acquired. For example, brain may be eaten in the belief that it will increase the intellect. A cockrel's head may be eaten under the impression that it will cause an individual to be an early riser, while the sexual organs of a bull may be consumed in order to increase virility.

In other words, man has not only learnt to eat some edible materials in order to stay alive but has also in a variety of different ways given symbolic meaning to many of these foods and it is essential for the health worker to bear these in mind if he is to successfully manage the diet of his patient or that of the community he serves.

SIGNIFICANCE OF FOOD CLASSIFICATIONS

Where there is an abundance of a wide variety of foods, the idiosyncrasies of a few absurd food customs will probably be of little significance. In protein-rich countries of the developed world, the classification of a home reared pet as a non-food is not important. On the other hand, the avoidance of fish by the Malay toddler can often lead to malnutrition.

From the point of view of malnutrition, our primary concern is with the most vulnerable groups in Malaysia, namely, pregnant and lactating women, infants and the young toddler. Bearing in mind that potentially edible material may be viewed quite differently by different cultural groups and that food habits are deeply tied to traditional belief systems, the food habits of the major rural peoples of Malaysia will now be examined in relation to malnutrition.

FOOD HABITS

The Pregnant and lactating mother

Although the infant and maternal mortality rates for Malays have fallen over the years, they have always been higher than similar rates for the other ethnic groups. The WHO Expert Committee on Nutrition in Pregnancy and Lactation (1965) notes that "It seems reasonable to conclude that undernutrition and malnutrition among mothers, especially in the developing countries, contribute towards impaired maternal, foetal and infant health and vitality". Undernourished women produce smaller babies which have a higher death rate. Chong *et al.* (1968), investigating the nutritional status of one hundred pregnant mothers from lower-income urban groups, noted that their diets were most deficient in thiamine, iron and riboflavine, and that niacin, ascorbic acid and calcium were also inadequate. The situation among rural pregnant women would be even worse.

After childbirth, dietary restrictions are far more severe than during pregnancy when there are in fact very few restrictions. For example, among rural Malays during the first forty-four days after childbirth, it is believed that the mother's body is especially vulnerable to "cooling" foods (Chen, 1973) such as pineapple, citrus fruits, cucumbers, papayas and most green leafy vegetables which are in effect good sources of caroteneno (Chong and Soh, 1969). In addition, foods that are said to be *bisa-bisa* ("poisonous") such as prawns, catfish, cuttlefish, cockles, *belachan* (anchovy paste) and certain types of fish, as well as foods that are reputed to "carry wind" such as cassava, cassava tips, sweet potatoes, pumpkin, taro, maize and jackfruit are avoided. On the other hand, "heating" foods such as pepper, chillies, smoked or salted fish, eggs, and coffee are advocated.

In practice, the resulting diet, especially in remoter areas of the east coast of Peninsular Malaysia, consists of rice, pepper, chillies, dried or salted fish, and coffee. Such a restricted diet has been found to result in low serum levels for folic-acid, carotene and iron (Wilson *et al.*, 1970). This is not surprising in view of the generally deficient diet even without these taboos (Chen, 1972).

Wilson (1973), compared the nutrient composition of food consumed by a rural Malay woman 28 days after confinement and noted that the intake of calcium, thiamine, riboflavine, vitamin A and ascorbic acid was low and a cause of concern.

Among the deep jungle Semai Orang Asli, the pregnant woman has strict food taboos. She may eat rat, squirrel, porcupine, edible toads, smaller birds, fish and water snails but is not to eat the larger animals including wild pig (Bolton, 1972). After childbirth, the mother normally eats only a gruel for a week, and must eat alone for six weeks. Bolton has also shown that, as a result of food taboos observed by women, their plasma albumin levels are significantly lower than those of men.

Among the Bateq Negritos of Ulu Kelantan, a pregnant woman must not eat meat or fish. After delivery, she must not eat meat, fish or salt for 44 days (Khadizan and Abdul Razak, 1974).

A new Kadazan mother is not allowed to eat any "hanging" fruits or vegetables, particularly blackberries, jackfruit, cucumber and breadfruit, and must avoid all deer meat. These foods are supposed to cause a new mother to have pains, fevers, ulcers or leprosy. Pork is considered "too oily" as is the flesh of duck (Williams, 1969). All these dietary restrictions cannot but help in contributing to malnutrition.

The infant

Breast milk together with bodily stores is all that the infant needs for the first six months of life. Breast milk provides the correct dosage of all nutrients at low cost, protects with anti-infective agents, and ensures emotional support at a time when mental development is rapid and critical (Harfouche, 1970; Jelliffe and Jelliffe, 1971). It has been noted (Kanaaneh, 1972) that malnutrition among breast-fed infants is almost absent whereas 30% of bottle-fed infants have been found to be malnourished. It has also been noted (Plank and Milanesi, 1973) that bottle-feeding is associated with three times as many deaths as those wholly breast-fed.

Traditionally, rural mothers have preferred to breast-feed their children for the first two years of life. Thus McArthur (1962) noted that of the 150 Malay women she knew well all had tried to breast-feed their infants. McKay and Wade (1970) noted that among the Ibans of Sarawak breast-feeding was reported to be universal and prolonged (usually to two years often to three or four, unless a new sibling appears). Among the Kadazan of Sabah, Williams (1969) noted that most children are breast-fed for about two years. Dentan (1968) noted that among the Semai Orang Asli in the east, the child may be breast-fed until it is four or five years old. He also noted that the Semai in the West, who are more open to modern Chinese and Malay influences, breast-feed for about two years.

It is encouraging to note that in Perlis (Teoh, 1975) 92.5% of Malay mothers breast-fed their children, whereas only 58% of Chinese mothers did likewise. Nevertheless, he also noted that only 43.5% of mothers with their first child breast-fed for six months or more whereas 65 – 68% of the multipra did likewise indicating that there was a recent trend to shorten the period of breast-feeding. On the other hand, Coenegracht (1973) noted that 10 out of 67 rural Malay children in Trengganu had never been breast-fed. Jackson (1970) observed that although breast-feeding was usually begun, it was often partially replaced by artificial feeding even before six months and that breast-feeding had been terminated by six months amongst rural Malay infants in Kuala Langat, Selangor. The WHO Expert Committee on Nutrition in Pregnancy and Lactation (1965) noted with regret the trend towards shortening of the duration of lactation and more extensive use of breast milk substitutes in the developing countries and emphasized that the trend must not be encouraged.

The toddler

The toddler is perhaps the most vulnerable of the whole family. He is the subject of a dietary transition when the breast is to be denied to him while he is expected to fully participate in adult meals. During this transition he is faced with several problems.

Not all adult dietary items are available to the toddler. Many are taboo. Among Malays of the west coast, there is a belief that fish and eggs are bad for the toddler since he may develop worms (Chen, 1970a). McArthur notes that vegetables are not given to toddlers until their molars appear, "otherwise they might choke". Many fruits and vegetables which are good sources of carotene are not given to children since these foods are believed to be "cooling".

Among the Orang Asli it is believed that the flesh of animals believed to have strong spirits is the cause of *sawan* (convulsions) if eaten by pregnant women and children. Thus children are allowed to eat the flesh of fish, toads, pigeons, small birds and water snails. However when a large animal is caught (monitor lizard, porcupine, wild pig, deer, larger bird, etc.) normally only the men and elderly women benefit from this protein boost (Bolton, 1972).

Another problem that faces the toddler during this transition phase is that he is often mistaken to be a "mini-adult", and is served small portions of the adult diet which is usually too spicey and too tough for him. He needs his foods sufficiently ground up to be digestable. He also needs to be introduced to spices in a more slow and staggered fashion.

During this transition stage, malnutrition is often enhanced by the fact that the toddler may be allowed to replace many of his meals with snacks and cakes which are generally high in carbohydrates but low in protein and vitamins. McArthur (1962) noted that many Malay school children went to school without breakfast and that virtually all the children spent pocket money on snacks. Rosemary Firth (1966) noted that children ate a great quantity of snacks, and that the Malay parent often realised that he was extravagant in spending money on sweet meats: "If I am hungry, and there is no money, I keep quiet. But Mahamat, he must have his every day." "Every now and again I am presented with a bill for our son." Wilson (1971a) notes that in Trengganu some women makes cakes and carry them from house to house to sell, especially in the morning and that all these snacks provide a considerable amount of food energy.

During illness

Many of these foods, whether they be "cooling" or "carry wind" are eaten with impunity during

good health but are carefully avoided when the individual becomes ill (Chen, 1970b). Thus among Trengganu Malays, Wilson (1971b) notes that peanuts and eggs are *bisa* (poisonous) for people with open sores; cashew nuts should not be eaten if one has scabies; egg plant, chicken or fried bananas are *bisa* for people with stomach troubles; mutton is not good for a cough; soursop is bad for influenza; beef, mutton, mackerel, cucumbers and watermelon are bad for boils; vinegar and soya sauce are bad for asthma; and that fish soya sauce, peanuts, duck and prawn are dangerous for *seduan* (a Malay-defined disease resembling sinus trouble). McKay (1971) records that in Ulu Trengganu, it is believed that *langsat (Lansium domesticum)* together with other sour-tasting fruits are bad for malaria and that *langsat* and fern shoots are bad for worms. Thus many carotene-rich foods that are potentially available to the child are denied to him particularly at times when he most needs it. For example, the child with night-blindness, an early symptom of vitamin A deficiency, is immediately denied all sources of carotene-rich foods when he is in greatest need for such foods.

CONCLUSION

Malnutrition is the end-point of a vast number of factors, chief among which are tradition and food habits. Food habits are strongly influenced by the cultural beliefs that govern the classification of foods. Thus not all potentially edible materials are eaten by any one culture. Some are classified as non-foods, others as cultural super-foods, "heating" and "cooling" foods, medicinal foods, high and low prestige foods and yet others as taboo foods. Based on this, the food habits of the major rural ethnic groups in Malaysia are quite often unsatisfactory from the nutrition point of view in particular the food habits of the vulnerable groups, the pregnant and lactating women, infants, toddlers and the sick.

However, it is vitally important for the health worker concerned with the application of nutrition programmes to be fully aware of these local traditions and food habits if he is to be successful in achieving the necessary change that he wants. To quote David Morley (1973), if one is to succeed in the field of nutrition, one must:

"Go in search of your people,
Love them,
Learn from them,
Plan with them,
Serve them,
Begin with what they know,
Build on what they have."

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