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Nutrition of Malaysians: where are we heading ?

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ABSTRACT

Rapid and marked socioeconomic advancements in Malaysia for the past two decades have brought about significant changes in the lifestyles of communities. These include significant changes in the dietary patterns of Malaysians, eg the increase in consumption of fats and oils and refined carbohydrates and a decreased intake of complex carbohydrates. This resulted in a decline in the proportion of energy from carbohydrates, while an increase in the percentage contribution of fat has been observed. Changes in meal patterns are also evident: more families eat out, busy executives skip meals, the younger generation miss breakfasts and rely too much on fast foods. Many Malaysians have the mistaken belief that the taking of vitamin and mineral supplements can make up for the lack of these nutrients in their daily diets. In addition, communities have become generally more sedentary. All these changes have brought about undesirable effects with significant proportions of the affluent segments of the population being afflicted with various non-communicable diseases associated with overnutrition, namely obesity, hypertension, coronary heart disease and cancers. Nutrition activities and programmes are now being directed to tackle this increasing trend, whilst still attempting to eliminate the undernutrition problems. The ultimate strategy towards achieving a healthy nation is the promotion of a healthy lifestyle, including inculcating a culture of healthy eating. Comprehensive long term programmes, including a series of Healthy Lifestyle (HLS) Programmes have been carried out by the government. Launched in 1991 for six consecutive years, the first phase of the Programme comprised one thematic campaign each year, commencing with coronary heart disease and ending with diabetes mellitus. To further strengthen this long-term strategy, another series of activities to be carried out under the second phase of the HLS programme from 1997 to 2002 was launched within the framework of the National Plan of Action on Nutrition (NPAN) for Malaysia. The implementation of these programmes is, however, a challenge to health and nutrition workers. There is a need to examine the strategies for nutrition education to ensure more effective dissemination of information. The challenge is to determine how best to promote healthy eating within the present

scenerio of rapid urbanisation, “western” dietary pattern influence, a whole barrage of convenience and “health” foods and nutrition misinformation. Malaysia continues to march ahead with its development plans to elevate the nation and its people to an even higher level of socio-economic status. The crucial question is: are we able to arrest the increase in these diet-related chronic diseases ? Or are we heading towards further deterioration in dietary pattern and increase in these diseases ? It will be a difficult and challenging journey ahead, requiring the concerted effort of all in the country. It is hoped that through this conference of sharing experiences with other Asian countries, a better understanding and improved strategies could be arrived at.

Introduction

A period of over 20 years of sustained economic growth and political stability has made Malaysia one of the most buoyant Southeast Asian countries. Such rapid advancements in the socio-economic situation in the country, as well as in many countries in Asia, has resulted in significant changes in the life-styles of communities, including food habits, and food purchasing and consumption patterns. Increasing urbanisation puts further strain on the available health services and other facilities in the cities. There has been increased consumer awareness and sophistication among Malaysians. These changes have resulted in a definite change in the food and nutrition issues facing the communities in Malaysia over the past three decades.

These new dimensions in the nutrition situation pose great challenges to the nutritionists and other health workers in the country. Like many other societies in transition, Malaysia has redefined its priorities in policies and programmes to more effectively tackle both the persistent undernutrition problems as well as the increasing problems associated with overnutrition or the so-called diet-related chronic diseases. Various intervention programmes have been undertaken by the government to overcome these nutritional problems. The ultimate strategy towards achieving a healthy and vibrant nation is the promotion of a healthy lifestyle. The promotion of a healthy lifestyle would certainly include promoting healthy eating habits and maintaining a desirable dietary pattern. Various guidelines have been prepared but the challenges are the effective implementation of these guidelines.

This paper provides an update of the nutrition scene in Malaysia, including trends in food availability in the country, the nutritional status of communities and the policies, programmes and interventions that have been implemented. The discussion focuses on the future of the nutritional status of Malaysians: are we able to arrest the increase in these diet-related chronic diseases ? Or are we heading towards further deterioration in dietary pattern and increase in these diseases ?

Trends in food availability

An analysis of food availability in the past 3 decades has indicated that dietary patterns of Malaysians have changed markedly. Although these data should not be equated with consumption levels, food balance sheet data are useful in indicating probable trends in food consumption patterns. In the absence of regular nationwide food consumption surveys, these data do provide some useful information, within the recognised limitations of such data.

Figure 1 gives some data extracted from food balance sheet data for Malaysia, taken from reports of the Food and Agriculture Organization. Over the period of 36 years, from 1961 to 1997, there was a trend of increasing per capita availability of the major macronutrients calories, fat and protein, particularly the former two nutrients. There was also a steady increase in the proportion of the calories from animal sources from 10% in the 1960's to 20% in the late 1990's. In the case of protein, proportion from animal sources also increased from 30% to almost 60% during the same time period (Figures 2 and 3). The increase in proportion of fat from animal sources was not so dramatic (Figure 4).

The changes in the sources of available calories over the 3 decades are illustrated in Figure 5. A steady decline in calories from complex carbohydrates, notably cereals, can be observed, from 60% in the 1960's to 40% in the late 1990's. However, during the late 1990s, this decline appeared to have stopped. The availability of other fibre-rich foods, such as fruits and vegetables, has not increased over the years. There was a concomitant increase in the proportion of calories from oils and

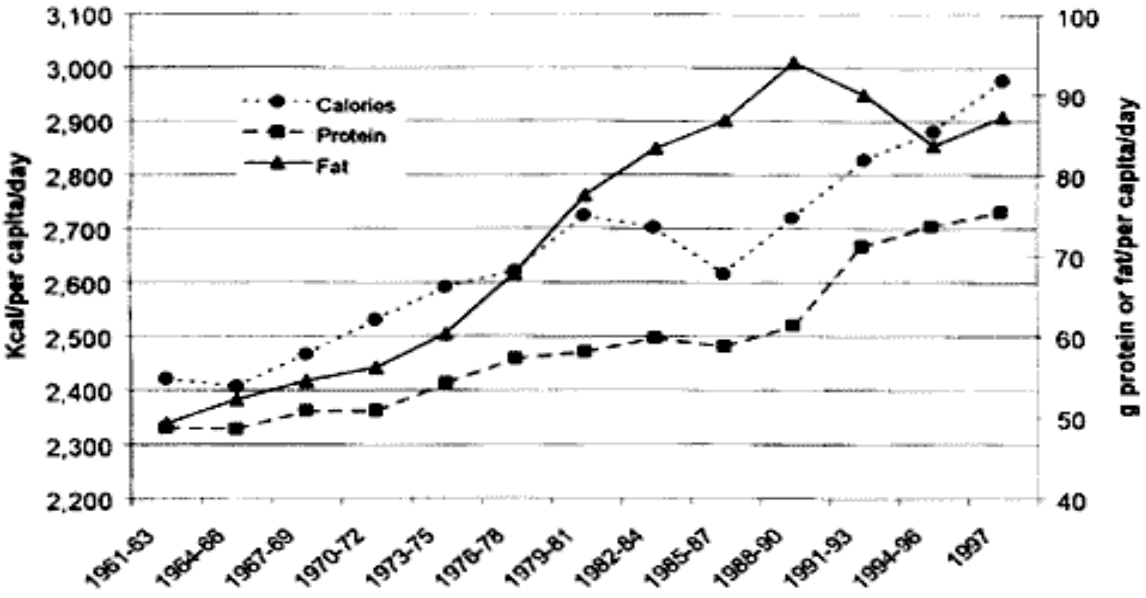

Figure 1. Changes in availability of calories, protein and fat in Malaysia, 1961 to 1997.

Souce: Plotted from data in FAO Food Balance Sheet (1961-1997)

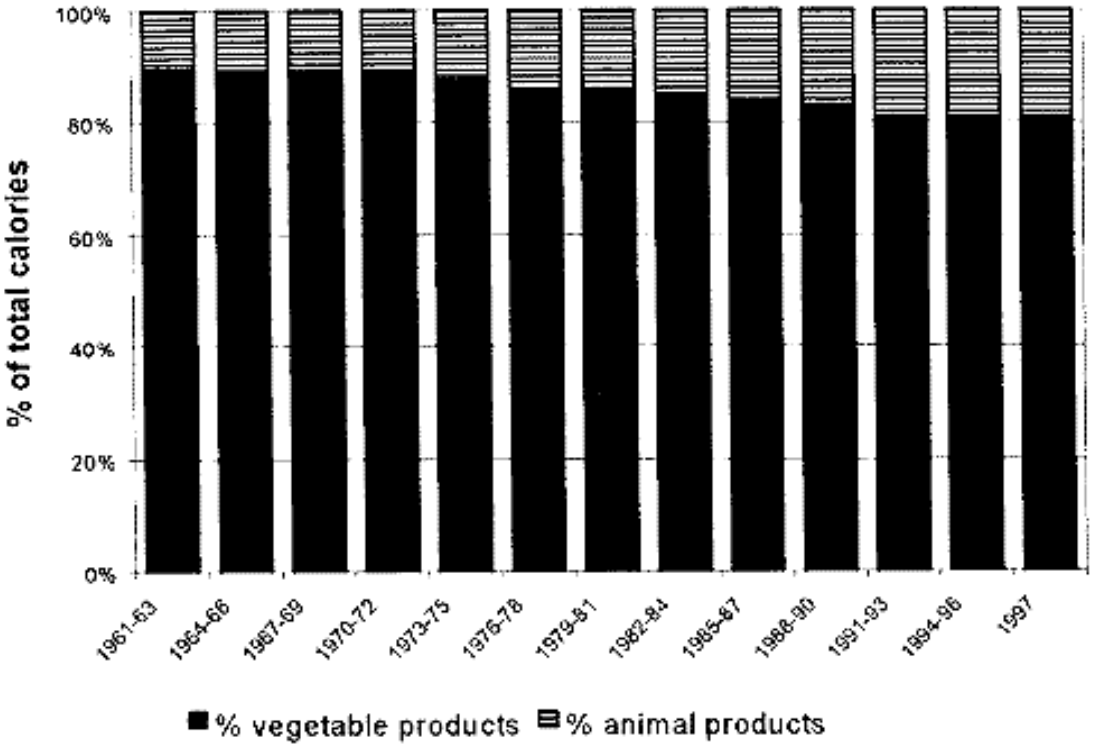

Figure 2. Changes in proportion of vegetable and animal sources of calaries, 1961 to 1997

Source: Plotted from data in FAO Food Balance Sheet (1961-1997)

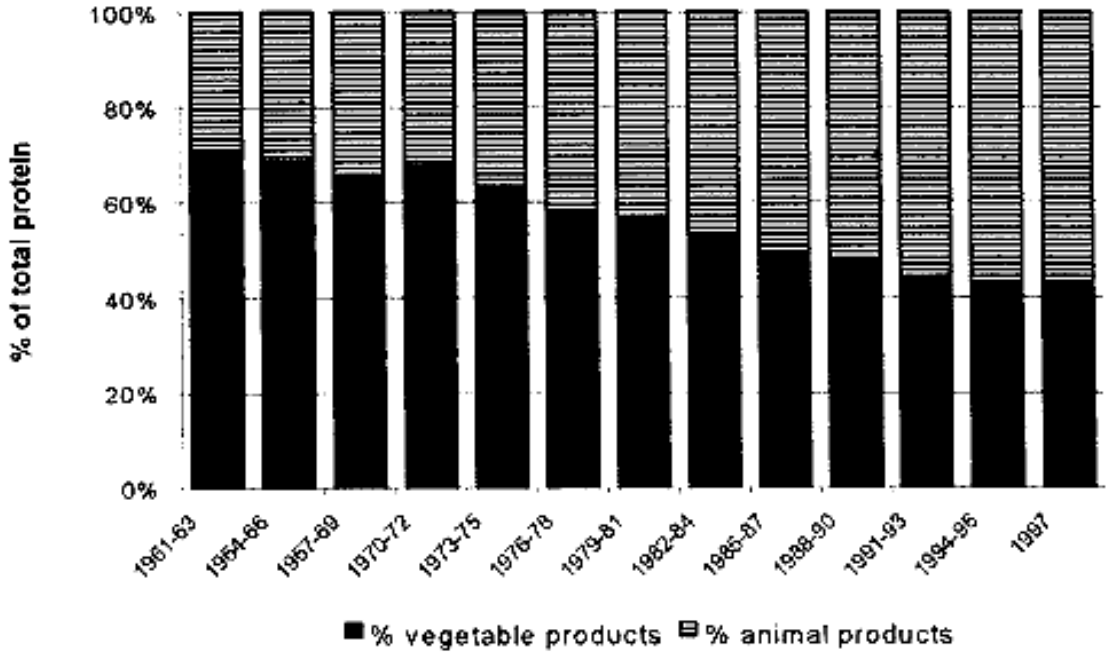

Figure 3. Changes in proportion of vegetable and animal sources of protein, 1961 to 1997

Source: Plotted from data in FAO Food Balance Sheet (1961-1997)

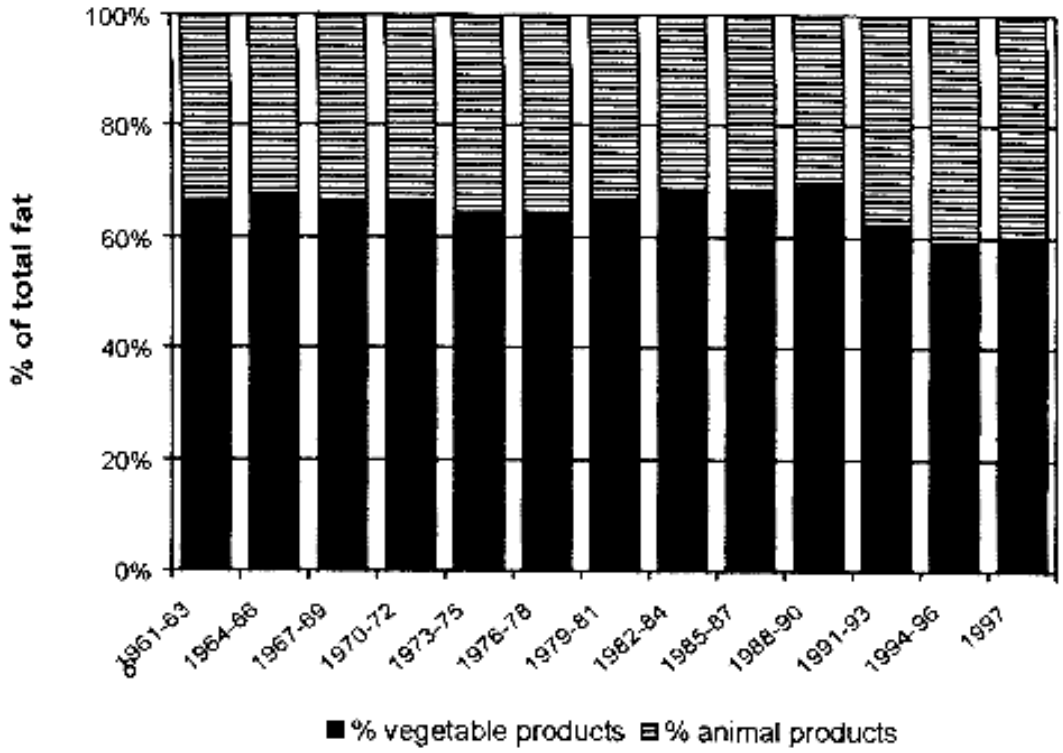

Figure 4. Changes in proportion of vegetable and animal sources of fat, 1961 to 1997

Source: Plotted from data in FAO Food Balance Sheet (1961-1997)

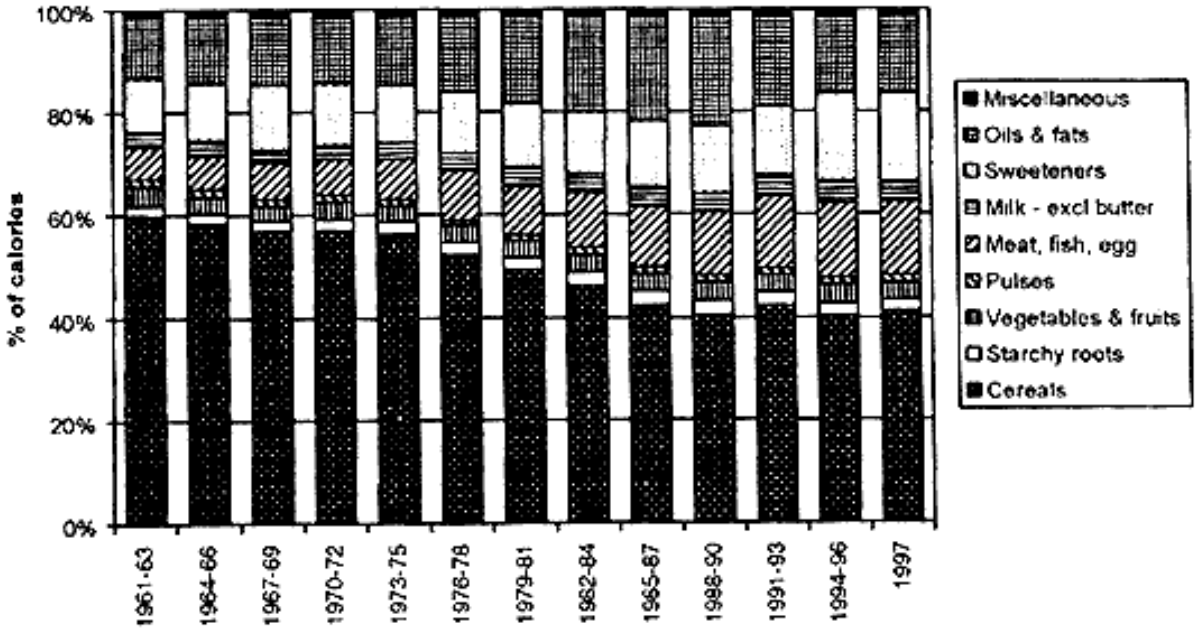

Figure 5. Changes in sources of calories in Malaysia, 1961 to 1997

Source: Plotted from data in FAO Food Balance Sheet (1961-1997)

fats, sugars, and meat, fish and eggs over the last three decades. These increases appeared to have stopped during the late 1990s.

A similar presentation of changes in sources of available protein from 1961 to 1997 is given in Figure 6, changes over the years are seen to be similar to those observed for the available calories. The proportion of protein from cereals and that from meat, fish and egg appeared to have levelled off in the late 1990's.

Analysing the percentage contribution of the three main nutrients carbohydrates, fat and protein to the total available energy over the past three decades, it can be seen that there was a definite decline in the proportion of energy from carbohydrates, from about 72% in the 1960's to about 62% in the late 1990's. At the same time, the percentage contribution of fat was observed to have increased from 18% to 25% over the 3 decades (Figure 7). From the late 1990's, however, the proportion of energy from carbohydrate and fat appeared to have remained unchanged. No major change in the proportion of energy supplied by proteins was observed over the years.

These changes in food availability in Malaysia are consistent with the generally observed patterns for nations with increased national wealth. It has been shown that the main components of the diet tend to be related to a nation's relative affluence (WHO, 1990). As gross national product (GNP) increases, there is a shift towards an "affluent" diet that is characterised by an excess of energy-dense foods rich in fat, particularly animal fats, and a parallel decline in complex carbohydrate foods. Free sugars, particularly sucrose and glucose

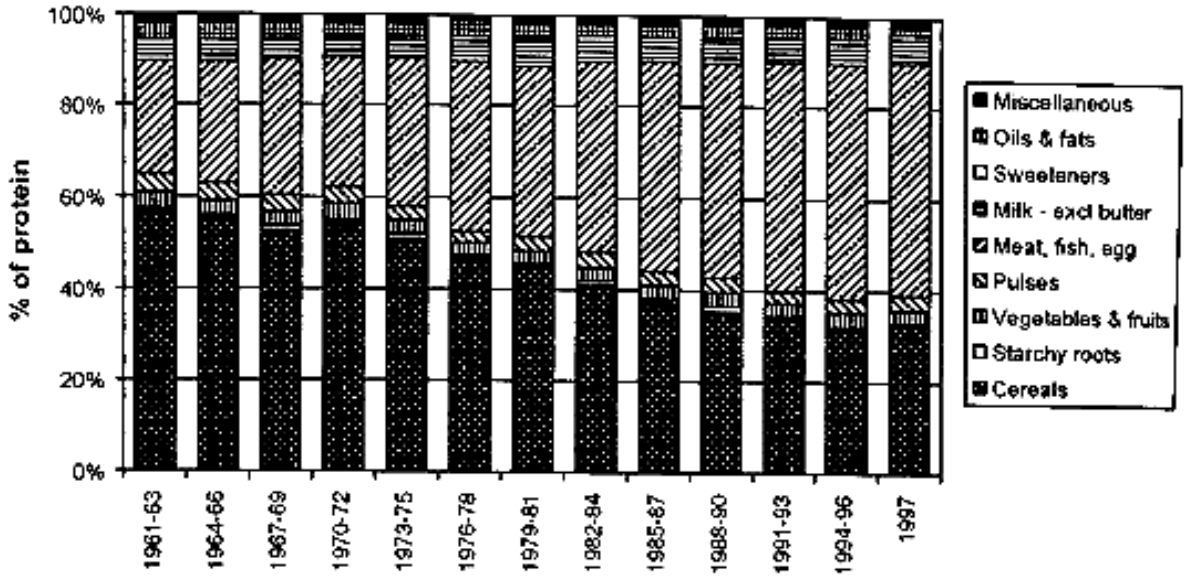

Figure 6. Changes in sources of protein in Malaysia, 1961 to 1997
Source: Plotted from data in FAO Food Balance Sheet (1961–1997)

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Source: Plotted from data in FAO Food Balance Sheet (1961-1997)

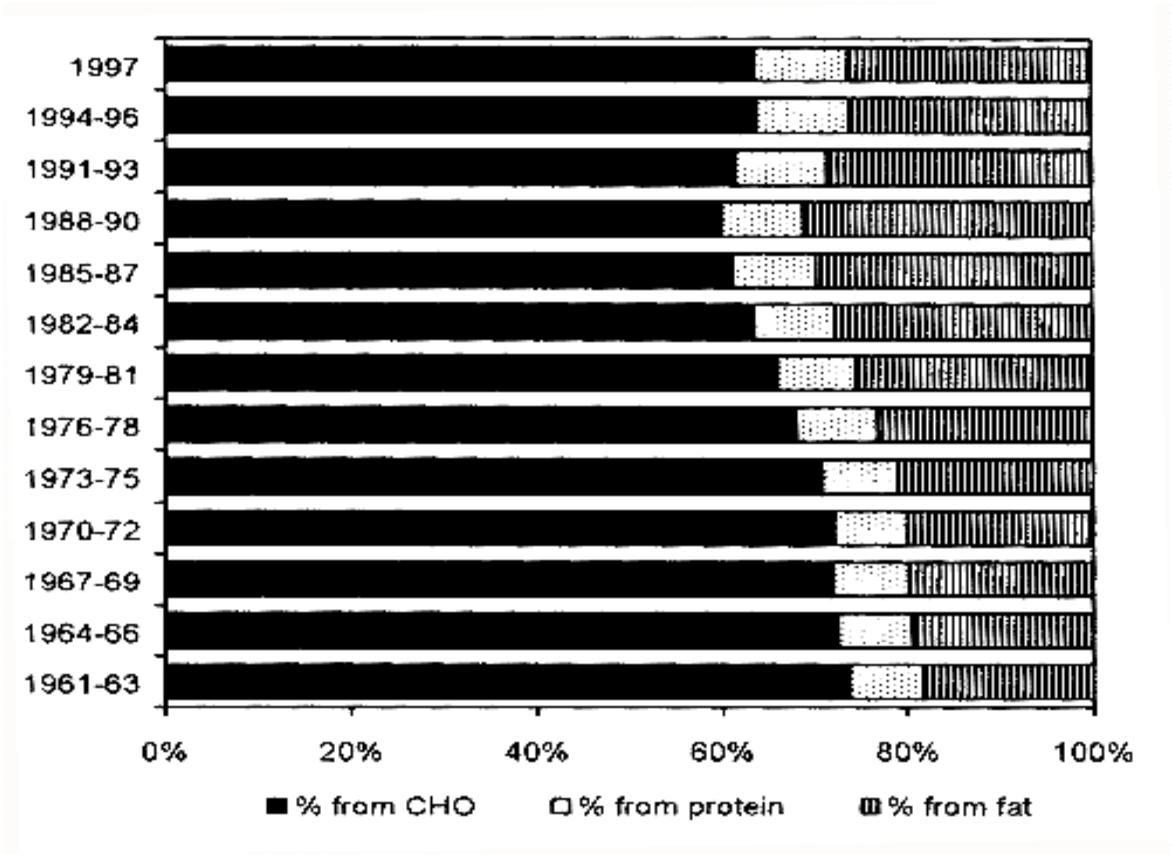

Figure 7. Changes in composition of calories from protein, fat and carbohydrates in Malaysia, between 1961-1997
Source: Plotted from data in FAO Food Balance Sheet (1961-1997)

syrups, also form a much higher proportion of the total dietary carbohydrates in very affluent communities.

The shift towards to the "westernised" dietary pattern has brought about a new nutrition scenario in many developing countries. These countries are now faced with the twin problems of malnutrition, ie undernutrition among some segments of the communities and the problems of obesity and associated disorders in other groups. These disorders, frequently termed the diet-related chronic non-communicable diseases include coronary heart disease, cerebrovascular disease, various cancers, diabetes, dental caries and osteoporosis (FAO/WHO, 1992). Such diseases will pose a great stress on the health services of less affluent and developing communities which can ill afford such expenditures.

Assessment of the nutrition scene

Two main types of data are presented to describe the nature and dimensions of nutritional problems in the country, namely selected mortality rates for various population groups and epidemiological data reported by various investigators.

Improvements in mortality data

Several *mortality rates* have often been used as proxy indicators of the nutritional situation in the country.

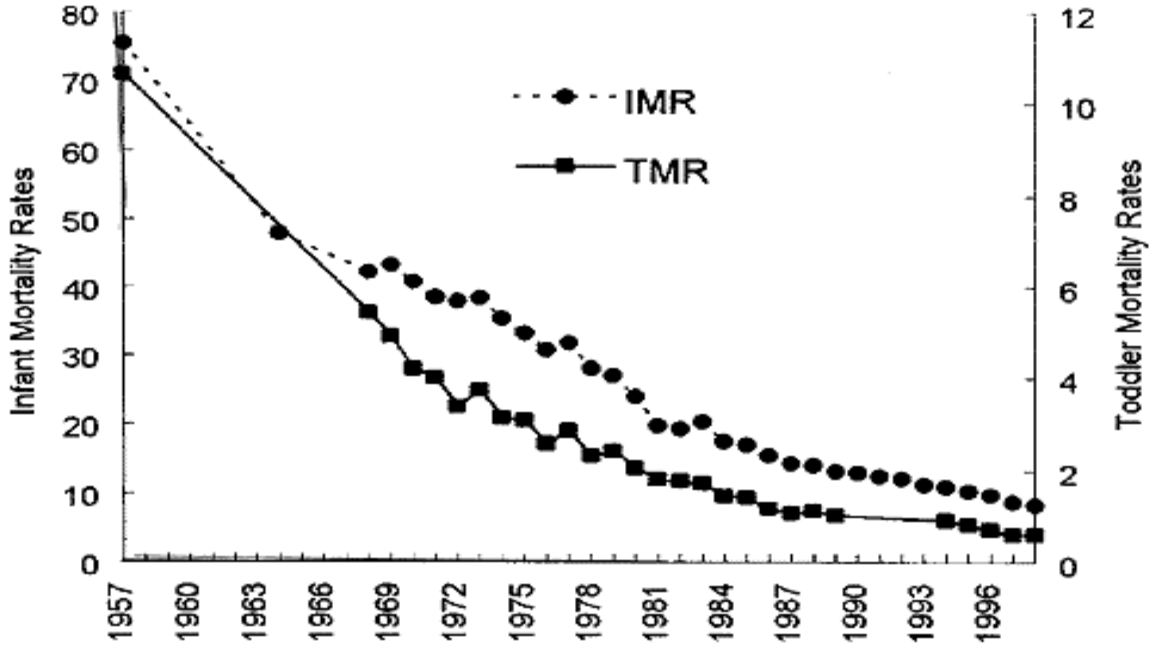

Figure 8. Infant and toddler mortality rates in Peninsular Malaysia, 1957 to 1998
Source: Plotted using data from reports of the Department of Statistics Malaysia.

Some of these data were compiled from various reports of the Department of Statistics to illustrate the improving nutrition situation in Malaysia.

Infant and toddler mortality rates compiled from various sources, are given in Figure 8 to illustrate the health and nutritional status of these vulnerable groups of the population. It can be seen that there has been a dramatic decline in these rates since the country gained Independence in 1957. Infant mortality rates declined from 76 in 1957 to around 8.3 in 1998. Over the same period, toddler (1-4 years) mortality rates dropped from 10.7 to 0.6. Maternal mortality rates have also recorded a decline from 3.20 to 0.20 during the same period.

However, as can be expected, there are considerable variations in the health status of communities in different parts of the country (Tee, 1993). The highest mortality rates were found in those states with less satisfactory health facilities. Within each state, there were again wide variations in mortality rates in the different districts.

It is clear that although these indices do give an indication of the overall nutritional status of the country or state, they do not show the problems existing at the micro level. Thus, while the overall nutrition situation in the country has improved over the years, pockets of malnutrition exist in various parts of the country. An important task is to analyze the characteristics of districts with the highest rates of mortality, morbidity, low birth weight and PEM, and to derive from this analysis information on action required to improve health and

nutrition conditions in the areas of the country and in the population groups at highest risk (Tee and Cavalli-Sforza, 1993).

Nutrient deficiencies

As indicated above, while mortality data do give an indication of the overall nutritional status of the country or state, they do not show the problems existing at the micro level. Thus, while the overall nutrition situation in the country has improved over the years, recent studies have indicated that pockets of malnutrition exist among various rural and urban underprivileged communities. Overt nutritional deficiencies have rarely been encountered, but mild-to-moderate undernutrition affects significant proportions of the population (Tee and Cavalli-Sforza, 1993).

The major nutrient deficiencies in the country are *protein-energy malnutrition* amongst children, *chronic energy deficiency* in adults, and deficiencies of several *micro-nutrients, namely iron, vitamin A and iodine.* Nutrition studies carried out in different parts of the country have shown that frank nutrient deficiencies are not commonly encountered. Nevertheless, moderate undernutrition is widespread especially among rural under-served communities, and affects mainly young children and pregnant women. *Underweight* and *stunting* occur in significant proportions of pre-school and school children. Several studies on *anaemia* have shown that the problem remains of considerable magnitude among children, including adolescent girls, and pregnant women. The main causes of anaemia are considered to be lack of iron, protein and other nutrients in the diet, especially inadequate supplementary feeding and poor weaning practices among children.

The importance of the problem of *vitamin A deficiency* has clearly been reduced over the years. No precise estimates of the magnitude of the problem are presently available. It is believed that there are probably very few cases of clinically manifest deficiency although the extent of subclinical deficiency is not clear. Low levels of iodine in water and salt and low consumption of sea foods are considered the main determinants of *endemic goitre* in the country. It is a problem of considerable magnitude in Sarawak and Sabah, whereas in Peninsular Malaysia, it is considered of much less severity. A nationwide survey among school children was recently carried out and and results to be obtained will be useful in guiding programmes and activities.

Non-communicable diseases related to lifestyle

As a result of the rapid pace in socio-economic development and increased affluence in Malaysia, there has been a definite change in the nutritional problems in the country. The population is now faced with the other facet of the malnutrition problem, namely chronic diseases associated with excessive consumption of various nutrients (e.g. fat) on the one hand and low levels of intake of other nutrients (e.g. complex carbohydrates and fibre) on the other, such as hypertension, coronary heart disease and certain types of cancers, as evident from mortality data and

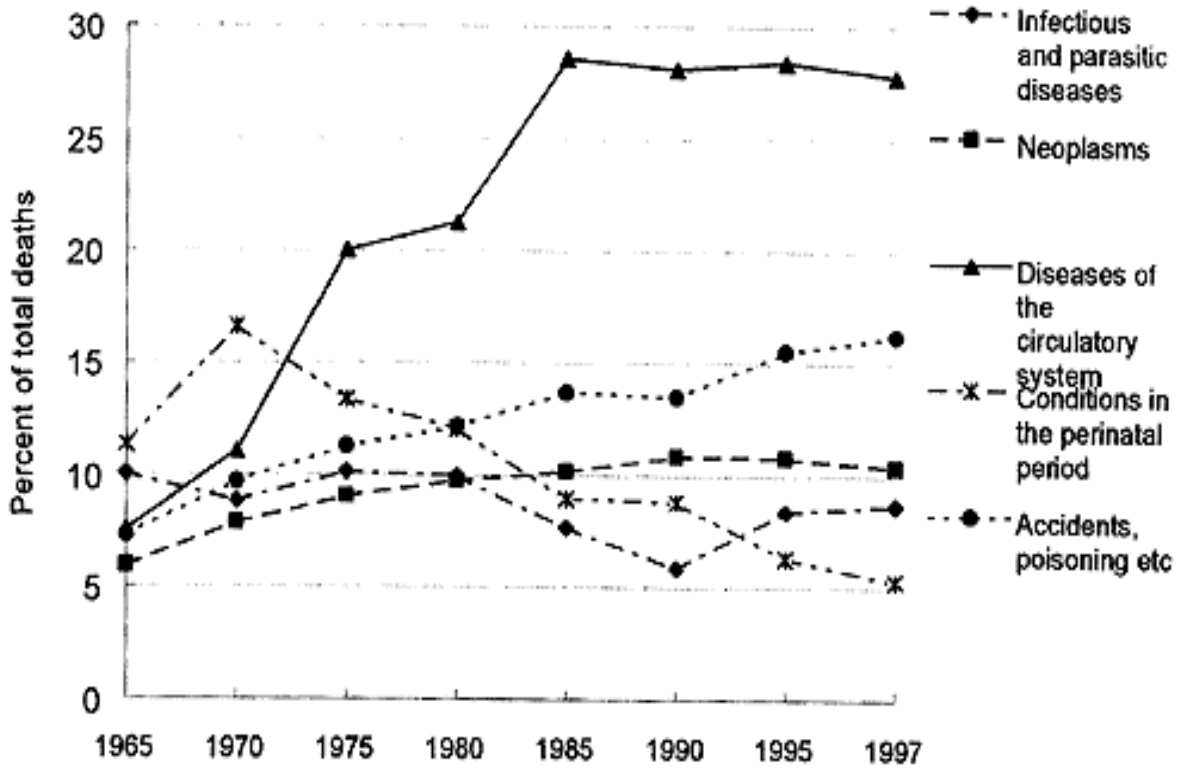

Figure 9. Leading causes of medically certified and inspected deaths, 1965 to 1997
Source: Plotted using data from reports of the Department of Statistics Malaysia

epidemiologic data.

Mortality data for Malaysia have shown that deaths due to diseases of the circulatory system and neoplasms have been on the rise since the 1960's (Figure 9). On the other hand, deaths due to infectious and parasitic diseases, and conditions in the perinatal period reduced in number, reflecting the improved health care facilities in the country over the past three decades. Within the category of "diseases of the circulatory system" the two main causes of death are ischaemic heart disease, cerebrovascular disease and acute myocardial infarction. Since medically certified and inspected deaths amounted to only slightly over 45% all reported deaths in Malaysia in 1997, the data should be used with caution.

Examination of the official statistics of medically certified and inspected mortality in Malaysia for 1965, 1975, 1985 and 1997 shows significant changes in the ranking of causes of death in the country over the four time periods (Table 1). Since 1975, for 22 years, diseases of the circulatory system has topped the list of ten leading causes of death in the country. For the past 12 years, ie since 1985, ranking third in the list is deaths due to neoplasms, and the two major cancer sites are (a) the digestive organs and peritoneum, and (b) respiratory and intrathoracic

Table 1. Ranking of causes of medically certified and inspected deaths in Malaysia, 1965-1997

Causes of death	1997		1985		1975		1965	
	% total	Ranking	% total	Ranking	% total	Ranking	% total	Ranking
Diseases of the circulatory system	27.8	1	28.5	1	20.0	1	7.5	5
Accidents, poisoning & violence	16.2	2	13.7	2	11.3	4	7.3	6
Neoplasms	10.4	3	10.2	3	9.1	6	5.9	9
Diseases of the respiratory system	10.0	4	3.8	8	6.4	8	6.7	7
Infectious and parasitic diseases	8.7	5	7.6	7	10.1	5	10.0	4
Symp. signs & ill-defined conditions	6.2	6	7.9	6	12.3	3	26.6	1
Conditions of perinatal period	5.3	7	8.9	4	13.3	2	11.3	2
Diseases of the digestive system	4.1	8	1.5	12	2.2	10	6.3	8
All other diseases	-	-	8.8	5	7.0	7	10.1	3

Source: Tabulated from reports of the Department of Statistics Malaysia

organs. These two categories together constitute close to 40% of all medically certified deaths. The increased ranking of these two conditions over the years is evident from the table.

Studies into these diet-related chronic diseases are relatively recent undertakings in the country, commencing in the 1960's. Several epidemiological studies on risk factors of coronary heart disease have shown that hypercholesterolemia was a problem amongst the more affluent segments of the population whereas the rural population have lower levels of serum cholesterol. The aborigines were reported to have the lowest levels of serum cholesterol of about 150 mg/dl, whereas levels of 180-200 mg/dl have been reported for the rural communities. Urban Malaysians were found to have the highest serum cholesterol levels of 210-230 mg/dl. The prevalence of hyperlipidemia amongst this group is almost 30% (Table 2).

The prevalence of several other risk factors such as hypertension, high blood glucose and smoking among is also a cause for concern. From the nationwide Second National Health and Morbidity Survey conducted by the Ministry of Health in 1996 on 22,984 subjects greater than 30 years of age, the prevalence of total hypertension was 29.9% (self-reported, 14.0% and undiagnosed, 15.9%). Diabetes mellitus was reported in 8.3% of the subjects. The prevalence of current smokers (n=32,991, >18 years of age) was 24.8% (Ministry of Health, 1997a).

The prevalence of obesity, an important risk factor in CHD, has been studied for various population

Table 2. Blood cholesterol levels amongst various adult population groups

Population group	Reference	Mean (mg/dl)	% with high cholesterol
Orang Asli - deep jungle (n=51)	Burns-Cox *et al.* (1972)	130	-
Orang Asli - fringe jungle (n=22)	Burns-Cox *et al.* (1972)	158	-
Orang Asli - deep jungle (n=49)	Chong & Pang (1978)	142	-
Orang Asli - fringe jungle (n=40)	Chong & Pang (1978)	150	-
Orang Asli - peri-urban (n=69)	Chong & Pang (1978)	172	-
Soldiers (n=158)	Chong *et al.* (1982)	199	6
Rural (n=121)	ICNND (1964)	180	-
Rural males (n=246)	Chong *et al.* (1984)	175	3
Rural females (n=530)	Chong *et al.* (1984)	186	3
Rural males (n=190)	Ng, Tee & Azriman (1995)	199	15
Rural females (n=237)	Ng, Tee & Azriman (1995)	204	22
Rural males (n=1814)	Ng *et al.* (1999)	190	12
Rural females (n=2696)	Ng *et al*. (1999)	200	16
Urban males (n=455)	Ng, Tee & Azriman (1995)	207	22
Urban females (n=172)	Ng, Tee & Azriman (1995)	208	30
Urban executives (n=406)	Teo *et al.* (1988)	232	31

groups in the country. Most frequently, these studied were based on the definition of body mass index (BMI) between 25-29.9 kg/m^2 for overweight and >30 for obesity. Data obtained from selected communities for the late 1980's and early 1990's show a wide range of prevalence of overweight and obesity from 18 to 39% and 2.7 to 20% respectively (Table 3). The overall prevalence for overweight amongst urban communities is probably about 29% and that for obesity, 12%. The combined prevalence of overweight plus obesity ranged from 26 to 53%, with an overall mean of 39%. The problem appears to be also prevalent among lower income urban adults. Even among rural communities, the

Table 3. Prevalence of overweight and obesity among selected urban population groups

	Urban executives (Teo, Chong & Zaini, 1988)	Urban adults (Ismail *et al.*, 1995)		Urban adults Ng, Tee & Azriman (1995)	
		Male	Female	Male	Female
n	406	2636	2111	455	172
% underweight	NA	18.1	25.8	2.0	10.0
% desirable weight	NA	53.3	48.2	60.0	65.0
% overweight	28.7	24.0	18.1	NA	NA
% obese	2.7	4.7	7.9	NA	NA
% overweight + obese	31.4	28.7	26.0	38.0	25.0
mean BMI ± SD	23.8 ± 2.7	NA	NA	24.5 ± 3.2	23.1 ± 3.6

NA = data not available

Table 3 (continued). Prevalence of overweight and obesity among selected urban population groups

	Urban Malay executives (Aziz *et al.*, 1996)		Urban lower income (IMR, 1995)	
	Male	Female	Male	Female
n	137	69	87	157
% underweight	5.1	4.3	NA	NA
% desirable weight	42.3	42.0	NA	NA
% overweight	37.2	39.1	28.0	33.0
% obese	15.3	14.5	17.0	20.0
% overweight + obese	52.5	53.6	45.0	53.0
mean BMI ± SD	25.9 ± 4.3	24.4 ± 4.0	NA	NA

NA = data not available

Table 4. Prevalence of under- and overweight among rural villagers

	Poverty villages (Chong *et al.*, 1984)	Bagan Datoh (Ng, Tee & Azriman, 1995)	Rural villages (Khor *et al.*, 1997)
Males			
n	522	190	1854
% underweight	45.0	24.5	13.2
% desirable weight	50.0	52.0	62.8
% overweight + obese	5.0	23.5	24.0
mean BMI ± SD	20.5 ± 2.8	22.6 ± 4.3	22.5
Females			
n	965	237	2751
% underweight	31.0	14.0	12.4
% desirable weight	54.0	40.0	48.5
% overweight + obese	15.0	46.0	39.1
mean BMI ± SD	20.9 ± 3.4	24.3 ± 4.4	23.8

problem of overweight appears to be on the increase (Table 4). Although the sample size of some of these studies are rather small, these findings do indicate some cause for concern and the need for more serious studies and interventions. The Ministry of Health Second National Health and Morbidity Survey of 1996 (n=33,386, >18 years of age) reported an overall national prevalence of overweight of 16.6%, obesity, 4.4% and combined overweight and obesity of 21.0% (Ministry of Health, 1997a).

POLICIES, PROGRAMMES AND INTERVENTIONS

Current programmes and interventions

Various programmes and interventions have been carried out by numerous organizations and agencies to ameliorate the nutritional problems seen in the country (Tee and Cavalli-Sfroza, 1993).

Four major *programmes of the Ministry of Health Malaysia* have been implemented to combat the undernutrition problems in the country. A coordinated long-term action programme, the *Applied Food and Nutrition Programme* (AFNP), implemented in the 1970's and 1980's had brought about improvements to the communities throughout the country. In 1989 a comprehensive programme for the *development of "the very poor"* was launched, and the role of the Ministry of Health was to ensure that the health needs of these families were identified and fulfilled. These include giving basic health and nutrition education and

Table 5. Prevalence of under- and overweight amongst urban and rural children

	Urban (Tee *et al.*, 1998)			Rural (Khor & Tee, 1997)		
	Male	Female	Both	Male	Female	Both
% stunted	7.9	5.5	6.7	34.4	24.9	29.6
N	3033	3952	5985	1049	1066	2115
% underweight	7.8	6.4	7.1	29.1	26.1	26.9
n	3035	2958	5993	1057	1069	2126
% thinness	4.7	4.5	4.6	8.2	6.2	7.3
n	2937	2036	4973	950	731	1681
% overweight	9.5	5.2	7.7	2.0	1.9	1.9
n	2937	2036	4973	1731	1544	3275

providing food supplements to malnourished children in the poor families. Another strategy adopted is the provision of *supplementary feeding* in the form of instant full cream milk powder to selected deserving children, pregnant women and lactating mothers. The *rehabilitation programme for malnourished children* was implemented from 1989 wherein several essential food items were provided as immediate assistance to these children. Other medium and long term strategies that were implemented including immunisation, health and nutrition education, treatment of diseases and close growth monitoring.

In cognizance of the increasing trend of non-communicable diseases that is taking place in the country, the Ministry of Health launched a comprehensive campaign for the promotion of healthy lifestyles among Malaysians. The "Healthy Lifestyle Campaign" was launched in May 1991 with its first thematic campaign, ie cardiovascular diseases. For six consecutive years, one thematic campaign per year was carried out, namely, sexually transmitted diseases (1992), food safety (1993), childhood diseases (1994), cancers (1995) and diabetes mellitus (1996). In this year's campaign on the prevention of diabetes mellitus, a great deal of emphasis is given to practicing a healthy dietary pattern and taking up regular exercise programmes.

Programmes of the Ministry of Agriculture deal mainly with food commodities. Activities are focussed on smallholders to improve food production through improved agricultural services such as irrigation and drainage, agricultural inputs, credit, marketing, and other activities. An important programme implemented by the Ministry since 1968 is the *Farm Family Development Programme* (FFD) which aims to improve the quality of life of farm families through balanced food consumption, diversified diet and sanitary food preparation.

Various health and nutrition programmes have been implemented

by the *Ministry of Education* for improving the nutritional status of school children. The *School Health Programme* is an integrated programme designed to protect, promote and maintain optimum health of pupils and school personnel, promote healthy school living and develop desirable knowledge, attitudes and practices pertaining to health. *Health education* is recognized as a fundamental mean by which the individual and the community can improve health and nutrition practices. Two feeding programmes have been implemented by the Ministry of Education to improve the nutrient intake of needy school children, namely the *school supplementary feeding programme* which provides a balanced meal during the mid-morning or mid-afternoon break and the *school milk programme*. The programmes also aim at creating opportunities for formal/informal nutrition and health education to the children.

In an effort to ensure that foods sold in school canteens are safe and of certain nutritional quality, the Ministry of Education and the Ministry of Health jointly developed and implemented the *"school canteen guideline"*. School canteens are recognized as important avenues for the provision of nutritious meals to children as well as for inculcating good food habits among these young population groups at a very impressionable age.

National Plan of Action on Nutrition

Following the International Conference on Nutrition jointly organised by the FAO and WHO in December 1992, a National Coordinating Committee on Food and Nutrition (NCCFN) was formed and headed by the Division of Primary Health Care and Family Health, Ministry of Health Malaysia. The Committee comprised representatives from some 20 departments and agencies related directly or indirectly to the promotion of the nutritional wellbeing of Malaysians. Through this inter-sectoral collaborative effort, a National Plan of Action on Nutrition (NPAN) for Malaysia was prepared.

The NPANM is a milestone in the continuing process to eliminate malnutrition and at the same time prevent an increase in the incidence of communicable and diet-related non-communicable diseases in the country. It provides the framework for an intersectoral action for nutrition with emphasis on strengthening the organisational structure, coordinating mechanism and technical capability of the various implementing agencies, as well as advocating nutrition intervention as part and parcel of national development.

The NPAN will attempt to cover all aspects of food and nutrition, with programmes and activities in nine thrust areas, including improving household food security, protecting consumers through improved food quality and safety, caring for the socio-economically disadvantaged and nutritionally vulnerable, and promoting appropriate diets and healthy lifestyles. It is hoped that most of the activities recommended could be implemented in the 7th Malaysia Plan period (1996-2000). Some of the programmes in the NPAN are in fact on-going activities of

several ministries. To further implement specific activities, three Technical Working Groups have been formed, ie TWGs on Research, Training and Dietary Guidelines. These TWGs have initiated various activities in their respective work programme.

The NCCFN represents a truly multisectoral linkage of all organisations involved in improving food and nutrition in the country. For the first time, there is an opportunity for a concerted effort in nutrition improvement in the country and this represents an important product of the ICN for Malaysia. The NCCFN is recommended to be strengthened and given the mandate to advise the govermnent on nutrition issues and promote effective intersectoral cooperation.

Towards a culture of healthy eating

The ultimate strategy towards achieving a healthy nation is the promotion of a healthy lifestyle. The Ministry of Health has taken cognizance of this and launched the Healthy Lifestyle Campaign 5 years ago. The promotion of a healthy lifestyle would certain include promoting healthy eating habits and maintaining a desirable dietary pattern. It is clear that nutrition education to the community is the long term solution to the nutritional problems encountered by Malaysians. All efforts should therefore be made towards inculcating a culture of healthy eating among Malaysians. This section highlights the main programmes that have been implemented.

Healthy Eating Programme

The Healthy Lifestyle Campaign was launched in May 1991 with its first thematic campaign, ie cardiovascular diseases. For six consecutive years, one thematic campaign per year was carried out, namely, sexually transmitted diseases (1992), food safety (1993), childhood diseases (1994), cancers (1995) and diabetes mellitus (1996). These programmes focussed on creating awareness and educating the public with regards to these diseases. In almost all the campaigns in the past 5 years, a great deal of emphasis has been given to practicising a healthy dietary pattern and taking up regular exercise programmes.

It is important that these promotional activities and programmes continue to be given focus and the required impetus to achieve the desired results. The Ministry of Health Malaysia has planned another series of activities to be carried under the 2nd phase of the Healthy Lifestyle Campaigns (1997-2002). The theme for the first year of this phase shall be “Healthy Eating” and was launched by the Hon. Minister of Health of Malaysia on 4 January 1997.

The Healthy Eating Campaign (Ministry of Health, 1997b) focuses on four main topics, emphasising on dietary practices, body weight, food and nutrition labelling as well as food hygiene. These topics and the messages that are to be disseminated to the consumer are as follows:

- Adoption of desirable dietary practices
    - eat a variety of foods guided by the food pyramid
    - balance the food one eats with physical activity
    - choose a diet with plenty of cereals and legumes
    - eat more vegetables and fruits
    - choose a diet moderate in sugar and salt
    - choose a diet low in fat and cholesterol
    - drink plenty of plain water
    - eat clean and safe food
    - nutritional practices should be based on facts and not fallacies

- Make dietary modifications
    - plan healthy menus
    - modify recipes
    - adopt healthy food preparation and cooking procedures

- Maintenance of a desirable body weight
    - eat to meet a desirable body weight
    - have regular exercise

- Understanding food and nutrition labelling
    - be an informed consumer

- Provision of healthy food at food outlets
    - choose stalls, canteens, restaurants and other outlets that are clean to ensure foods served are safe

The food pyramid is introduced for the first time in the country. It is based on 4 layers and 5 food groups and serving sizes appropriate for local populations.

The Campaign has been targeted to most sub-groups of the community, including the following:

- Primary school children (7 to 12 years and below)
- Adolescents (1 0 years to 1 8 years and below)
- Adults, including the working population and housewives
- Elderly
- Food handlers

For the last group, messages to encourage food handlers to adopt healthier food handling, preparation and storage practices have been prepared. Emphasis is also given to personal hygiene of the food handlers.

The Ministry of Health has identified various organisations for collaboration in order to disseminate the Health Eating messages. These include the following:

- working with Radio and Television Malayisa (RTM) for airing dramas, plays and “incidental" messages on healthy eating

- collaborating with Education Ministry in strengthening the setting up of "healthy canteens" in schools, encouraging the "healthy school" concept and promoting "healthy eating" in school curriculum

- working with departments and factories in advocating "healthy workplace" concept including the provision of "healthy canteens" in the workplace

- collaborating with food-related agencies such as FAMA and MARDI in encouraging the

consumption of fruits and vegetables and advocating the use of healthy products

- invite professional bodies (such as Malaysian Dietitian Association & Nutrition Society of Malaysia, MASSO, etc) to participate and contribute to the planned activities

- working with food industries and related agencies for more comprehensive food labelling and provision of healthy food choices

- intensive outreach programmes in collaboration with relevant governmental, NG0s and private sector.

A multi-media approach through the use of the following

- TV
- Radio
- Cinema advertisement
- Billboards
- Bus panels advertisements
- Publication of advertorials, feature articles, quizzes in the local vernacular newspapers, magazines on healthy eating
- Messaees on Ministry of Health vehicles

The print media to be produced by the Health Education Division include posters, booklets and leaflets. Several non-print media to be utilised include trailers, documentary films, interactive computer quiz, TV programmes and jingles and radio commercials.

A knowledge, attitude and practice (KAP) study of food and nutrition among the various target groups is to be carried out to obtain baseline data prior to the dissemination of the messages on healthy eating throughout the country. These data can be used to determine effectiveness of the programme when the study is repeated several years later. The baseline study is to be conducted throughout the country on all the five target groups identified in the campaign. A separate set of questionnaire for each of the 5 groups shall be used.

Challenges to implementation

It is certainly important to have the above programmes and activities clearly identified. The commitment of the government to address these lifestyle-related diseases is clear as indicated by the amount of budget allocated for these activities over the past 9 years. However, the nutritionist and health workers are faced with various challenges in trying to implement these intervention programmes.

Malaysians have now become more nutrition and health consciuous. Many of them are asking questions about nutritional needs, optimum nutrition, nutrients in foods, toxicants in foods, and a whole host of other topics related to nutrition and health. The consumer now has access to a great deal of nutrition information (and often times nutrition misinformation as well) within his living room through the internet. The challenge is to adequately provide the much needed nutrition information. The relevant authorities will have to examine the strategies for nutrition education to ensure a wider dissemination of reliable nutrition information. They

will have to deal with the increase in misleading advertising and misinformation on many aspects of food and nutrition being promoted by irresponsible vendors. The challenge is to determine how best to promote healthy eating within the present scenerio of rapid urbanisation, “western” dietary pattern influence, a whole barrage of convenience and “health” foods and nutrition misinformation.

The challenge is to be equipped to implement the nutrition education programmes. The training of nutritionists to carry out these activities as well as other nutrition intervention programmes need to be given serious consideration and proper planning. This includes not only the number of nutritionists graduating from universities but more importantly their deployment to appropriate sectors, both private and public. It is imperative that other agencies and ministries other than the Ministry of Health to have adequate posts for nutritionists. Continuing education of existing staff also needs to be adequately addressed by providing opportunities for higher degrees and participation in seminars and conferences locally and abroad. The nutritionist has to keep abreast with the rapidly moving nutrition science and be aware of the controversies surrounding several issues.

The crucial question is: are we able to arrest the increase in these diet-related chronic diseases ? Or are we heading towards further deterioration in dietary pattern and increase in these diseases ? Basically, the question is if we are able to ensure that the community practices healthy eating habits and other aspects of healthy lifestyle. But how do we make sure that our messages get across to the community and that the acquired knowledge is translated into healthy eating practices ? How do we compete with messages from various health food vendors that promise miracle cures ? How do we convince the public that healthy eating does not necessarily mean specialised and expensive foods ? How do we explain to the public that there is no short cut or magic bullet to loosing excessive body weight, to lowering blood cholesterol or blood sugar, or to the prevention of cancers ? How can we make the people believe that healthy eating means the old fashion way of eating a variety of foods, eating according to their requirements ?

There are of course no easy answer to these questions. It will be a difficult and challenging journey ahead, requiring the concerted effort of all in the country. The nutritionists and other health workers will have to continue to soldier on, in order to contribute towards safe guarding the health of the population of a nation that is rapidly developing.

CONCLUSIONS

The country will continue to advance rapidly into the year 2000 and beyond. The lifestyle of the population will continue to change, and with this, the changes in the dietary habits and patterns. These changes in dietary patterns of Malaysians towards an "affluent" diet of the developed industralised countries has been a cause for concern. Of particular concern is the

increase in consumption of fats and oils, and refined carbohydrates as well as the decreased intake of complex carbohydrates (the main source of dietary fibre). Changes in meal patterns are also evident: more families eat out, busy executives skip meals, the younger generation miss breakfasts and rely too much on fast foods. Many Malaysians have the mistaken belief that the taking of vitamin and mineral supplements can make up for the lack of these nutrients in their daily diets. In addition, communities have become generally more sedentary. All these changes have brought about undesirable effects with significant proportions of the affluent segments of the population being afflicted with various non-communicable diseases associated with overnutrition, namely obesity, hypertension, coronary heart disease and cancers.

On the other hand, the challenge to these workers is to control the nutrient deficiencies that are still persistent among certain segments of the community. The prevalence and severity of micronutrient deficiencies should be effectively checked. Communities should have access to and the knowledge to make use of nutritious foods available to them. The management of both these facets of the malnutrition problem is certainly very costly for the limited resources available in the country.

These dietary alterations and changes in nutritional issues may, in fact, be the experience for many other Asian countries. Is it inevitable that all countries, as they progress and become more developed, will have to be burdened with these diseases such as hypertension, obesity and coronary heart disease ? Is it possible for the lesser developed countries to avoid these dietary changes and the large increases in prevalence of obesity and coronary heart disease ? With globalization of world trade, how much control do nations really have in determining dietary patterns of their populations ? It is hoped that through this conference of sharing experiences with other Asian countries, a better understanding and improved strategies could be arrived at. The challenge to nutritionists and other health workers is to examine ways for communities to maintain the traditional Asian diet which is balanced and with more variety. Nutritionists would also need to have a better understanding of the role of diet in the prevention and treatment of certain types of cancers.

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