



Nutri Scene

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There is a significant prevalence of undernutrition in our children. Conversely, the incidence of overweight is also on the increase.

THE World Health Organisation (WHO) has highlighted that children are a vulnerable group and their nutritional status is a sensitive indicator of community health and nutrition. The WHO has long emphasised the importance of assessing and monitoring the growth status of children. Several monographs on this topic have been published over the years. I have also highlighted the development of a growth reference by WHO for monitoring growth of children and other groups.

The National Plan of Action for Nutrition (NPAN) II of Malaysia has also identified continuous assessment and monitoring of the nutrition situation as one of its strategies. NPAN II is the blueprint of nutrition programmes in the country and this strategy has been recognised as vital to achieving the goal of improving nutritional status of Malaysians.

This strategy has identified the need for a national nutrition survey to be conducted periodically in the country. Furthermore, it has identified growth monitoring of pre-school and school children as essential activities to be carried out.

Let us take a look at the nutritional status of Malaysian children. I will be relying mostly on the report of the National Health and Morbidity Survey (NHMS) III, conducted in 2006.

National health and morbidity surveys

National Health and Morbidity Surveys (NHMS) have been conducted over the past three decades. The first was in 1986, a subsequent one in 1996 and the third was carried out in 2006. These are nationwide surveys of various aspects of health, carried out on representatively sampled subjects from all parts of the country.

These are massive surveys, involving large sample sizes. For example, in the 2006 survey, over 56,000 subjects were interviewed. The efforts of these surveys are indeed commendable as they have made available data that is useful in determining the national health burden. Such data is absolutely essential in health policy and programme planning. Repeated surveys over the years now enable us to understand the trend of various disease prevalences.

The NHMS III report was released in early 2008. The report covers findings from 18 research topics, ranging from general topics such as health expenditure and health utilisation to specific subjects such as sexual behaviour and psychiatric morbidity. I am pleased to note that the authorities have encouraged the wide dissemination of the findings of this study.

There were no nutrition status measurements in previous national and health morbidity surveys. Weight and height measurements of subjects were only included in the second NHMS, and only for adults.

In the most recent survey of 2006, weight and height measurements

Are our children growing right?



Younger children, particularly those in the one to six years old group, are the most vulnerable to nutrition problems as these are the years when there is rapid growth and development. – AP

NUTRITIONAL STATUS OF MALAYSIAN CHILDREN

	National	Gender		Locations	
		Boys	Girls	Rural	Urban
Underweight	13.2	14.5	12.0	16.0	11.4
Stunted	15.8	16.6	15.0	19.4	13.6
Wasted	10.4	10.6	10.2	11.0	9.5
Overweight	5.4	6.0	4.7	4.0	6.3

were taken of all subjects. This is certainly a most welcome move as we now have a representatively sampled data of growth status of Malaysians. I have extracted data for children and discuss these in the following sections.

Reporting nutritional status of children

NHMS III included assessment of the nutritional status of children (aged 0 to below 18 years) in a nationally representative sample. A total of 21,249 children were assessed using weight and stature (length or height) measurements.

These weight and height measurements of the subjects were then compared with a set of growth reference prepared by the the United States Centre for Disease Control (CDC). The growth achievements of the subjects were calculated as a number of standard deviations (or z scores) away from the median of the reference. In the next step, the nutritional status of the children were classified according to z scores for weight for age (WAZ), height for age (HAZ) and weight for height (WHZ) as recommended by WHO (1995). These are standardised parameters used by nutritionists to indicate undernutrition or overnutrition in a community.

Undernutrition amongst children

When children are below -2SD of the WAZ, they are considered underweight. These children have lower weight achievement for that particular age. The NHMS III findings showed that the national prevalence of under-

weight children was 13.2%, the level being higher in boys (14.5%) compared to girls (12.0%). The report also showed that more children in rural areas (16.0%) were underweight compared to those in urban areas (11.4%).

Stunting is another common malnutrition problem and implies long-term undernutrition and poor health. Stunted children are those with HAZ below -2SD. In the NHMS III study, stunting was the most important undernutrition problem encountered. The prevalence of stunting was found in 15.8% of the children, with a slightly higher prevalence among boys (16.6%) than girls (15.0%). The percentage of children who were stunted in the rural areas (19.4%) was clearly higher than children in urban areas (13.6%).

Children with WHZ below -2SD are said to be wasted. This is the third form of undernutrition commonly encountered and suggests recent or continuing current weight loss. The prevalence of wasting was found in 10.4% of the children, with a similar prevalence among boys (10.6%) and girls (10.2%). The prevalence of wasting was slightly higher in urban compared with rural areas at 11.0% and 9.5% respectively.

Overweight is an increasing problem

On the other extreme of the malnutrition scale is overnutrition. Children with WAZ above +2SD were classified as overweight. These children have gained more weight than is appropriate for their age. The NHMS III found that 5.4% of the children were overweight, with a slightly higher preva-

lence among boys at 6.0% than girls at 4.7%. The proportion of overweight children was higher in urban areas at 6.3% than in rural areas at 4.0%.

Which age groups are most affected?

Let us examine more closely the data and determine which age groups are most affected. For the problem of underweight, the highest prevalence was found amongst those one to three years old (19.8%). The next highest group was found in children four to six years old (16.4%). Infants, on the other hand, had the lowest prevalence (7.1%).

In the case of stunting, the group most affected were those in the 16-18 years group (23.7%). This is followed by young children, ie those one to three years (17.2%) and four to six years (16.7%). Again, infants were the least affected (9.0%).

Wasting was found to be most common amongst infants (15.2%) and those in the one to three years old group (15.1%). Children in the 10-13 years group were the least affected (4.5%).

As for the problem of overweight, younger children were again most affected. Findings showed that 6.8% of children in the seven to nine years old group were overweight, followed by 6.4% in the four to six years old group. The children least affected by overweight were those in the one to three years group (3.2%).

It is quite clear that younger children, particularly those in the one to six years old group were the most affected with nutritional problems, both undernutrition and overnutrition. This is not surprising at all as these are the most vulnerable groups where growth and development are rapid.

Are Malaysian children growing right?

The NHMS III findings showed that the great majority (over 80%) of Malaysian children have satisfactory nutritional status. Nonetheless, a significant proportion of the children were found to be undernourished as about 15% of them were found to be underweight, stunted or wasted.

Stunting appeared to be the most important undernutrition problem.

These are average figures for the whole country. One can expect significant differences in percentage of undernourished children in different parts of the country. Just as an illustration of this difference according to location, the survey findings clearly showed that the three types of undernutrition reported were more prevalent in rural areas. These findings are as expected as socio-economic conditions of rural groups may be a handicap for optimal growth achievement.

On the other hand, the problem of overweight was of a lower magnitude, as it affected only 5% of the children studied. This is a significant figure and must not be overlooked. Other studies in the country, amongst various age groups in selected parts of the country, have indicated higher prevalences. In the case of overweight, the reverse is true; more urban children are affected, compared to those in rural areas. This finding is in line with the commonly accepted understanding that overweight is very much influenced by the environment. Urban children are generally less physical active and at the same time, have a higher food intake.

It can also be noted that there are gender differences in these parameters of malnutrition. Findings showed that there are more malnourished boys than girls in all the three parameters discussed. While only marginally more boys were wasted, it is clear that more boys were stunted and underweight. All these findings, including differences in geographical locations, between gender, different socio-economic groups and ethnicity are extremely important and useful in formulating intervention programmes.

I would just like to end by highlighting the reference used for the analysis of the weight and height measurements. As I indicated above, the CDC reference was used as that was perhaps the most comprehensive database available at that time. It would be very useful to reanalyse the available data with the WHO growth reference released in 2008.

■ NutriScene is a fortnightly column by Dr Tee E Siong, who pens his thoughts as a nutritionist with over 30 years of experience in the research and public health arena. For further information, e-mail starhealth@thestar.com.my. The information provided is for educational and communication purposes only and it should not be construed as personal medical advice. Information published in this article is not intended to replace, supplant or augment a consultation with a health professional regarding the reader's own medical care. The Star does not give any warranty on accuracy, completeness, functionality, usefulness or other assurances as to the content appearing in this column. The Star disclaims all responsibility for any losses, damage to property or personal injury suffered directly or indirectly from reliance on such information.

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