

Childhood Obesity: Time to act?

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In this issue of The Medical Journal of Malaysia, Chong et al report the results of a study using BMI to measure the prevalence of obesity and overweight and associated risk factors in 7 and 8 year old school children in Kota Kinabalu, Sabah¹. Using standard research methods they report a prevalence of 2.5% of obesity as defined by a BMI above the 95th centile for age using the US Centre for Disease Control (CDC) charts. This is considerably lower than two reports from West Malaysia: A 2004 report of secondary school children reported a prevalence of 7.3%² and a 1991 study reported a prevalence of 4.4% in 6 year old children³. Chong et al report the overall prevalence of hypertension was 14% in and this rose to 50% in obese children. This may seem alarmingly high however because of the relatively small number of children with obesity (22 out of 891) the precision of this estimate is likely to be low.

An obesity prevalence of 2.5% indicates that fewer than expected numbers of children were above the 95th centile. The use of a particular growth chart can always be debated and there is no perfect chart for any one population. Typical growth patterns may not represent optimal growth patterns. The particular chart used by Chong et al, the CDC chart, although multiethnic has been criticised predominantly because the majority of children were not exclusively breastfed. The response to this has been the development of the WHO charts representing children from 6 countries and a variety of incomes who were predominantly breastfed for at least 4 months and still breastfeeding at 12 months. Nevertheless assuming that the charts Chong *et al* are sufficiently representative of the growth of children with optimal grown, does this mean that their study population consists of poorly grown children?

BMI is regarded as a low cost reasonably reliable measure of body fat but it has its limitations. For instance in adults we know that body composition varies and most importantly here it percentage body fat varies with ethnicity. There is a reasonable body of data to show that Asians have a higher body fat composition at any BMI⁴. This has led to a debate about whether different ethnic groups should have different BMI cut-off values. In particular due to the relatively high body fat composition of Asian populations it has been recommended that lower obesity cut-off values be used than those for Caucasians. For adults this could be reduced from 30 to 27.5 for obesity and overweight may be as low as 23⁵. The situation for children is less clear. We have not yet accumulated sufficient data on which to base a decision. We know that percentage fat varies for the same BMI in different ethnic groups in children too. It has been shown that Thai

girls have a higher percentage body fat for the same BMI compared with Malay and Filipino girls whereas Filipino boys have a much lower percentage body fat for the same BMI than either Malay or Thai boys⁶. Therefore should children in Sabah who are ethnically different from children in West Malaysia be measured with the same BMI yardstick without taking into account their percentage body fat?

As noted the prevalence of hypertension was 14% and up to 50% in the small group of obese children. The odds of hypertension in obese children was 6.2 with a confidence interval of 2.8-15.6 may not be excessive when compared with a US multiethnic study of children with a mean age of 13 years which looked at the relationship between ethnicity, hypertension and obesity⁷. In this study the prevalence of hypertension was 19% when blood pressure was measured in a similar way (one screening consisting of 3 readings) but this prevalence decreased to 4.5% after 3 screenings. For children with a BMI in the obesity range the prevalence of hypertension was 34%. This does not seem remarkably different when taking precision into account. This study found no relationship between ethnicity and hypertension after adjustment for BMI.

Chong et al suggested that if the prevalence of obesity were found to be high in their population then the school health teams might consider routine screening for obesity. Should school health teams screen for obesity? This has been argued. A UK health technology assessment report differentiates between monitoring (keeping an eye on population trends) and screening (identifying children with obesity for the purpose of treating them). However they point out that screening for hypertension does not meet the criteria for screening. This is mainly because there is no effective treatment of obesity. Obesity treatment works in motivated children from motivated families and these will seek out health care for themselves. On the other hand carrying out preventive programmes may have a role⁸.

The authors suggested that Sabah was less well developed economically. If this is so then there is a window of opportunity to apply population based strategies that can prevent obesity.

School based preventive strategies seem to have the most evidence. A Cochrane review examining strategies for preventing obesity in children suggests that these work best between 6 and 12 years. Strategies with the best evidence include: a school curriculum that includes healthy eating, physical activity and body image, increased sessions for

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physical activity and the development of fundamental movement skills throughout the school week, improvements in the nutritional quality of food supply in schools, environments and cultural practices that support children eating healthier foods and being active throughout each day⁹.

The evidence also suggests that teachers and other staff need support and education to implement health promotion activities and parents also need to be supported both in providing nutritious foods and also to encourage children to be more active at home, not necessarily by increasing sporting activities but by reducing screen based activities in particular.

Some of these strategies are currently in the process of being implemented into Malaysian schools. The medical profession could provide the support that these teachers and parents need to enhance these programmes and ensure that they do result in prevention of obesity among Malaysian children.

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