

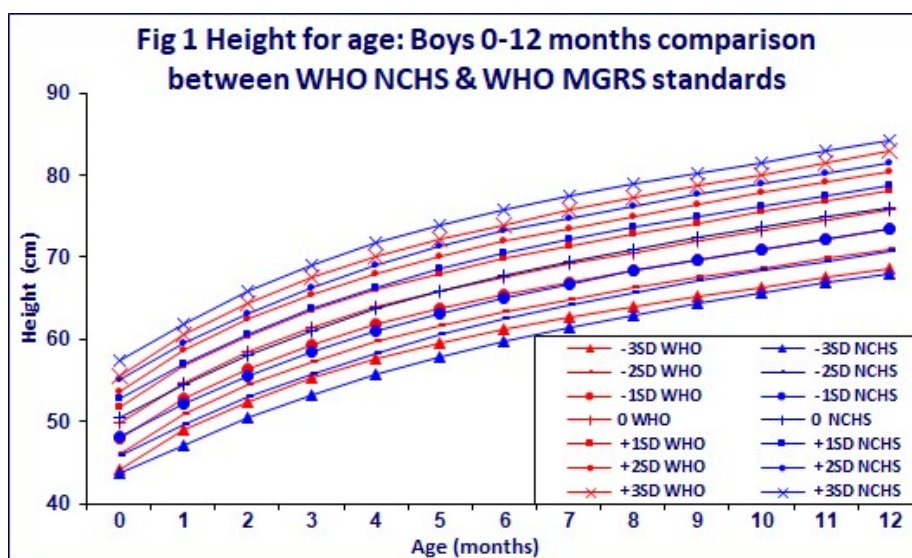
USE OF NEW WHO GROWTH STANDARDS IN ICDS AND HEALTH PROGRAMMES POLICY ISSUES AND IMPLICATIONS

In April 2006, WHO has released the growth standards for pre-school children based on a multi-centre global study for assessment of nutritional status of pre-school children. They had suggested that these may replace the NCHS/WHO growth standards, which were widely used earlier. Some of the major problems with earlier NCHS/WHO standards are:

- they were based on formula fed children from a single community in the USA; growth pattern of breast-fed infants is different from that of formula fed infants;
- children were measured once every three months, which is not adequate to describe the rapid and changing rate of growth in early infancy; and
- there were shortcomings inherent in the statistical methods available at that time which led to inappropriate modelling of growth patterns.

In order to derive more appropriate standards for growth during early childhood, WHO conducted a multi-centre study in Brazil, Ghana, India, Norway, Oman, and United States. Each centre enrolled healthy term infants who had no known illness or conditions that might affect their growth, and were breast-fed as per the international feeding guidelines; growth data and related information on about 8500 children from diverse ethnic backgrounds and cultural settings who did not have any environmental constraints to growth were collected. Weight-for-age, height-for-age, weight-for-height and BMI for age standards for pre-school children were computed from this study population. WHO has released these standards and posted them in their website in April 2006. WHO has recommended that from henceforth these growth standards may be used globally for assessment of nutritional status of pre-school children. The addition of the standards for BMI for age in pre-school children is timely in view of the fact that globally both under- and over-nutrition in children are becoming public health problems and there is an urgent need for early detection and correction of both.

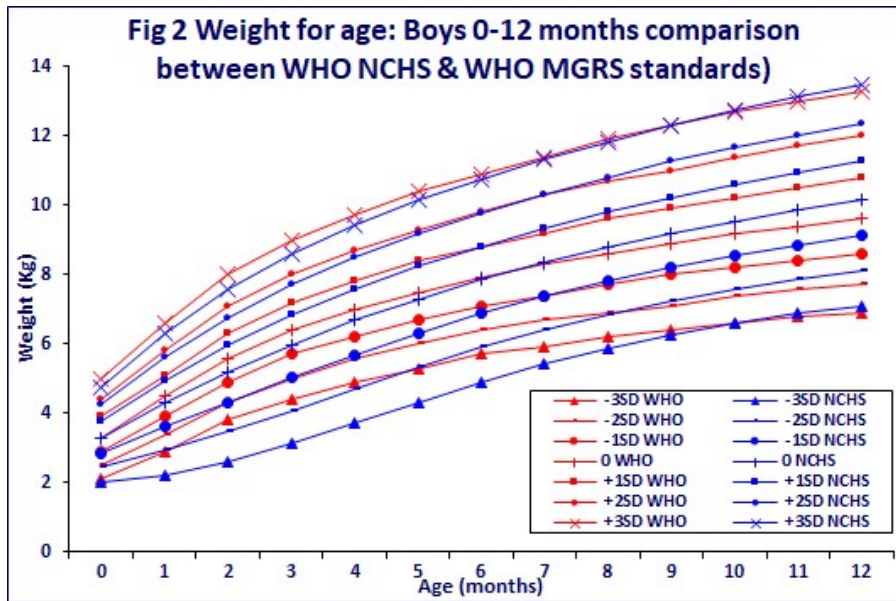
Comparison between the NCHS/WHO and New WHO standards



A comparison of the new WHO growth standards for height and weight with the earlier used NCHS standards is given in Figs 1 and 2. Computation of under-nutrition (weight for age <- 2SD) from the District Level Household Survey 2 with the new

WHO and NCHS standards is shown in Fig 3. The maximum difference is in the critical first

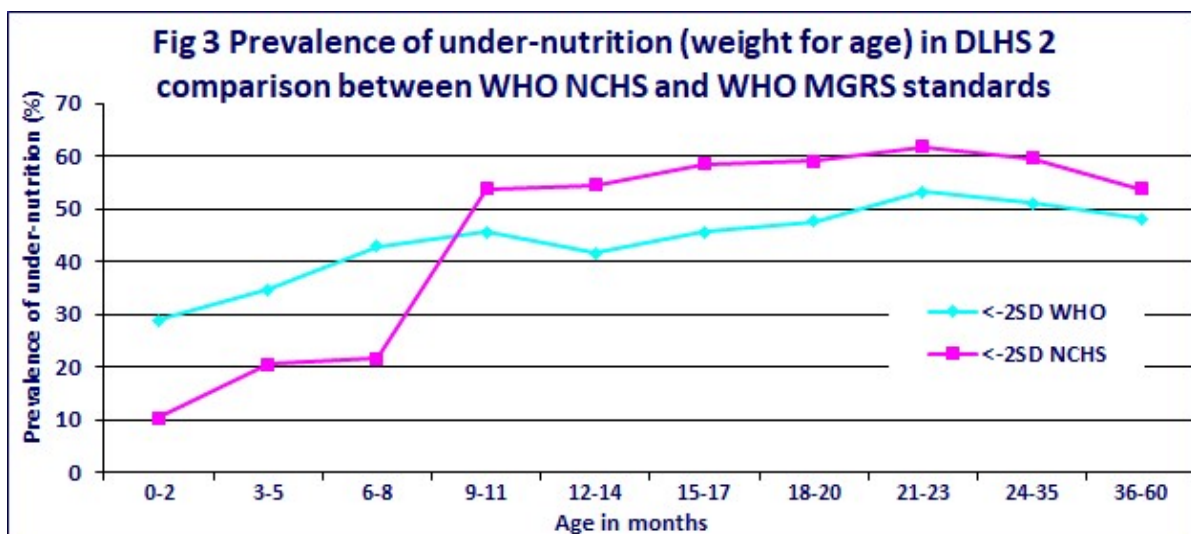
year of life especially in the first six months where the new standards have indicated better weight and height of infants as compared to the NCHS standards. As a result, the computed



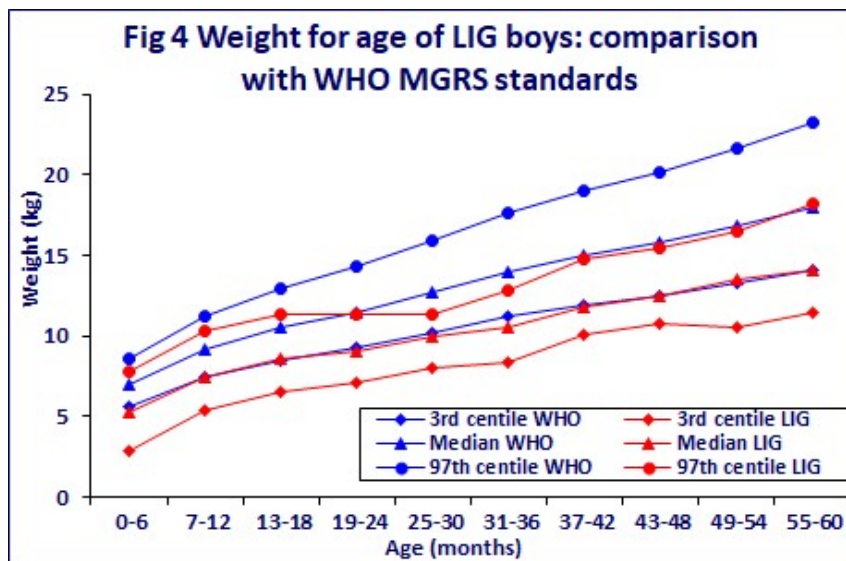
under-nutrition rates in the critical 0-6 month age group using this standard will be higher as compared to the computed under-nutrition rates using NCHS/WHO standards.

In a way this is really correction of an earlier fallacy. The reported

under-nutrition rates in the 0-6 month age group as assessed by the NCHS norms (10-15%) is unrealistically low when one takes into account the 30% low birth-weight rate in the country. If the new WHO standards are used prevalence of under-nutrition in the first three months is about 30% and thereafter it rises to about 45% by twelve months. This rise clearly is due to errors in infant feeding practices and inadequate care during infections. Combating these through nutrition and health education and improving access to health care are critical to achieving improvement in nutritional status of infant and young child. There is a second peak around two years of age when the child shifts totally to adult food, which is perhaps related to inadequate intake of food because of poor child feeding practices. Nutrition education that in view of the small stomach capacity, children should be fed 5-6 times in order to ensure that they get adequate quantity of food may help in improving the dietary intake and nutritional status of children in this age group. Thus, the use of new WHO growth standards can make an important contribution in clearly bringing into focus the two periods in infancy and early childhood when nutrition and health education can play a major role in reducing the under-nutrition in pre-school children.

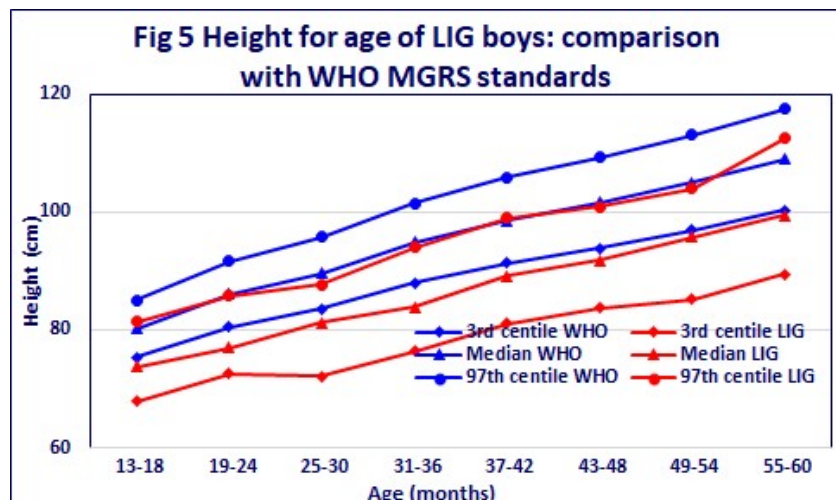


New WHO standards in the dual nutrition burden era

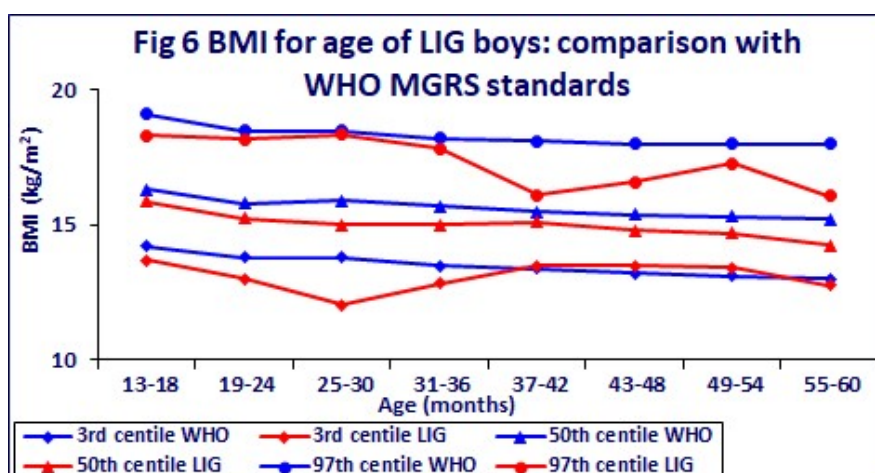


Ample data exist to show that about 50% of Indian young children are stunted (height for age less than mean -2SD of NCHS standard) and over 45 % underweight (weight for age less than mean -2SD of NCHS standard); but only 15% of Indian young children are wasted (weight for

height less than mean -2SD of NCHS standard). Reported underweight rates in India are higher than that of Sub-Saharan Africa but under-five mortality rates and morbidity rates in children in India are much lower. This paradoxical situation has been termed as the South Asian enigma. Reported wasting rates (weight for height in children) in India is about 15% while it is about 30% in sub-Saharan Africa. There have been



speculations whether wasting could be a more appropriate index of under-nutrition for assessment of risk of morbidity and mortality due to increased susceptibility to infections. Increasing adiposity in childhood and associated risk of non-communicable diseases in



adult life has been reported from India. Some of the preliminary data from ongoing NFI studies in urban ICDS areas in about 1200 children is shown in Figs 4-6. These data show that while the median height and weight of children from low and low

middle income group families is comparable to the 3rd centile of the new WHO standards, the BMI for age presents a totally different picture; the median, 3rd centile and 97th centile of the BMI for age for these children are comparable to the respective centiles of the BMI for age in the new WHO standards. India has entered the dual nutrition burden era; while under-nutrition continues to be a major public health problem over-nutrition is also emerging as a problem right from childhood. The country therefore has to invest in detecting and combating both under- and over-nutrition right from early childhood. With the ready availability of the BMI for age standards in the new WHO Growth Standards it will be possible to test how far this helps in early detection of the under- and over-nutrition in Indian children.

It is essential to undertake studies to compare the usually used weight for age and the BMI for age in pre-school children to assess the relative merits of these two indices in early detection of both under- and over-nutrition. Simultaneously efforts should be made to document the relative merits of the four indices (weight for age, height for age, wasting and BMI for age) from the new WHO norms for assessing increased risk of functional decompensation associated with under-nutrition and morbidity rates due to infections through analysis of existing data sets from NFHS/DLHS as well as data from ongoing NFI research studies.

Current status of use of growth standards in health and ICDS programmes

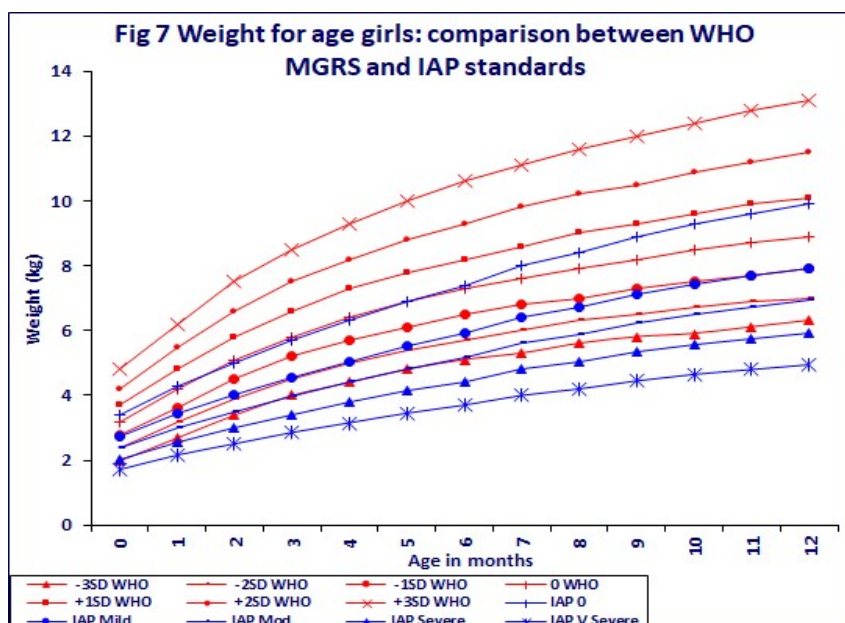
In India currently weight for age is the most widely used index for assessment of nutritional status because of the following advantages:

- norms for assessment of under-nutrition have been in vogue for the last three decades;
- balances are available in most areas, up to village level;
- weighing is a simple operation; almost all persons involved in assessment of nutritional status have been trained in weighing children and classifying them according to the weight-for-age charts;
- with nutrition and health interventions, deficit in weight for age can be readily reversed; so, weight for age can be used to assess improvement following interventions.

Currently the NNMB, NFHS and DLHS use the existing NCHS standards using z scores of weight for age, height for age and weight for height for assessing prevalence of moderate and severe grades of under-nutrition. In ICDS programme however, the IAP classification (using modified unisex Harvard Standards) is used for grading under-nutrition.

Use of new WHO standards in assessment of nutritional status in national programmes

Weight for age is likely to remain the most widely used index for assessment of nutritional status in the community settings such as ICDS programme. So far ICDS has been using the IAP norms for assessment of under nutrition. The fact that NFHS and DLHS have used z scores and NCHS standards while ICDS programme uses IAP standards for assessment of under-nutrition has been one of the factors responsible for the massive differences between the prevalence of under-nutrition reported in ICDS and National surveys. Comparison of the new WHO and the IAP standards is given in Fig 7. It is obvious that even if the new WHO standards are used there will be substantial differences in the reported



prevalence of under nutrition between surveys and ICDS service reporting. If, however a decision is taken to use the new WHO standards in the ICDS system this problem would be eliminated. Yet another problem with the use of IAP standards is that because of use of unisex norms under-nutrition rates in girls is higher. Ample data from the national

surveys such as NNMB, NFHS and DLHS have shown that if gender disaggregated standards are used there is no gender difference in the nutritional status of pre-school children. This apparent difference between service reporting and surveys will also be eliminated if the new WHO standards are used for assessment of nutritional status in ICDS.

Policy and programme implications of shifting over to the new WHO standards for growth in preschool children

In view of the fact that for the first time a standard based breast-fed infants in a multi-country study in which India also participated has become available, the Ministry of Women and Child Development and Ministry of Health and Family Welfare are considering the adaptation of the new WHO norms. Before adopting the new standards, there is a need to clearly understand the implications of the change over and also apprise the non-nutritionist programme managers and programme implementers of the implications of the change over. One of the major effects of change over will be an apparent increase in the under-nutrition rate in early infancy. This should not be viewed as yet another emerging problem but as a problem which has been uncovered by the adoption of the new standards; in fact, this represents an opportunity to empower the family to combat under-nutrition by correcting the problems in infant and young child feeding and caring practices. The use of the new WHO standards will emphasise the importance of nutrition and health education in achieving the goals set for exclusive breast feeding and timely adequate complementary feeding and through them ensure that there is significant reduction in under-nutrition rates. There is however another problem to guard against. Use of the new WHO standards will result in some reduction in the under-nutrition rates in children after the first year of age. It is important to guard against complacency because of an apparent drop in the under-nutrition rates when the new WHO standards are used.