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The Determination of National Growth Charts to Prevent and Manage Malnutrition in Iranian Children: Necessity and Importance

Mrs. ABTAHI, Mitra¹; Mrs. DOUSTMOHAMMADIAN, Aazam¹; Dr. POURARAM, Hamed²

¹ Nutrition Research Department, National Nutrition and Food Technology Research Institute, Faculty of Nutrition Sciences and Food Technology, Shahid Beheshti University of Medical Sciences, Tehran, Islamic Republic of Iran

² Tehran University of Medical Sciences (TUMS)

Corresponding Author: mitra_abtahi@yahoo.com

Objectives: Standard height and weight charts are the most important evaluation tools for the assessment of growth and development of children which could be further used to develop preventive interventions both in individual and epidemiologic assessments in the community. Children of different populations differ a lot in size and shape, resulting from differences in their genetic pattern, their needs and interaction of these two. Regarding the existence of different standards, it seems that a national standard can provide a more accurate functional individual and social evaluation tool and many problems will be solved in case of availability of an Iranian standard for comparison of children's height, weight, and their growth follow-ups. One of these problems is the abnormal results regarding malnourishment, overweight, or obesity in Iranian children. Considerable rate of childhood malnutrition in Iran and other countries necessitates the implementation of interventional programs including development of local growth charts to prevent and manage malnutrition in the community.

This study was undertaken with the aim of reviewing different current growth curves, their advantages and disadvantages, and performing a review of the studies conducted in Iran and other countries on determination of weight and height standards.

Methods: In order to collect materials for this review, a detailed search of Scientific Information Database (SID), Iran Medex, MEDLINE, Pub Med, and Web of Science was carried out for the time period 2005-2011 using the keywords: national standard, height, weight, children, and growth chart. Initially, we reviewed international standards of weight and height.

Results: The results of performed studies in European and Asian countries showed that the height and weight curves of these children were different from WHO and NCHS growth standards. The finding of growth trend study of Iranian children showed that the mean height and weight of girls and boys were increased. In spite of these increases, the median height and weight of Iranian girls and boys under 15 years was under 20th percentile of the United States National Center for the Health Statistics.

Conclusions: Considering the epidemiological changes and existing genetic differences and different children's weight and height growth patterns, it seems that the global standard for the children's growth, including the WHO standards, are not applicable to all the populations.

The result of a study about growth trend of Iranian children and teenagers showed that the mean height and weight of girls and boys have increased. In spite of these increases, the median height and weight of Iranian girls and boys aged less than 15 years was under 20th percentile of the US National Center for the Health Statistics. This shows the necessity of cultural education along with the economic development in order to eliminate the gaps in growth and development of infants and children. Hence, it is suggested that, as one of the major decision-makers, the Iranian Ministry of Health and Medical Education with the cooperation of educational and research centers makes an effort for determination of locally height and weight standards.