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Longitudinal development and tracking of anthropometric risk indicators for under-nutrition of Lephalale rural children, South Africa: Ellisras longitudinal study

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A total of 2 225 children (550 in pre-school with a mean age of 4.4 years and 1 675 in primary school with a mean age of 8.0 years) at baseline were followed throughout the period of the survey from November 1996 to May 2003, and participated in the Ellisras Longitudinal Study. Twice a year, height, weight, triceps, and arm girth were measured according to the standard procedure of the International Society for the Advancement of Kinanthropometry. To assess under-nutrition, the mid-arm muscle area below the 5th percentile by age and gender, and the Z-score below the -1.650 were used. The mid-arm muscle area showed a low correlation coefficient with increasing age for both the pre-school and primary school children, while the Z-score showed a moderate correlation coefficient with increasing age. The longitudinal tracking coefficient derived from generalized estimating equation for absolute body size, Z-score, and mid-arm muscle area were low. The prevalence of low weight and stunting increasing with age were observed in both pre-school and primary-school children. From a preventive point of view, tracking coefficients were too low to be of predictive value. Large-scale screening of under-nutrition is not recommended; community-based programmes, rather, which aim to modify health behaviour, should be introduced to prevent the development of malnutrition factors, associated morbidity, and mortality.

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