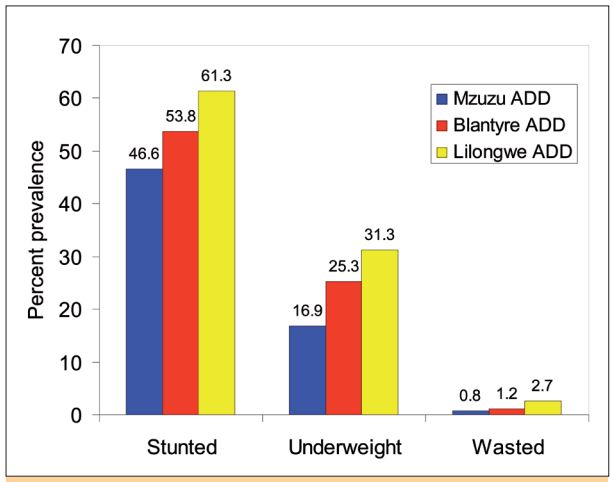

Fig. 1. Prevalence of stunting, underweight and wasting in preschool children from Mzuzu, Blantyre and Lilongwe ADDs. Using Pearson χ^2, both stunting and underweight were significantly lower in Mzuzu than Lilongwe ADD ($\chi^2 = 8.61$, $p = 0.003$; and $\chi^2 = 11.72$, $p = 0.0006$, respectively). χ^2 analysis was not possible for wasting because of inadequate count in some cells.

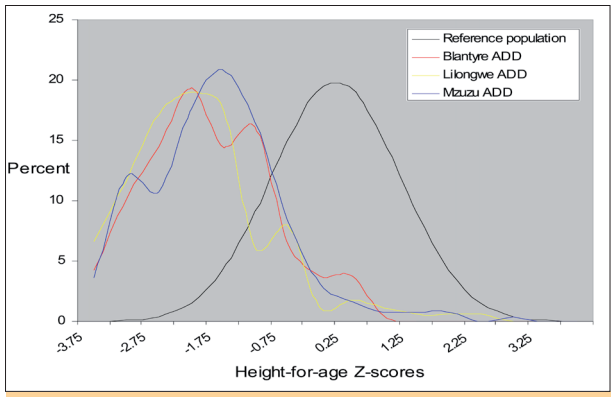

Fig. 2. Distribution of height-for-age z-scores of children from Blantyre, Lilongwe and Mzuzu ADDs compared with the NCHS/WHO reference population.

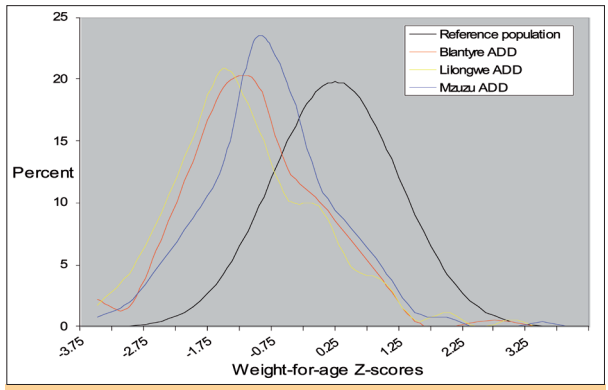

Fig. 3. Distribution of weight-for-age z-scores of children from Blantyre, Lilongwe and Mzuzu ADDs compared with the NCHS/WHO reference population.

Recently, Nube and Sonneveld[16] showed distinct patterns in the distribution of underweight in Africa, which compelled them to suggest that it would be essential to tackle nutrition issues in Africa according to regional distributions of the problem. The present study goes even further to suggest that within a small

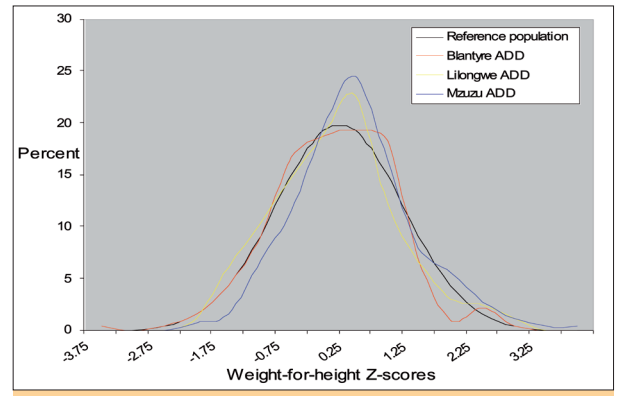

Fig. 4. Distribution of weight-for-height z-scores of children from Blantyre, Lilongwe and Mzuzu ADDs compared with the NCHS/WHO reference population.

and presumably homogeneous country such as Malawi, there is a need to recognise the unique heterogeneity of agro-ecological zones, and how each of them can potentially have an impact on nutrition interventions. Wobst *et al.*[5] observed that the three ADDs of Blantyre, Lilongwe and Mzuzu are highly heterogeneous. For example, Blantyre ADD has the highest land constraints compared with Lilongwe and Mzuzu ADDs. Hence, it would be logical to suggest that there are diversities in livelihoods (such as access to farming land, food, sanitation, and socio-economic services) of inhabitants of these areas, which ultimately has a substantial impact on nutritional wellbeing.

The basic, underlying and immediate causes of malnutrition are well known and have been summarised by UNICEF through the conceptual framework of the causes of malnutrition.[15] In the present study we did not investigate the different determinants of malnutrition in each of these areas. However, synergistically the causes of malnutrition are likely to have varying degrees of impact on the magnitude of malnutrition from one area to another depending on an array of potentiating factors. We recommend that unlike the current practice where blanket national recommendations are made for implementation in Malawi as a whole, the ongoing decentralisation programme should be an opportunity for nutrition managers in various areas to start identifying priority interventions that are likely to address the most important causes of malnutrition in their agro-ecological zones. Such a process should start with the assessment and prioritisation of the determinants of malnutrition in each area. Because the agro-ecological zones are unique in many social and economic aspects, we avoid making specific recommendations on interventions at this stage as that will defeat the very purpose of developing area-specific strategies.

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