

Letter to the Editor

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Not all dietary diversity scores can legitimately be interpreted as proxies of diet quality

Madam

We read with great interest the recently published article 'Farm production, market access and dietary diversity in Malawi' by Koopmair and colleagues⁽¹⁾. This work directly follows on another article from the same research group on the link between farm species diversity and dietary diversity in several developing countries⁽²⁾, which had triggered a rich and constructive debate^(3–6). With reference to the recent paper, we would like to raise a new point regarding the use of dietary diversity indicators which we believe is crucial in the context of studies of linkages between agriculture, markets and nutrition.

In their study, Koopmair and colleagues collected 24 h dietary recall data of household members combined, as well as of individual children below the age of 5 years and of their mothers⁽¹⁾. They calculated dietary diversity scores at household and individual levels using the twelve food groups recommended for calculation of the Household Dietary Diversity Score (HDDS)⁽⁷⁾ and interpreted these scores as proxies of dietary quality⁽¹⁾. As public health nutritionists, we strongly question this interpretation.

As stated by FAO guidelines⁽⁷⁾, as well as in a recent review by Leroy and colleagues⁽⁸⁾, the HDDS is a proxy indicator of household economic access to food whereas individual dietary diversity scores were developed as proxies of diet quality. More precisely, the Women Dietary Diversity Score (WDDS)⁽⁷⁾ and the Minimum Dietary Diversity for Women of Reproductive Age (MDD-W)⁽⁹⁾ were validated as indicators of micronutrient adequacy of women's diets, and the Infant and Young Child Dietary Diversity Indicator⁽¹⁰⁾ was validated as an indicator of adequacy of micronutrient density of complementary foods for infants and young children aged 6–23 months.

Three food groups included in the HDDS, namely Oils and fats, Sweets and Spices/condiments/beverages, are not included in any of the recommended individual diversity scores because they do not provide any essential micronutrients. Moreover, micronutrient-rich foods groups of the individual dietary diversity indicators are categorised differently compared with the HDDS. For example, the food groups 'Vegetables' and 'Fruits' of the HDDS are disaggregated into the groups of 'Dark green leafy vegetables', 'Other vitamin A-rich fruits and vegetables', 'Other vegetables' and 'Other fruits' in the MDD-W in order to better reflect the different content in micronutrients of these food groups. Therefore, we invite Koopmair and colleagues to

use a food group classification recommended for individual dietary diversity scores in order to legitimately interpret their results in terms of dietary quality.

Furthermore, it would be interesting to see whether their suggestion that 'household-level food consumption data (...) can be used for broader questions of dietary quality without introducing a significant bias' still holds when appropriate individual dietary diversity scores are used.

More generally we recommend that researchers who study the complex linkages between agriculture and nutrition in developing countries by using dietary diversity proxies use the validated indicators described in consensus publications such as the WHO guidelines regarding infants and young children aged 6–23 months and the FAO–Food and Nutrition Technical Assistance Project manual regarding the indicator for women^(11,12).

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