Minimum Dietary Diversity for women of reproductive age: methodological development of the indicator and current challenges

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A good nutrition of women of reproductive age (WRA) is a key element to reach the Sustainable Development Goal number 2. Poor diets lead to malnutrition and represent the top risk factor driving the global burden of diseases. Yet, the quality of diets is poorly measured worldwide because undertaking gold standard quantitative dietary surveys is out of reach for most countries. Proxy indicators reflecting food group diversity represent therefore an alternative to assess and monitor diet quality. Previous work demonstrated consistent relationships between simple food group indicators (FGI) and micronutrient adequacy in groups of WRA. However, for operational and advocacy purposes there was a strong demand for an internationally agreed-upon FGI that can be expressed in terms of prevalence of women meeting an acceptable level of diversity. This paper reports on the development of such an indicator, called "Minimum Dietary Diversity" for WRA (MDD-W). Nine datasets containing good-quality food consumption data of WRA in various contexts were analysed. Sample size varied from 102 to 954 women. Currently recommended approaches were used to assess the probability of adequacy (PA) for 11 micronutrients and the "mean probability of adequacy" (MPA) was constructed to summarize adequacy across the 11 micronutrients. For each dataset various candidate FGI were considered, comprised of 7, 9, 10 or 12 food groups. Correlations and simple linear regressions were used to describe relationships between each candidate FGI and energy intake, PAs and MPA. The performance of the candidate indicators in predicting different thresholds of MPA (0.50, 0.60 or 0.70) was assessed using receiver-operating characteristics (ROC) analysis. Potential dichotomous indicators were identified, according to various FGI cut-offs, by examining their sensitivity, specificity and total misclassification associated with each MPA threshold, across all datasets. The analysis led to consider two "best candidate" dichotomous indicators based either on a 9-point or on a 10-point food group score. During a large consensus meeting of experts results were reviewed and discussed against additional criteria such as nutritional meaning, possible use/misuse at the global level and practical advantages or drawbacks. Participants reached a unanimous decision to recommend adoption of the MDD-W, defined as "the proportion of women 15-49 years of age who consumed food items from at least five out of ten defined food groups the previous day or night". They also highlighted areas of need for future research to optimize field administration of the indicator and to validate the MDD-W for tracking purposes.

Keywords: dietary quality, proxy indicators, micronutrient adequacy, resource-poor settings