

## **Seasonal Variations in Dietary Diversity and Nutrient Intakes of Women and Their Children (6–23 Months) in Western Kenya**

Seasonal variations in food availability and access contributes to inadequate nutrient intakes, particularly in low income countries. This study assessed the effect of seasonality on dietary diversity (DD) and nutrient intakes of women and children aged 6–23 months in a rural setting in Western Kenya. A longitudinal study was conducted among 426 mother-child pairs during the harvest and post-harvest seasons in 2012. Dietary intakes were assessed using 24-h dietary recalls and dietary diversity scores (DDS) and nutrient intakes calculated for both seasons. Effect of seasonality on women dietary diversity scores (WDDS) and children's dietary diversity scores (CDDS) were assessed using generalised linear mixed models (GLMM). The proportion of women consuming diets with high DDS (>4 out of 9 food groups) increased from 36.4 to 52.4% between the two seasons, with mean WDDS being significantly higher in November compared to

July/August ( $4.62 \pm 1.43$  vs.  $4.16 \pm 1.14$ ,  $P < 0.001$ ). A significantly higher proportion of children consumed foods from  $\geq 4$  out of 7 food groups in November compared to July/August (62.4 vs. 52.6%,  $P = 0.004$ ). Mean CDDS (3.91 vs. 3.61,  $P = 0.004$ ) was low but significantly higher in November compared to July/August. Estimated marginal mean WDDS increased from 4.17 to 4.38, and decreased for CDDS from 3.73 to 3.60 between the seasons. Seasonality had a small but significant effect on WDDS,  $P = 0.008$  but not on CDDS,  $P = 0.293$ . Increase in CDDS in November was due to age and not seasonal effect. Higher women education and household food security were associated with higher WDDS and CDDS. Intakes of iron, calcium and vitamin E were higher among women in November and significantly different between the seasons.

Agro-ecological zone, ethnic group and home gardening influenced nutrient intakes of the women. Seasonality had an effect on the DD of women but not of children, thus other factors apart from food availability influence the quality of children's diets during the complementary feeding period. With increasing age and transition to family foods, children's DD is expected to be affected by seasonality. Integrated interventions to alleviate seasonal food insecurity and strengthen rural households' resilience against seasonal deterioration in diet quality are recommended.