P27-035-25 Nutrition Supplement Use Among Lactating Mothers in the MOM2CHild Cohort

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Objectives: According to the United States Department of Agriculture (USDA) dietary guidelines, nutrients of concern during lactation are choline, folate, iron, iodine, eicosapentaenoic acid (EPA)/docosahexaenoic acid (DHA), vitamin A, and vitamin D. Therefore, our objectives were to describe the supplement behavior for these 7 nutrients among lactating mothers in Cincinnati, Ohio.

Methods: The MOM2CHild sub-cohort study enrolled expectant mothers in the third trimester of pregnancy who planned to exclusively breastfeed for at least 1 month and followed up with home visits at 2 and 6 weeks postpartum. At the home visit, we recorded supplement use in the last 7 days. We summarized intake via supplements for the 7 nutrients of concern, including the proportion of supplement intake below 50% and above 100% of the recommended dietary allowance (RDA), and the upper limit (UL).

Results: The study included 90 lactating mothers between 24-44 years old. At 2 and 6 weeks postpartum, 83% and 80% of participants were taking any dietary supplement, with 79% and 71% taking prenatal supplements. In week 2, the proportion of participants with intakes from dietary supplements below 50% of the RDA was highest for choline (20%) followed by vitamin A (16%), DHA/EPA (15%), iron (1%), and vitamin D (1%). Intakes exceeding 100% of the RDA were most common for iron (83%), followed by folate (69%), vitamin D (67%), DHA/EPA (3%), iodine (3%), and vitamin A (3%). Exceeding the UL was reported for folate (17%), iron (9%), and vitamin D (4%). Results at week 6 were nearly identical.

Conclusions: This study highlights concerns regarding oversupplementation of folate and iron and potentially inadequate choline, vitamin A and DHA/EPA intake. These findings emphasize the need for targeted nutritional guidance on supplement use specifically during lactation.

Funding Sources: NICHD R01HD109915, NIAID U01A1144673.

Current Developments in Nutrition 9 (2025) 106820
https://doi.org/10.1016/j.cdnut.2025.106820

P27-036-25 Performance of Metrics From the Diet Quality Questionnaire (DQQ) for Predicting Human Milk Micronutrient Concentrations Among Lactating Women From Northern Ghana

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Objectives: Diet quality metrics are increasingly used for population assessments, but their utility for assessing micronutrient deficiency risk among breastfeeding dyads is uncertain. We aimed to assess and compare the convergent validity of the Global Dietary Recommendations (GDR) and Dietary Diversity (DDS) scores from the Diet Quality Questionnaire (DQQ) for predicting human milk concentrations of vitamins A (VA) and B12.

Methods: We analyzed data from lactating participants (15-49 y, 4-18 mo postpartum at enrollment) in the CoMIT trial. GDR (range 0-18) and DDS (range 0-10) were calculated from DQQs administered at four visits (wk 0, n=599; wk 4, n=545; wk 8, n=540; wk 12 n=299). Milk samples collected at wks 11-12 were analyzed for fat (Creamatocrit), VA (HPLC) and B12 (immunoassay). Spearman rank correlations (rho) determined associations between monthly scores and milk micronutrients. Steiger tests compared the predictive performance of the GDR and DDS. Receiver operating characteristic (ROC) curves assessed the performance of each metric against inadequate infant B12 and VA intakes (low milk concentrations: B12 [$\leq$310 pmol/L], VA [$\leq$28 nmol/g fat]). Optimal performance was defined as area under the ROC curve (AUC) $\geq$ 0.7.

Results: Longitudinal dietary patterns were consistent; monthly mean scores ranged from 12.1-12.2 (GDR) and 4.0-4.5 (DDS). Prevalence of low milk VA and B12 was 26% and 79%, respectively. Statistically significant ($p < 0.05$) correlations were observed between GDR and milk VA (wk 8, rho=0.17) and B12 (wk 0, rho=0.11) and between DDS and milk VA (wk 8, rho=0.22) and B12 (wk 8, rho=0.09), but not at other timepoints. DDS significantly outperformed GDR at predicting both nutrients, except for B12 at wk 0. Monthly AUCs were low, ranging from 0.50–0.60 (DDS) and 0.50–0.58 (GDR) for low milk VA, and for low milk B12, 0.51–0.61 (GDR) and 0.51–0.57 (DDS).

Conclusions: Despite the low dietary diversity observed in this population (DDS < 5), which is consistent with prevalent low milk VA and B12, high population GDR scores ($\geq$10) suggested overall good diet quality. While DDS outperformed GDR, both metrics showed weak, inconsistent relationships with milk VA and B12, indicating limited utility for assessment of micronutrient deficiency risk among breastfeeding dyads in this context.

Funding Sources: Helen Keller International via Bill & Melinda Gates Foundation.

Current Developments in Nutrition 9 (2025) 106821
https://doi.org/10.1016/j.cdnut.2025.106821