

Fortified blended flour supplements displace plain cereals in feeding of young children

Research snapshot¹

Growth faltering often occurs during the period of complementary feeding, from six to 20 months of age, when the child is transitioning from exclusive breastfeeding to a family diet. In the Sahel, most complementary foods are composed of cereals that are often combined with sugar and water to make a porridge. This may provide sufficient dietary energy but lacks the protein, fats and micronutrients needed for optimum child growth and development. Lipid-based nutritional supplements (LNS) and fortified blended flours (FBF) are widely used to increase the nutrient density of children's diets in supplementary feeding programmes but their effectiveness can be modified by the displacement of other foods: if supplements replace plain household cereals but not more nutrient-dense family foods, the nutrient-density of the diet would improve; if, however, supplements displace nutrient-dense foods, the diet quality could worsen.

To explore this issue, the authors reanalysed data from a trial comparing the cost-effectiveness of three FBFs and one LNS in the prevention of stunting and wasting among infants aged seven to 23 months in Burkina Faso. Using logistic regression, the differential effects of these supplementary foods on the displacement of breastfeeding or household complementary foods were explored and which specific food groups were displaced was investigated.

Supplementation with FBFs displaced household cereal consumption significantly when compared to supplementation with LNS. The relationship was strongest for two of the three FBFs tested (CSB+ w/oil and CSWB w/oil). While there was some evidence that the third FBF tested (SC+) may also displace more vitamin A-rich fruits and vegetables than the LNS product tested, children who consumed SC+ were also more likely to eat other fruits and vegetables

indicating that those who consumed SC+ consumed similar amounts of fruits and vegetables as those in the other study arms, although of different types. Consumption of other foods, dietary diversity and breastfeeding did not differ significantly.

Evidence from this study that FBFs displace household cereals but not other more nutrient-dense foods may assuage concerns that supplementary foods have limited effectiveness due to the displacement of household foods. Given the small stomach size and limited feeding time of infants, this displacement of unfortified household cereals by fortified flours may be beneficial for infants in the meeting of their nutrient needs.

¹ Cliffer, I R, Masters, W A, Rogers, B L (2020) Fortified blended flour supplements displace plain cereals in feeding of young children. *Matern Child Nutr.* e13089. <https://doi.org/10.1111/mcn.13089>

Effectiveness of breastfeeding support packages in low- and middle-income countries for infants under six months

Research snapshot¹

Small and nutritionally at-risk infants under six months of age, defined as those with wasting, underweight or other forms of growth failure, are at high risk of mortality and morbidity. The World Health Organisation 2013 guidelines on severe acute malnutrition highlight the need to effectively manage this vulnerable group but programmatic challenges are widely reported. At the core of these guidelines is support for breastfeeding. Previous systematic reviews have examined interventions to promote breastfeeding but most

of these focused on the general infant population. This review aims to address the evidence gap on how to best support breastfeeding in a sub-population of small and nutritionally at-risk infants under six months of age in low- and middle-income countries (LMICs) by synthesising evidence on existing breastfeeding support packages for all infants under six months of age.

The authors searched PubMed, CINAHL, Cochrane Library, EMBASE and Global Health databases from inception to 18 July 2018. Inter-

ventions of interest were breastfeeding support packages. Studies reporting breastfeeding practices and/or caregivers'/healthcare staffs' knowledge/ skills/practices for infants under six months from LMICs were included. Of 15,256 studies initially identified, 41 were eligible for inclusion, representing 22 geographically diverse LMICs. Interventions were mainly targeted at mother-infant pairs and only 7% (n = 3) studies included at-risk infants. Studies were rated to be of good or adequate quality. Twenty studies focused on hospital-based interventions, another 20 on community-based and one study compared both. Among all interventions, breastfeeding counselling (n = 6) and education (n = 6) support packages showed the most positive effect on breastfeeding practices followed by breastfeeding training (n = 4), promotion (n = 4) and peer support (n = 3). Breastfeeding education support (n = 3) also improved caregivers' knowledge/ skills/practices.

The identified breastfeeding support packages can serve as 'primary prevention' interventions for all infants under six months in LMICs. For at-risk infants, these packages need to be adapted and formally tested in future studies. Future work should also examine the impacts of breastfeeding support on anthropometry and morbidity outcomes.

¹ Rana, R, McGrath, M, Sharma, E, Gupta, P, Kerac, M (2021) Effectiveness of Breastfeeding Support Packages in Low- and Middle-Income Countries for Infants under Six Months: A Systematic Review. *Nutrients.* 2021; 13(2):681. <https://doi.org/10.3390/nu13020681>



A mother breastfeeds her malnourished 14-day-old son at a health centre in Somalia

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