

Fabrizio CS, van Liere M, Pelto G. **Identifying determinants of effective complementary feeding behavior change interventions in developing countries.** *Maternal and Child Nutrition*, 2014; 10. 575-592.

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Introduction

The time from 6 to 23 months of age is a critical period for a child's physical growth with possible long-term consequences (1). Behavior change interventions (BCI) to improve complementary feeding practices are one of the potential intervention strategies to ensure adequate child nutrition and linear growth (2). Complementary feeding recommendations include the timely introduction of safe and nutritionally adequate foods at 6 months of age in addition to continued breast-feeding (3).

This issue of NNA summarizes a review published recently in *Maternal and Child Nutrition* by Fabrizio et al. (4) to describe key characteristics of successful complementary feeding BCIs in low-income countries. The term BCI refers to programs that are designed to change behaviors of program recipients and/or the actors in the delivery system, and which may include related interventions such as food and nutrient supplementation and improved access to health care.

Methods

The authors conducted a computerized bibliographic search for peer-reviewed articles, and examined the websites of the World Health Organization (WHO), UNICEF, the World Bank and CORE Group as well as the reference lists in published studies. Peer-reviewed articles were eligible if they: 1) evaluated complementary feeding interventions, 2) described behavior change strategy development and implementation, 3) were conducted in low-income countries, and 4) reported outcomes for children aged 6-24 months. Complementary feeding interventions that were considered included the use of family foods, and the provision of supplements or commercially available, fortified complementary foods. BCI targeting breastfeeding were eligible for inclusion in this review only if they targeted the age group of 6-24 months (i.e. focusing on continued breastfeeding during the period of complementary feeding).

Results and Conclusions

The bibliographic search identified 29 eligible studies conducted in 13 countries (Bangladesh, Brazil, China, Ecuador, India, Indonesia, Iran, Kenya, Madagascar, Malawi, Mexico, Peru and Vietnam). Twelve of these studies were efficacy studies, mostly designed as cluster-randomized trials. Seventeen were effectiveness studies using a randomized or quasi-experimental design. Sample sizes ranged from 105 to 1200 children per study, which provided sufficient statistical power to permit detection of meaningful differences in feeding practices and growth outcomes. There was a wide variation in study duration, ranging from 1 months to 5 years.

Most interventions reported on the use of formative research to help identify local practices and barriers or enablers to optimal feeding practices, and most studies adapted messages and interventions around infant and young child feeding recommendations to the local context. However, only 9 studies reported how the feeding messages were developed, and most reports provided only a general summary of messages. The number of messages ranged widely from 4 in a study in Peru (5) to 18 in Iran (6). The majority of

interventions were delivered through facilitators (either paid or volunteer); and multiple instruction and communication techniques were used, including active learning, sustained recall and recipe demonstrations.

Among the 22 studies that assessed growth as an outcome, 19 reported a significant increase in physical growth in the intervention groups (mostly as weight gain), although some publication bias has been identified. Eleven studies assessed the impact of dietary supplements or fortified foods in addition to BCI. Compared to the control groups, the groups receiving BCI plus a dietary supplement demonstrated greater weight gain than BCI alone.

The BCI strategies and study design used were very diverse, limiting the generalizability of the findings. Nevertheless, among the 29 studies reviewed, two major determinants of effective complementary feeding BCIs were identified: 1) the use of formative research to identify cultural barriers to and enablers of optimal complementary feeding practices, and 2) the analyses of program impact pathways to specify the target behavior changes and the intermediary activities required to achieve these behavior changes. The authors also recommended that evaluation studies should provide more comprehensive reporting and a more strategic research agenda to create the evidence base needed.

Policy and Program Implications

Although information on the impact of BCI on improving complementary feeding practices and healthy growth is increasing (7), the BCI implemented in the 29 reviewed studies varied greatly, making it difficult to draw a general conclusion. Formative research was identified as a key factor for the success of the BCI strategy. The authors highlighted that it was not only important to use the findings of formative research to inform the BCI strategy, but also to publish details on methodology and conclusions drawn so that others can learn from these lessons. Fabrizio et al. (4) also recommended the use of program impact pathway analysis to guide the development and necessary in-course corrections of BCI programs. A good example of using program impact pathway analysis for these purposes was published by Rawat et al. (8).

NNA Editors comments

Despite the growing evidence of the positive impact of complementary feeding BCI, Lutter et al. (9) recently reported that there are very few large-scale complementary feeding programs at scale successful in promoting healthy growth at the community level. One of the reasons identified was the lack of process and impact evaluation of pilot projects. Systematic planning and documenting implementation and evaluation are key to recognize lessons learned and guide scaling up.

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