Editorial

The crisis of poor complementary feeding in South Asia: where next?

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South Asia carries the highest burden of childhood undernutrition in the world with close to 50% of the world's undernourished children living in this region (Black *et al.* 2008). A combination of complex biological, behavioural and social factors underpins the high burden of undernutrition in this region. Critical factors related to child undernutrition in South Asia include poor maternal nutrition and early childbearing, low status of women, high levels of poverty and food insecurity, social inequity, a high burden of infections and poor care and feeding practices. Poor infant and young child feeding (IYCF) practices are recognized as a significant contributor to undernutrition globally (Dewey & Brown 2003; Daelmans *et al.* 2009; Lutter *et al.* 2011), and interventions to improve breastfeeding and complementary feeding practices are among the globally recommended core package of direct nutrition interventions (Bhutta *et al.* 2008; Bezanson & Isenman 2010).

Over the past 2 years, the work of the South Asia Infant Feeding Research Network (SAIFRN) has helped to systematically unpack the status of IYCF practices in the region through the use of nationally representative data sets, and the determinants of these practices. In a recent supplement in the *Food and Nutrition Bulletin*, SAIFRN examined breastfeeding practices and their determinants (Dibley *et al.* 2010). In this supplement of *Maternal and Child Nutrition*, SAIFRN brings together a critical body of evidence on complementary feeding practices (Senarath & Dibley 2011). The analyses summarize the findings on four important indicators of complementary feeding across five South Asian countries (Bangladesh, India, Nepal, Pakistan and Sri Lanka). The indicators of complementary feeding covered in the analyses are: age-appropriate introduction of complementary foods

among children 6–8 months of age, minimum dietary diversity, minimum meal frequency, and minimum acceptable diet (a summary variable that captures dietary diversity, meal frequency, and consumption of either breast milk or other sources of dairy).

The analyses on the status of the indicators, summarized in the final paper of this supplement (Senarath *et al.* 2011), provide a useful comparison of complementary feeding practices across the region. Other than Sri Lanka, where all four indicators are above 65%, in the other countries where data are available, complementary feeding practices are poor. The rates range from an abysmally low proportion of children who meet the indicator cut-offs for a minimum acceptable diet (9.2% in India) to a high proportion of children who achieve minimum meal frequency (88.3% in Sri Lanka). For Pakistan, a lack of data precludes conclusions about three of the four indicators, and the available data on the timely introduction indicator show a very low proportion (39.2%). Thus, for Pakistan, a priority must be to generate data on these indicators.

The analyses on predictors of poor complementary feeding, also summarized in the final paper of this supplement, provide some critical insights for further research and interventions. First, they highlight the crisis of complementary feeding among infants 6–11 months of age. This is the age where complementary feeding practices are particularly inadequate, especially dietary diversity, meal frequency and minimum acceptable diet. The relevance of this finding is that this age period is also the period of the fastest growth faltering both in the region and globally (Victora *et al.* 2010); poor complementary feeding practices in this age group, therefore, can greatly increase the risk of growth faltering and can exacerbate the disadvantage

that a third of South Asian babies already have at birth because of their low birth weight. Second, the analyses also examine the roles of maternal and household factors such as maternal education and household wealth as predictors of complementary feeding practices. Even though the findings are not uniform, in all five countries, maternal education appears to be an important predictor at least of one complementary feeding practice, as does household wealth. The findings also indicate that the use of antenatal care and exposure to media predict better complementary feeding practices. Maternal education can be expected to lead to improved complementary feeding practices through a variety of routes, including improved knowledge, improved access to knowledge and health care and possibly access to more household resources, among others (Guldan *et al.* 1993). The findings related to maternal education, antenatal care visits and exposure to media offer support for intervention strategies that attempt to improve mothers' knowledge, beliefs and confidence about optimal complementary feeding practices. At the same time, the finding that household wealth constrains optimal complementary feeding is a reminder of the resource constraints that poor South Asian families are likely to face in adopting some of the World Health Organization (WHO)-recommended IYCF practices, for instance, in feeding animal-source foods (Saha *et al.* 2008). The wealth gradient in introducing complementary foods appears much greater in Pakistan than in India, but household wealth is a predictor of minimum dietary diversity in the four South Asian countries for which the variable is available, indicating the important role of household resources in determining complementary feeding.

Last, but not least, the findings highlight the important role of the variability *within* countries, especially in Bangladesh, India and Sri Lanka. This could denote economic, cultural, social and/or agro-ecological differences, all of which can influence complementary feeding. The findings on the role of the regional diversity within countries highlight the importance of ensuring that interventions to improve complementary feeding are based on robust formative research and adapted for the local context.

In looking forward, it is worth reflecting on what is needed to improve IYCF practices in the South Asia region. Three key issues are important to consider: (1) The extent to which programs are choosing to implement evidence-based interventions for improving complementary feeding in South Asia; (2) The presence of effective delivery mechanisms for these interventions; (3) The extent and nature of policy commitments to IYCF in the region.

On the first issue earlier, there exist proven interventions to improve IYCF practices and some of the evidence base for these interventions comes from the region (Bhutta *et al.* 2008; Dewey & Adu-Afarwuah 2008; Imdad *et al.* 2011a,b). This evidence suggests that, with some caveats around contextual factors, (1) breastfeeding promotion, peer counseling and lactation counseling are critical to improving exclusive breastfeeding; (2) effective behaviour change communication through individual counseling or group counseling can improve children's complementary feeding diets and nutritional outcomes; (3) micronutrient supplements and fortification can improve the micronutrient quality of children's diets and micronutrient status; and (4) food supplements help improve nutritional outcomes for children in this vulnerable age group. The broader question remains whether these intervention strategies are being effectively incorporated into nutrition strategies and plans in the region. A review of policy documents is beyond the scope of this editorial, but most countries in the region have now endorsed the WHO Global Infant and Young Child Feeding Strategy, and, in some cases, have also developed national IYCF strategies. This is an encouraging sign, and a movement in the right direction. A review of policies and programs to assess the presence/absence of evidence-based interventions, such as those recommended by the Scaling Up Nutrition framework (Bezanson & Isenman 2010), can help identify areas for immediate action, advocacy and policy support.

The second issue is whether delivery strategies that incorporate known efficacious interventions to improve IYCF practices are in place, and reaching communities, household and mothers in South Asian countries. Delivery strategies that include counseling

for IYCF can involve prenatal health contacts, home visits by health workers, postnatal health contacts, sick child visits and promotion via mass media, among others. A WHO nutrition policy review conducted in 2009–2010 (World Health Organization 2010), based on questionnaires sent out to countries, suggests that in all South Asian countries, interventions to promote IYCF are currently part of the program portfolios. However, there are numerous known challenges in relation to implementing IYCF-related programs in the region, and questions remain about whether the strategies being implemented are effective enough. For example, assessments of India's flagship nutrition program, the Integrated Child Development Service have indicated substantial challenges with effectively incorporating behaviour change communication (Gragnolati *et al.* 2005), but efforts to catalyse and support the program to enhance outreach and preventive counseling in homes were somewhat successful (Kumar *et al.* 2009). In Bangladesh, various phases of government programs for nutrition lacked a solid IYCF focus, and have had mixed success (Hossain *et al.* 2005; Martin 2009) but in recent years, IYCF has been prioritized and a national communications campaign for IYCF was launched in 2011.

A starting point for policy commitments to IYCF is the adoption of the Global Strategy for Infant and Young Child Feeding (World Health Organization & UNICEF 2003). Country-specific analyses of the status of implementation of the Global Strategy for IYCF (available at: <http://www.worldbreastfeedingtrends.org>) indicate that all five countries covered in this supplement appear to have adopted the WHO Global Strategy for IYCF and all also appear to have national IYCF strategies. However, there is substantial variability across the five countries in resources to implement and coordinate IYCF strategies. The WHO Nutrition Landscape Information System also reveals that there could be substantial overall policy challenges to moving the IYCF agenda forward in the South Asia region – nutrition governance is variable across the region, the presence of strong mechanisms to monitor the Code of Marketing of Breast Milk Substitutes is only seen in India, Sri Lanka and Nepal, and maternity leave policies range widely – from 52 days in Nepal to a full

6 months in Bangladesh. Although legislations such as the Code are relevant mainly to enable exclusive breastfeeding, they form an important mechanism to ensure a good start to IYCF, and are a marker of the overall commitment and resources available to address IYCF.

In concluding, the papers included in this supplement are a critical addition to the literature on child nutrition in the South Asia region. They draw attention to one of the crucial known contributors to child undernutrition, and lay bare the crisis of poor complementary feeding in the region. They also provide us with pointers towards target groups at the greatest risk for poor complementary feeding practices – infants 6–11 months of age, children of mothers with limited formal education, and children living in poor households. The findings are also indicative of positive practices within the region, particularly in Sri Lanka, as well as within each country; learning from these regional successes and intra-country variability can help provide contextually relevant lessons. However, the primary call-to-action from this supplement is that researchers in the region must mobilize to generate evidence on effective large-scale strategies to address this crisis, and that program planners and policymakers must mobilize, *urgently*, to scale up and sustain known effective strategies through the large-scale program delivery platforms across the region.

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Conflicts of interest statement

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