2 Breast Milk, Global Health and Sustainable Development

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Expected Key Learning Outcomes

- Why breastfeeding is so important
- How breastfeeding can help reduce the inequalities in health
- The health and economic benefits from increasing breastfeeding rates
- Reasons why mothers do not breastfeed despite all the evidence from research demonstrating the benefits
- The required change of policy focus needed to support a global increase in breastfeeding rates

2.1 The Importance of Empowered Mothers

Nature has empowered mothers with control over the production and distribution of an extraordinarily protective substance for the health and development of their babies — breast milk. This evolutionary innovation provides all of the nutrition an infant needs for the first six months of life and affords protection from infectious diseases, reduces the risk of sickness and death, and contributes to healthy digestive and brain development well into early childhood.

Unlike the vast majority of health interventions, breast milk is wholly owned and operated by mothers who function as "doctors" administering their "medicine". To unleash the protective powers of breast milk, mothers must not only be knowledgeable about the benefits of breast milk. They must also be freely able to exercise their choice to breastfeed, unfettered by external barriers. If mothers cannot breastfeed due to sickness or absence, they should be able to ensure that their babies have access to their own breast milk and, where that is not possible, to donor breast milk from the newborn period onwards.

It is critical that development actors confront the reality that for almost all mothers — an estimated 140 million women give birth every year — breastfeeding is not always a choice. Depending on the severity of the barriers, a mother may be so constrained by forces beyond her control (e.g., lack of education, lack of family support, the need to earn an income) that she cannot exercise a preference to breastfeed. For many tens of millions of mothers, breastfeeding is not possible in the environments in which they live. For these women, reducing or removing the external constraints is what will ultimately lead to sustained increases in breastfeeding.

Women facing the most significant barriers to breastfeeding are also most likely to live in communities where the costs of not breastfeeding fall most heavily on children. These are the populations where very low breastfeeding rates coexist with very high rates of newborn and child sickness and death. Empowering mothers in these high-risk environments to exercise a real choice to breastfeed in supportive homes, workplaces, and public spaces should be the primary focus of development efforts to increase breastfeeding rates.

2.2 The Benefits of Breast Milk

In the past 15 years the health benefits of breastfeeding have become extremely well known and extensively promoted. There is consensus among the global health community that breast milk confers its powerful protective properties on children by providing all of the nutrients, vitamins, and minerals children need in the first six months of life, alongside antibodies that combat infectious diseases, especially diarrhoea and pneumonia [1],

[2], and enzymes for optimal digestion. There is now widespread acceptance that the health benefits of breastfeeding continue well into early childhood, and potentially beyond. The benefits of breastfeeding for women include reduced risk of pregnancy and potentially lower lifetime risks of certain cancers, obesity, diabetes, and heart disease [3].

Several *Lancet* series on maternal, newborn, and child health and nutrition have laid out the evidence for the benefits of breast milk. The Maternal and Child Undernutrition Series [4], the Maternal and Child Nutrition Series [5], the Childhood Pneumonia and Diarrhoea Series [6], the Every Newborn Series [7], and the Breastfeeding Series [8] all cite evidence that breastfed babies are much more likely to survive the first six months of life [9], that initiation of breastfeeding within 24 hours of birth could reduce the risk of newborn death by 43% of all newborn deaths [10], [11], [12] and that breastfeeding could prevent 823,000 child deaths and 20,000 breast cancer deaths annually [13]. Other sources accord with these findings, including the Born Too Soon Report, which stresses the importance of breast milk for preterm babies [14], and the Global Burden of Disease Study 2016, which ranks "suboptimal breastfeeding" as a leading behavioural risk factor in child death, especially across African and Asian countries [15]. According to this body of evidence, no other single intervention has the power to prevent newborn and child deaths at the scale of breast milk.

There is less consensus about the long-term health and related benefits of breastfeeding for both breastfeeding mothers and breastfed infants. The many studies that report adult health benefits including reductions in heart disease, diabetes, and cancers; cognitive improvements including higher IQ; and even economic gains including higher educational performance and income [16] all suffer from methodological weaknesses as they are based on cross-sectional retrospective studies rather than randomised control trials. A recent meta-analysis of these studies cautioned that these methodological challenges limit the ability to draw firm conclusions [17], [18].

The 2016 *Lancet* Breastfeeding Series quantified the impact of these health and development benefits on healthcare costs and economic growth, reporting that increases in breastfeeding rates could save US$400 million in healthcare costs in the US, UK, Brazil, and China alone, and inject US$300 billion into economies from more productive workforces [19].

2.3 Breastfeeding as an Equity Strategy

Children born to low income families in high-risk environments disproportionately benefit from the special protective properties of breast milk because they are more likely to be exposed to infections exacerbated by poor living conditions and less likely to access quality healthcare as formal health services so often fail to reach them. A recent study reported that a 10% increase in breastfeeding prevalence across all households resulted in a larger absolute reduction in child deaths in the poorest households [20]. The authors concluded that breastfeeding is better positioned to reduce wealth-related child health inequalities than other interventions.

Although breastfeeding is one of the few health interventions where the gaps in coverage between high and low income households are narrow in low income countries, early and exclusive breastfeeding rates among poor families remain very low [21]. Globally, just 40% of infants from the poorest households are exclusively breastfeed for the first six months of life, and in many countries with the highest child mortality breastfeeding rates are even lower [22]. For example, the ten countries with the highest child mortality rates all have exclusive breastfeeding rates below 50% (▶ **Table 1.1**), and several have rates below 20%. Further, eight of the ten countries with the largest numbers of child deaths have exclusive breastfeeding rates below 50% (▶ **Table 1.2**). These include India, Nigeria, Pakistan, China, Democratic Republic of Congo, Indonesia, Angola, and the Philippines.

Despite recent improvements in breastfeeding rates in some countries, the rate of progress overall has been slow over the last 25 years [23].

▶ **Tab. 1.1** Breastfeeding rates in countries with the highest child mortality rates, 2015.

Country	Child Mortality Rate 2016	% Early Breastfeeding (0–1 hour) 2008–2015	% Exclusive Breastfeeding (0–6 months) 2008–2015
Angola	157	55	No data
Somalia	133	26	5
Chad	127	29	3
Central African Republic	124	44	34
Sierra Leone	114	54	32
Mali	111	46	34
Nigeria	104	33	17
Benin	98	50	41
Democratic Republic of Congo	94	52	48
Cote d'Ivoire	92	53	23
Niger	91	53	23
Global Average	41	43	40

Source: World Bank and UNICEF, latest.

▶ **Tab. 1.2** Breastfeeding rates in countries with the highest newborn and child deaths, 2015.

Country	Number Newborn Deaths (0–1 month, 2015)	Number Child Deaths (0–5 years, 2015)	% Early Breastfeeding (0–1 hour)	% Exclusive Breastfeeding (0–6 months)
India	696,000	1,201,000	41	62
Nigeria	240,000	750,000	33	17
Pakistan	245,000	432,000	18	38
China	93,000	182,000	41	28
Democratic Republic of Congo	94,000	305,000	52	48
Indonesia	74,000	147,000	49	42
Angola	53,000	169,000	55	No data
Sudan	39,000	89,000	73	55
Kenya	34,000	74,000	58	61
Philippines	30,000	66,000	50	27

Source: UNICEF, 2015 and World Bank, latest.

Among the 33 countries with the slowest rates of reduction in child mortality, only four have exclusive breastfeeding rates above 50% – Burundi, Togo, Papua New Guinea, and Lesotho [24]. This lack of improvement in breastfeeding rates in countries struggling to prevent child deaths implies that there are considerable equity gains to be made in targeting their most vulnerable populations for breastfeeding improvements, particularly in the countries with very low vaccination rates [25]. To

leverage the equity impact of breastfeeding in full both within and between countries, it is critical that the global development community prioritises breastfeeding support in the populations with the lowest absolute rates of breastfeeding and breastfeeding progress, the weakest health infrastructure, and the highest burdens of newborn and child death.

2.4 The Cost-Effectiveness of Breastfeeding

Like many prevention efforts, breastfeeding investments are highly cost-effective. The 2013 Lancet Maternal and Child Nutrition Series reports that breastfeeding promotion compares very favourably with other nutrition intervention packages and has the power to reduce hundreds of thousands of child deaths at an annual cost per life saved of $US175. Of ten single nutrition interventions assessed by The Lancet, only the management of severe acute malnutrition and preventive zinc supplementation saved more lives than breastfeeding promotion, and of four intervention packages modelled, only the management of acute malnutrition saved more lives at lower cost than breastfeeding promotion [26].

Further, the 2014 Lancet Newborn Series reported that the earlier breastfeeding support services reach mothers after birth, the greater the impact on newborn health and breastfeeding duration. The Series cited that education and counselling can improve exclusive breastfeeding rates by 43% the day after birth and by up to 30% in the first month after birth. Kangaroo mother care, a strategy that improves the health of babies born too small, also encourages breastfeeding, with studies showing a 27% increase in breastfeeding rates at one to four months after birth and an increased breastfeeding duration. This body of research estimates that where a specific population can achieve 90% coverage of breastfeeding promotion exclusive breastfeeding rates can increase by 15% in newborns and by 20% in children aged one to five months [27].

Yet despite the evidence of the cost-effectiveness of breastfeeding support programmes, international development spending on breastfeeding programmes has never been high. Indeed, it has been declining since the 1990s and is now at historically low levels relative to other health prevention areas, most notably vaccines and insecticide-treated bed nets [28]. The relatively high level of investment in vaccines and in malaria prevention is one of the reasons why they are responsible for preventing such a large proportion of child deaths since 1990 in so many countries [29]. The fact that breastfeeding contributed so little to the 50% reduction in child deaths achieved over the life of the Millennium Development Goals begs a critical question: Could we have actually achieved the 66% reduction in child deaths required to achieve Goal 4 with greater investments in breastfeeding promotion and support?

2.5 Breastfeeding's Poor Performance

Despite the significant health and equity benefits of breastfeeding, and the cost-effectiveness of breastfeeding support services, rates of breastfeeding in most countries fall below the World Health Organization's (WHO) recommendations (early initiation of breastfeeding within one hour of birth, exclusive breastfeeding until 6 months of age, and continued breastfeeding until 2 years of age or older), and the World Health Assembly's target of at least 50% exclusive breastfeeding [14]. Globally, just 40% of babies are breastfed exclusively for the first 6 months and 43% in the first hour after birth, far below the coverage rates achieved by other child survival interventions such as vaccines (86%), Vitamin A (72%), and skilled birth attendance (78%). Currently, only 32 countries have achieved the 50% exclusive breastfeeding target and many countries struggling with high burdens of newborn and child mortality have rates far below 50%.

Progress in closing the high breastfeeding coverage gaps has also lagged other areas of global health. According to the Countdown to 2015 Final