

*Review Article***Infant and Young Feeding Practices in India: Current Status and Progress Towards SDG Targets**ARUN GUPTA* and NEELIMA THAKUR
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Optimal breastfeeding and infant and young child feeding practices are critical to child's survival, health, nutrition and development. India has made progress in the early breastfeeding during first hour after birth and exclusive breastfeeding 0-6 months. However, complementary feeding is often delayed and inadequate both in quality and quantity. Low rates of key indicators in India might be due to several factors, including, inadequate attention to policy and programmes for removing barriers to optimal feeding practices, inadequate planning and budget allocation, poor support to women in public and private health facilities, continued aggressive promotion of commercial baby foods and inadequate structural support to women both formal and informal work places. India has provided sufficient inputs in some policies and programmes in the past decade. There is a need to strengthen implementation of existing policies as well as scale up programmatic interventions to reach all women and children.

Keywords : Initiation of Breastfeeding; Exclusive Breastfeeding; Complementary Feeding; Child Health; Child Survival

Introduction

Optimal feeding practices include initiation of breastfeeding within an hour of birth, exclusive breastfeeding for the first six months, continued breastfeeding for two years or beyond, along with adequate and appropriate complementary feeding beginning after six months. India's progress in each of these critical areas and current/reviewed status with a focus on policy and programmes that assist women in removing barriers to optimal feeding practices at home, at work and in the health facilities, is presented. The World Health Assembly (WHA) set targets on nutrition including increasing global rates of exclusive breastfeeding from 38% in 2012 to 50% 2025. India is committed to achieve these WHA (WHA, 2012) and Sustainable Development targets. Policy, strategy and programme initiatives needed to achieve the WHA targets are discussed.

Importance of Optimal Feeding Practices

Optimal feeding practices are very essential for babies

not because they are vulnerable but because it is the critical time when brain grows faster and maximum e.g. 80-85% brain growth takes place during first two years.

Early Breastfeeding Within one Hour of Birth

This and skin-to-skin contact provide immense benefits to both, the mother and the child. It can contribute a great deal to reduce neonatal infections and impacts infant mortality by 1.79 times (NEOVITA Study Group, 2016). It also helps in emotional bonding and maintenance of baby's temperature.

Exclusive Breastfeeding (0-6 months)

It confers several benefits. An analysis in Lancet 2016 (Victora *et al.*, 2016) concluded that scaling up breastfeeding (exclusive for first six months and continued for 12 months) to nearly universal levels could prevent nearly 50% of diarrhea episodes and 1/3rd of respiratory infections. It could save lives of more than 820,000 children worldwide. Breastfed children

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perform better on intelligence tests and are less likely to be obese or overweight and they are less prone to diabetes later in life. Breastfeeding makes an important contribution to women's health by reducing cancers.

“Despite a reported 55 percent exclusive breastfeeding rate in children below the age of six months, a large population in India and high under five mortality means that an estimated 99,499 children die each year as a result of diarrhea and pneumonia that could have been prevented through early initiation of breastfeeding, exclusive breastfeeding for the first six months, and continued breastfeeding. The high level of child mortality and growing number of deaths in women from cancers and type II diabetes attributable to inadequate breastfeeding is estimated to drain the Indian economy of \$7 billion. Together with another \$7 billion in costs related to cognitive losses, India is poised to lose an estimated \$14 billion in its economy, or 0.70 percent of its GNI” (Global Breastfeeding Collective, 2017). According to a study by the World Bank (Kakietek *et al.*, 2017), return on every dollar invested in reaching the global nutrition targets of exclusive breastfeeding is \$35. Breastfeeding activity generates almost zero carbon foot print and eco-friendly unlike infant formula (Dadhich *et al.*, 2015). Risks of introducing infant formula in infancy are well documented. Considering this, WHO has provided a guidance on acceptable medical reasons for giving breast milk substitutes (WHO guideline, 2009), as well as on how to keep it safe (WHO guideline, 2007).

Complementary Feeding

Ensuring optimal complementary feeding can prevent 6% of under-five deaths (Jones *et al.*, 2003). Exclusive breastfeeding and appropriate complementary feeding have the potential to simultaneously reduce the risk of wasting, stunting as well as overweight/obesity or diet-related NCDs (WHO, 2016). Dietary diversity in children in 6-23 months age group is a proxy marker for micronutrient density (NFHS-4).

Infant and Young Child Feeding Practices: Time Trends and Current Status

In terms of breastfeeding practices, India has come a long way since the decline in 70s and 80s of the last century (Walia *et al.*, 1987). Analysis of data on time

trends in infant feeding practices between NFHS-2 and NFHS-4 (Fig. 1) shows that there has been an increase in early initiation of breastfeeding and exclusive breastfeeding upto 6 months.

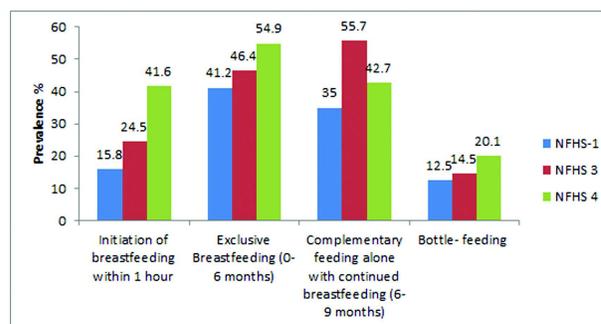


Fig.1 : Country level trends in major IYCF Indicators according to the NFHS -2,3,4. (Note: Complementary feeding data in NFHS 4 is for 6-8 months)

Early Initiation of Breastfeeding Within One Hour

Between NFHS-3 and 4, there has been an increase in early initiation of breastfeeding from 23.4 to 41.6%, (1.7% increase per year). State wise analysis reveals that there has been improvement from NFHS-3 levels (Fig. 2), except in Uttarakhand, Himachal Pradesh, and Tamil Nadu. The NFHS-4 also shows that 21% newborns receive pre-lacteal feeds (any feeds given before breastmilk is regularly given). While around 79% mothers had institutional delivery, only 41% succeed breastfeeding within an hour (Fig. 3). A substantial number of all institutional deliveries are happening in the private sector, and caesarean section rates are higher in private sector (17% of all deliveries, in private sector this is 41% of all deliveries). Women who had caesarean section need extra support. About 22% babies are born with low birth weight, they also need extra support. Some reports suggest that introduction of infant formula in private health facilities is fairly common.

Exclusive Breastfeeding During 0-6 Months

Data from NFHS- 4 indicate that during 0-6 months, 54.9% women exclusively breastfeed their infants (improvement of 1%/year as compared to NFHS-3). Most of the states except Arunachal Pradesh, West Bengal, Kerala, Karnataka, Chhattisgarh and UP, had shown an improvement (Fig. 4). Median duration of exclusive breastfeeding increased from 2 months to

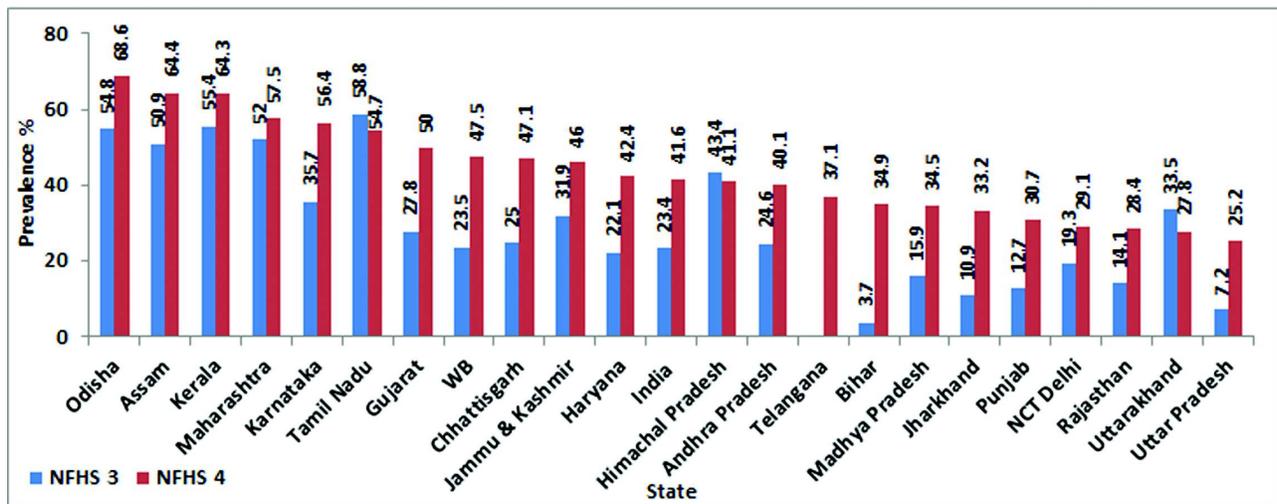


Fig. 2: State wise trends in initiation of breastfeeding < 1 hr of birth as per NFHS-3 and NFHS-4 data (Zero denotes lack of data)

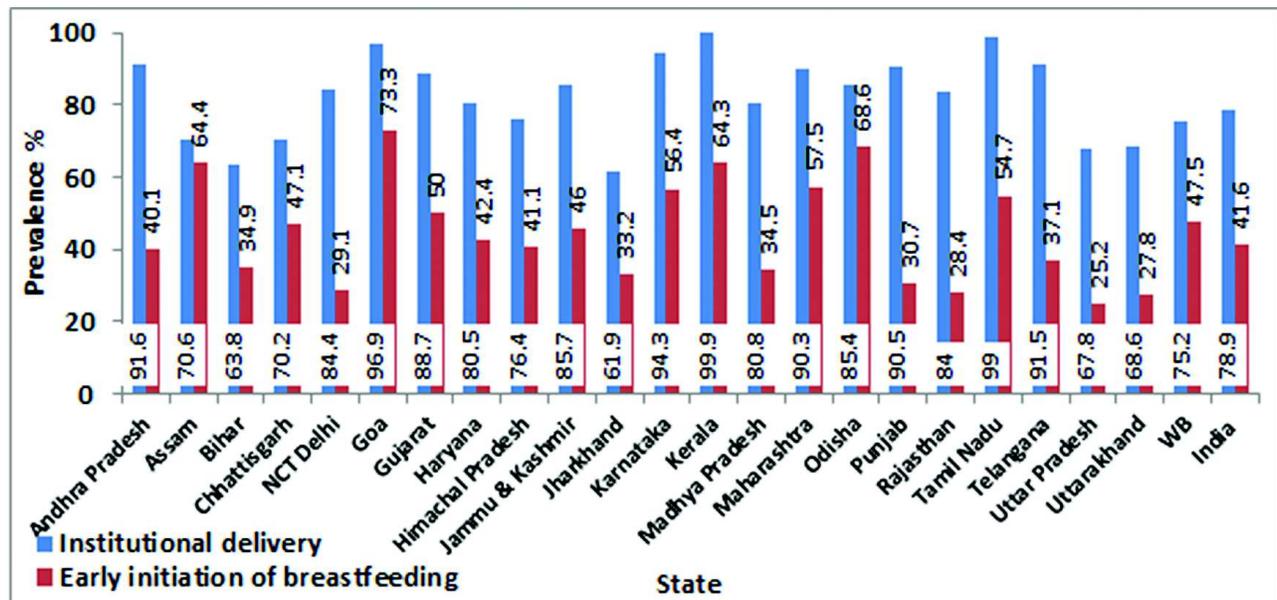


Fig. 3: State wise data on institutional delivery and initiation of breastfeeding within one hour of birth as per NFHS-4 data

2.9 months; exclusive breastfeeding rate at 6 months has gone up from 26 to 41%. It should be noted that 18% of infants received water, 11% received other milks and 10% received complementary foods during first six months (Fig. 5). Median Duration of Breastfeeding had increased from 24.4 in NFHS-3 to 30 months in NFHS-4.

Complementary Feeding

Data from NFHS-4 indicate that, 10% of infants receive complementary feeding before 6 months and only 42% of infants get complementary feeds

at 6-8 months (Fig. 6). Between NFHS-3 and 4, there has been a 10% decline in infants receiving complementary feeds in 6-8 months (Fig. 7). Only 9.6% children 6-23 months (1 out of 10) were reported to have received minimal acceptable diet, i.e. children get variety of at least 4 food groups to ensure nutrient intake e.g. fruits, vegetables, grains, pulses, oils etc. and with minimal meal frequency (Fig. 8). Among breastfed children, 32% consumed other liquids/milks, 38% ate fruits and vegetables and 13% consumed foods made from beans/lentils (Fig. 9).

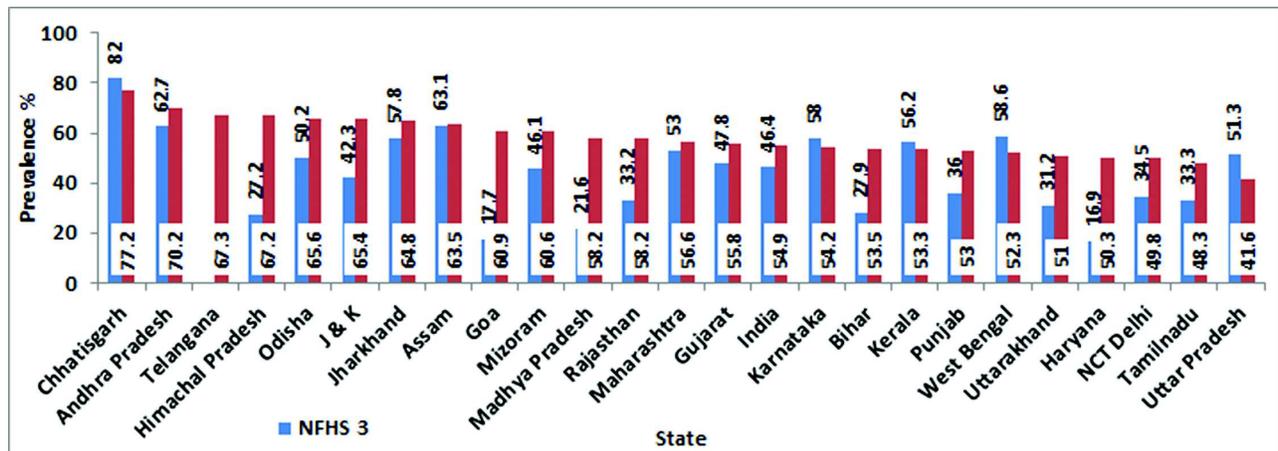


Fig. 4: State wise trends in exclusive breastfeeding below 6 months as per NFHS-3 and NFHS-4 data

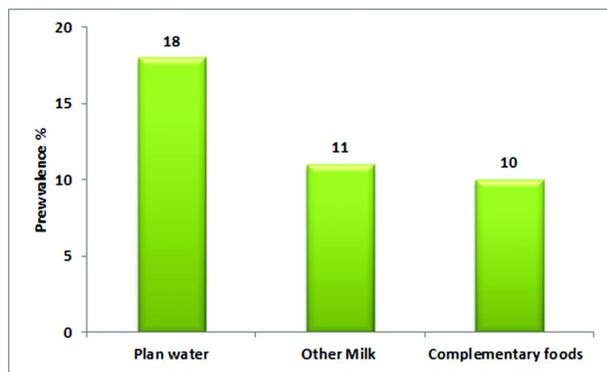


Fig. 5: Children consuming plain water, other milk & complementary foods in addition to breastmilk under the age six months as per NFHS-4 data

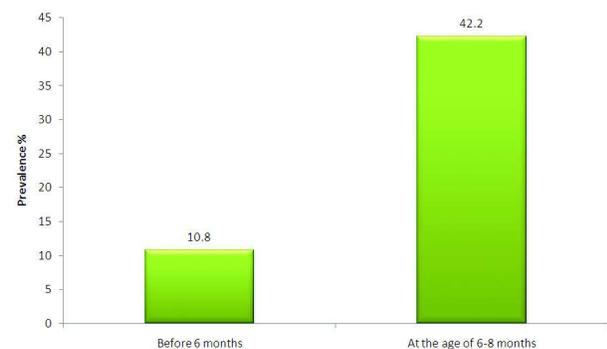


Fig. 6: Children receiving solid or semi-solid food as per NFHS-4 data in different age groups

Bottle-feeding

According to NFHS-4, 17.3 % of infants below the age of 12 months were bottle-fed (14.7% in NFHS-3). This is a practice that indirectly shows increased use of infant formula (powdered or liquid).

Barriers to Optimal Feeding Practices

Women need an enabling and supportive environment to optimally feed infants. They face several barriers in ensuring optimal infant feeding

Barriers to Exclusive Breastfeeding During First Six Months

A recent review of studies (Kavle *et al.*, 2017) from 2000-2015 from several countries, including India, identified sixteen barriers to exclusive breastfeeding. The study showed that there is a negative association between maternal employment, caesarean section delivery, and delayed initiation of breastfeeding within an hour of birth and exclusive breastfeeding. Some of the other barriers include lack of supportive work environment, inadequate skills of health care providers in health facilities, lack of skilled counselling during antenatal period in health facilities and later during first six months in the communities, poor family support, use of pre-lacteal feeding, use of infant formula without being medically indicated, breastfeeding problems like sore nipples and mastitis, and perceived insufficiency of breastmilk.

Barriers for Good Complementary Feeding With Continued Breastfeeding After 6 Months

Socio cultural factors and traditional practices influence the practice of introducing early complementary feeding (Aggarwal *et al.*, 2008; Vyas *et al.*, 2014). Caregivers lack the knowledge about appropriate complementary feeding and foods (quality and quantity) (Malhotra, 2012; Aruldas *et al.*, 2010);

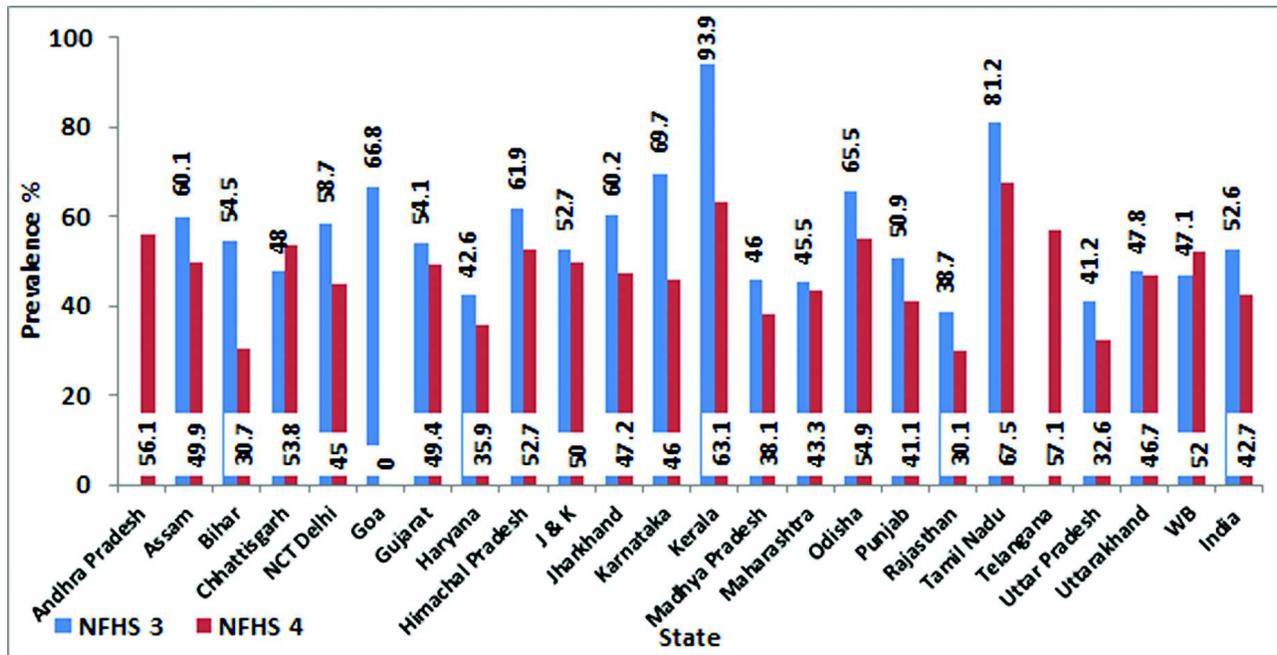


Fig.7: State wise trends in children 6-8 months receiving timely solid /semi solid foods and breastmilk as per NFHS-3 and NFHS-4 data (*Zero denotes no data)

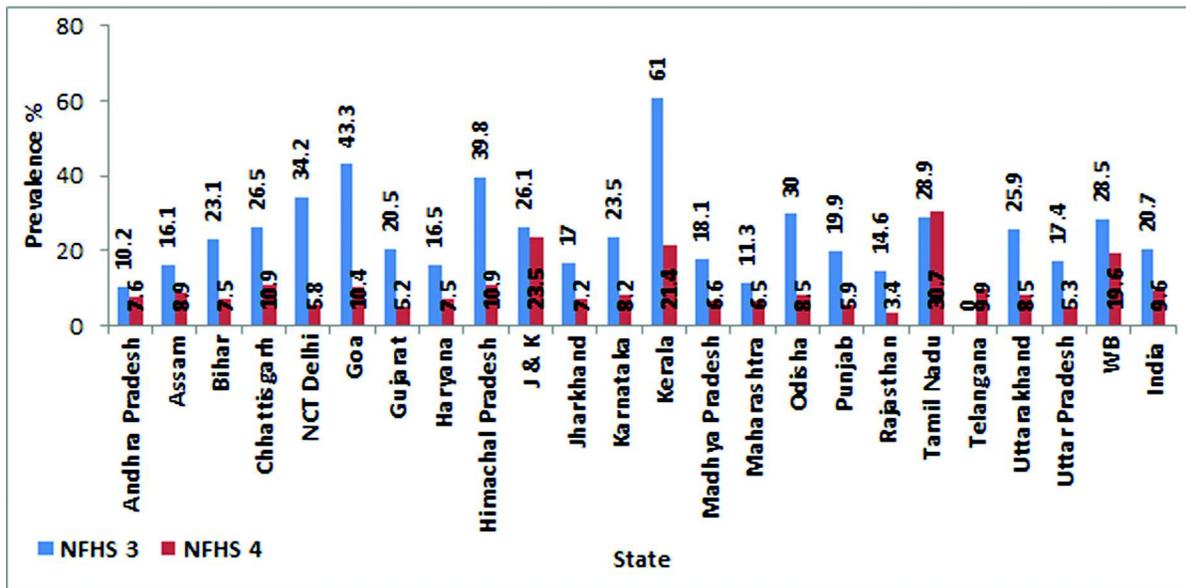


Fig. 8: State-wise trends in children 6-23 months receiving Minimum Acceptable Diet (MAD) as per NFHS -3 and NFHS-4 data (*Zero denotes no data)

lack of knowledge and understanding among health worker is significantly associated with poor complementary feeding practices (Parikh and Sharma, 2011; Chaturvedi *et al.*, 2014). Low income and poor household food security are important factors in nutritional outcomes of infants and young children

(Chaturvedi *et al.*, 2016). However, income is only one of the many determinants of poor feeding practices (Subramanyam *et al.*, 2010). Availability of ready to eat food is replacing fresh homemade foods (Kaushik *et al.*, 2011).

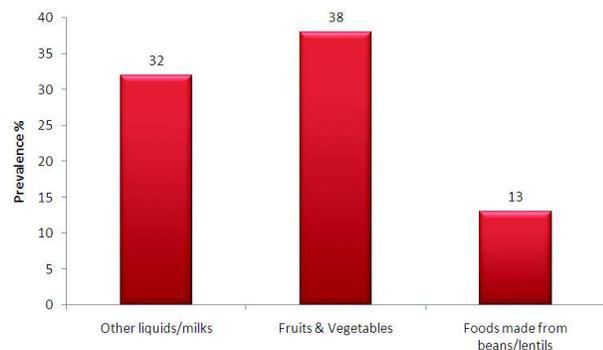


Fig. 9: Consumption of other liquids/milk, fruits & vegetables and foods made from beans/lentils among breastfed children 6-23 months as per NFHS-4 data

Interventions to Remove Barriers to Optimal Feeding

In South Asia policy support to optimal infant feeding exists but scaling up of implementation of interventions and coordination are poor (Thow *et al.*, 2017). Investment in relevant policies and programmes has the potential to increase breastfeeding rates (Lutter and Morrow, 2013). Evidence points out that addressing maternity leave is helpful (Nandi *et al.*, 2016, Monteiro *et al.*, 2017). Extra help is required to establish and maintain breastfeeding and avoid use of formula unless medically indicated (Fein *et al.*, 2008). Many maternal and child health workers lack necessary knowledge and skills to help and support women in initiating breastfeeding and maintaining exclusive breastfeeding during the first six months (WHO, 2009). Women, who receive encouragement to breastfeed are more likely to initiate and maintain breastfeeding (Lu M *et al.*, 2001; Shinwell *et al.*, 2006). A meta-analysis of 53 studies has demonstrated that prenatal and postnatal counselling increased exclusive breastfeeding manifold, and skilled one-to-one counselling (as opposed to group counseling) enhanced rates of exclusive breastfeeding for 6 months (Imdad *et al.*, 2011). Studies indicate that inadequate knowledge and skill of staff on breastfeeding and when to use infant formula can lead to inconsistent information (WHO, 2016). Baby food industry has been influencing the behavior of health workers in undermining breastfeeding (Aguayo *et al.*, 2003; Allain and Kean, 2008). Peer counselling through mother support groups in the district of Lalitpur, India showed improved early, exclusive and complementary feeding (Kushwaha *et al.*, 2014).

Counselling mothers enabling them to give appropriate and adequate complementary food has significantly improved growth in children (Imdad *et al.*, 2011). There is need to provide food to “food insecure” populations to ensure good, timely, and appropriate complementary feeding after 6 months, along with continued breastfeeding (Bhutta *et al.*, 2008).

Status of Policy and Programmes for Supportive Environment

World Breastfeeding Trends Initiative 2015 and Progress Thereafter

The World Breastfeeding Trends Initiative (WBTi), is an innovative tool to assess gaps in ten of policy and programme areas, which was adapted from the WHO’s “Infant and Young Child Feeding - A tool for assessing national practices, policies and programmes”. Since 2005, this tool has been used for three yearly assessment of India’s policy/programme. The findings based on the assessment report of 2015 (Gupta and Prasad, 2015) with some updates thereafter are presented below.

Indicator 1 - National Policy, Programme and Coordination

The Ministry of WCD is responsible for overall coordination of the issues around breastfeeding and IYCF and does not have an officially adopted policy or a plan of action and attached budgets. There is a National Steering Committee chaired by the Secretary WCD to take decisions and has met twice in September 2015 and November 2017. The decisions taken in these two meetings reveal that most decisions have not been implemented. India scored 1.5 out of 10 in 2015.

Indicator 2 - Baby Friendly Care and Baby-Friendly Hospital Initiative (BFHI)

This assesses action taken by health facilities in both public and private sector to assist women in reducing barriers to breastfeeding. India scored 0/10 in 2015 mainly due to non-functioning of BFHI programme launched in 1990s. In 2016, the Ministry of Health & Family Welfare launched “Mother’s Absolute Affection” (MAA) programme with the objective of increasing early and exclusive breastfeeding in health facilities. It subsumes the BFHI; it is too early to assess its impact.

Indicator 3 - Infant Milk Substitutes Feeding Bottles, and Infant Foods (Regulation of Production, Supply and Distribution) Act 1992, and Amendment Act 2003

India enacted the Infant Milk Substitutes Feeding Bottles, and Infant Foods (Regulation of Production, Supply and Distribution) Act 1992, and Amendment Act 2003 (IMS Act). This Act aimed at protecting breastfeeding and restricting the use of milk formula in India, bans promotion of all feeding bottles, baby milks and foods for children under the age 2, and mandates all women to be provided with accurate information on feeding practices including dangers of artificial feeding. It has checked the decline of breastfeeding and has been a significant contributor to rise in breastfeeding during past 10 years. India scored 9.5/10 in 2015. There are, however, lacunae in enforcement and companies have stepped up their marketing and aggressively promoting their products in the health sector. Between the years 2008 to 2012, market sales of infant foods grew from 24,428 to 27,783 Tonnes. However, during the same period, in China, where the law is not that stringent, sales went up from 294,800 to 560,000 Tonnes (Euromonitor International, 2012).

Indicator 4 - Maternity Protection

This is a critical indicator that assesses mother's ability to stay close to their baby and breastfeed; this indicator looks at maternity leave, paternity leave, work place support in private sector and unorganised sector and breastfeeding breaks. India scored 3.5/10 in 2015. Revision of the Maternity Benefit Act of 1961 in 2017 has led to increase maternity leave from 12 weeks to 26 weeks. The Act extends to whole of India to all mines, plantations, shops, establishments and factories. The Pradhan Mantri Matritva Vandana Yojna (PMMVY), which provides Rs. 5000 (for first child born), in 3 installments to women during pregnancy, at birth and at 3 months, attempts to bridge the gaps in maternity benefits. It is projected as wage compensation scheme and is yet to be universalized, demonstrating lack of will to convert policies into actions that benefit all women.

Indicator 5 - Health and Nutrition Care System

This indicator looks at capacity of health workers to provide support for breastfeeding/IYCF. In 2015, India

scored 7/10. BPNI provided the technical support to both National Health Mission (NHM) and Integrated Child Development Services (ICDS) during the last decade. Twenty one state governments have initiated action for building the capacity of health workers to provide skilled counseling. Evaluation of the programme in Punjab (Y.G. Consultants and Services (P) Ltd., 2009) indicates that intervention has improved skills of workers. The National Nutrition Mission (NNM), provides an opportunity for building capacity of millions of workers.

Indicator 6 - Mother Support and Community Outreach: Community-based Support for the Pregnant and Breastfeeding Mother

This indicator looks at what is the reach to families and mothers regarding infant and young child feeding practices. India scored 6/10 in 2015. The reach is not universal and there are gaps in the antenatal, post-natal counselling services and support. Community based counselling currently relies on Accredited Social Health Activist (ASHA) or Anganwadi Worker (AWW).

Indicator 7 - Information Support

This indicator looks at IEC strategy, correctness of messages, campaigns and communication on risks of artificial feeding. In 2015, India scored 6/10. Lack of IEC policy and strategy on optimal feeding practices, and failure to address the risks of formula feeding, and lack of attention to WHO guidance on safe preparation of infant formula are reasons behind it. IEC campaigns are run on an ad-hoc basis. There is lack of consistency and local context.

Indicator 8 - Infant Feeding and HIV

This looks at the national policy to deal with infant feeding options for HIV positive parents. India scored 5.5/10 in 2015. The Ministry of Health and Family Welfare and NACO have developed guidelines on breastfeeding counselling in the context of HIV/AIDS. The newly launched MAA programme provides an opportunity to integrate this component into health services.

Indicator 9 - Infant and Young Child Feeding During Emergencies

This indicator looks at how women and children are

supported in appropriate infant feeding practices during disasters. None of the child-related policies, or the policies related to disaster management, have any guidelines on how to handle IYCF issues. The National Disaster Management Plan, 2016 makes provision of baby foods but does not address the issue for supporting breastfeeding and safety of infant feeding (NDMP, 2016). In spite of available UN Guidance, no nodal person is designated for the task of supporting breastfeeding. Therefore, India scored a zero on this indicator.

Indicator 10 - Mechanisms of Monitoring and Evaluation System

This indicator looks at routine monitoring and evaluation systems that collect, analyse and use the data on optimal feeding practices. India scored 5/10. Gaps continue to exist in programming for IYCF. Opportunity for improvement exists in India's aspirational district programme in which Health and Nutrition are given 30% weightage; the programme has 13 indicators including 2 on early breastfeeding and adequacy of complementary feeding.

Indicators 11-15 - Infant and Young Child Feeding Practices

The WBTi gathers data on five indicators of infant and young child feeding practices from recent surveys, which are national in scope. Findings on these indicators have been described in the earlier section.

India's total score on these indicators is shown in Fig. 10. India scored 44/100 in 2015 going up marginally from 2005, 2008, and 2012 with scores of 40, 41, and 43 respectively. This analysis highlights continued gaps and lack of priority on IYCF. Table 1 compares Sri Lanka and India (in 2015) shows that out of ten parameters, India gets only one Green coding and Sri Lanka has 6, India is coded Red in 4 and Sri Lanka has none in red. In the 91 countries, who have reported on WBTi by April 2018, India stands at number 78 and Sri Lanka tops the chart ranked at number 1.

Note : The 2018 assessment has been completed and initial findings suggest that status of policy and programmes has not improved with a policy score of 45/100. Final report has been published in August, 2018.

INDIA (Score out of 10)	WBTi Parameters	SRI LANKA (Score out of 10)
1.5	1. National policy, planning funding	10.0
0.0	2. Health care system during delivery	9.0
9.5	3. Legal protection from commercial sector	7.0
3.5	4. Maternity protection	6.0
7.0	5. Health care system, skills and preparation	10.0
6.0	6. Community care system after delivery	10.0
6.0	7. Information to women families	6.0
5.5	8. HIV and infant feeding policies	10.0
0.0	9. Disaster management policies	10.0
5.0	10. Monitoring and evaluation	10.0

Recommendation for Removing Barriers to Optimal Infant Feeding

Based on the evidence provided and the opportunities, following steps to remove barriers are recommended.

Policy Level: Implementation of IMS Act

Each State should authorise officers to act under the Section 21 of the IMS Act, ensure regular monitoring and reporting of the IMS Act implementation. It should be independent of the food industry. States should also create awareness of people about provisions of IMS Act through media and IEC and make appropriate budgetary allocations for capacity building.

Policy Level: Maternity Protection

Government of India should consider expanding the scope of Maternity Benefit Act to include all women working in formal or informal economy and allocate sufficient resources to universalise PMMVY. Efforts should be made provide universal access to systems such as day care services (on-site for breastfed children and also as a support for adequate complementary feeding) and inform all women of their entitlements wherever they are working. Employers should invest in implementing the Maternity Benefit Amendment Act of 2017 in letter and spirit.

Programme Level in Health Facilities

Health care personnel should ensure that all women who come for antenatal check up and delivery are

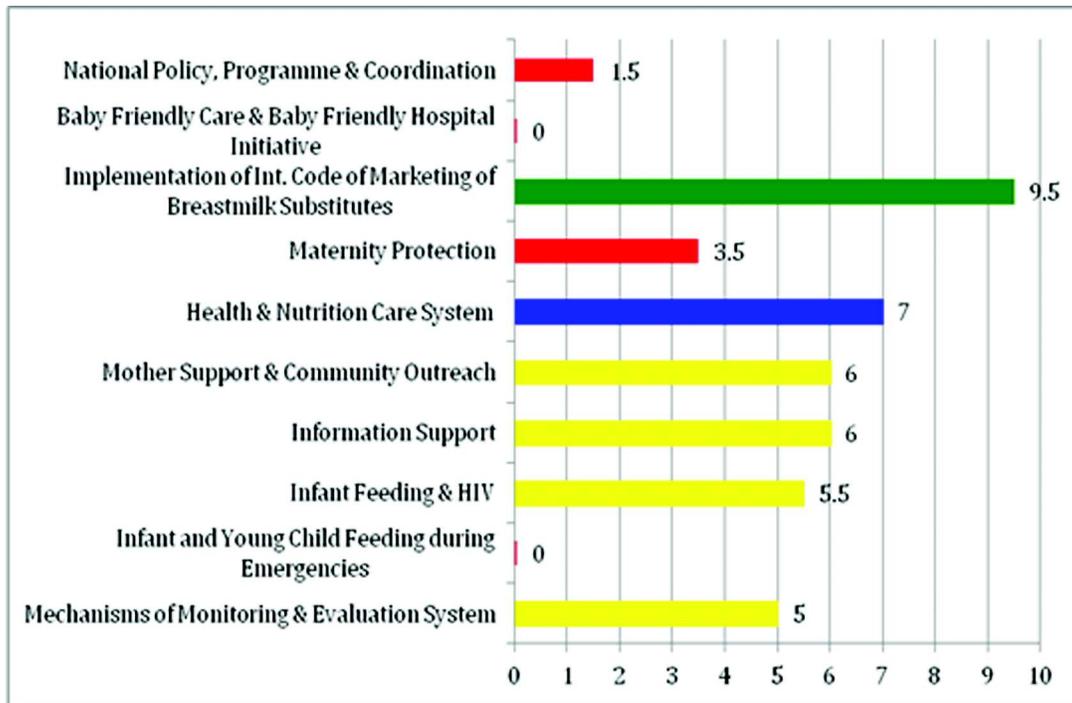


Fig. 10: Score of Policy and program of 10 indicators out of 10 based on India WBTi 2015 assessment

adequately counselled, about breastfeeding; and if they choose to give formula after birth, they should be supported adequately to ensure safety of infant feeding. All babies and mothers should be supported at birth to have skin to skin contact and begin breastfeeding within one hour. Lactation counselors may be appointed in all hospitals or health facilities both in public and private sector. NABH could include provision of lactation support nurses in their accreditation process. Efforts should be made to improve appropriate infant feeding practices in HIV positive mothers.

Programme Level: Community Outreach

A team of at least 4 persons should be made available for mentoring and supervision at block level and with adequate technical capacity and skills to mentor a village level mother support network/group. They can mentor, supervise and monitor growth of infants and children and provide skilled help to women who need intensive counselling for low weight babies, not enough milk, breast conditions like engorgement, and mastitis. The same team should also be responsible for monitoring and supervising adequacy of complementary feeding and minimum acceptable diet. The team should be able to recommend provision of

additional and variety of foods depending on availability in the households. This could be done by expanding the scope of national nutrition mission.

Programme Level During Disaster Situations

The National Disaster Management Agency may appoint a person to coordinate activities and identify breastfeeding/infant and young child feeding as an area of priority action on or during emergency/disaster situations.

Coordination

Efforts should be made to ensure that national steering committee on IYCF is effective, and develops a national plan of action and request allocation of dedicated budget to implement this plan. All States must participate in this work and have a state specific plan and designated officer to monitor and supervise progress.

The Global and National Targets for Infant Feeding

In 2012, the World Health Assembly set target nutrition targets to be achieved by 2025; these include the increase in rate of exclusive breastfeeding in the first 6 months up to at least 50%, from the 2012 levels of

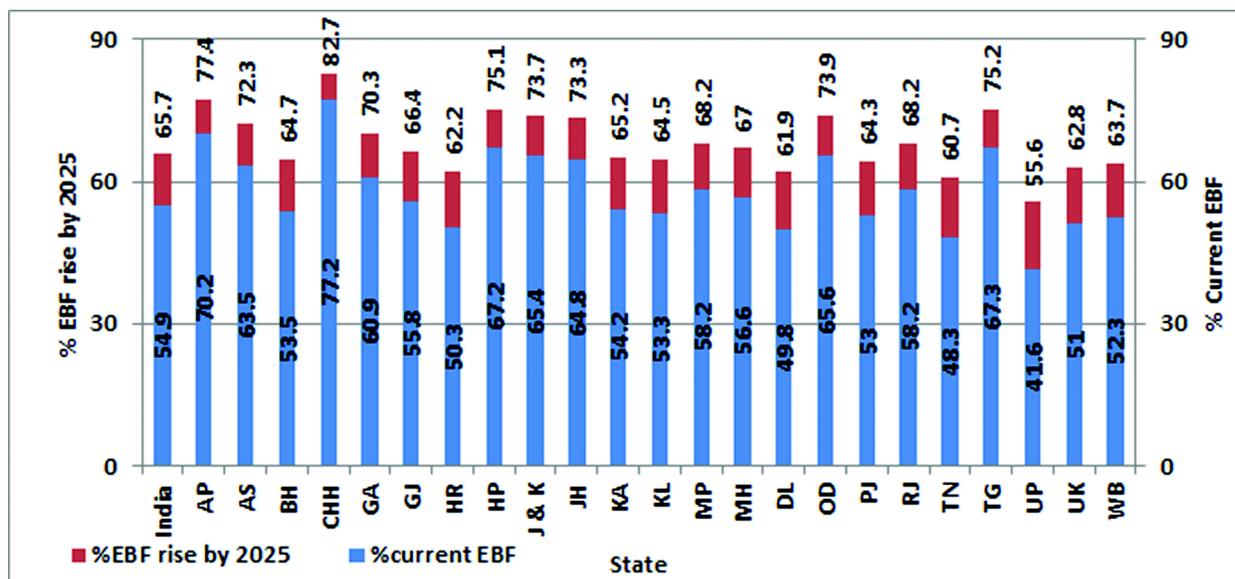


Fig. 11: State wise expected rise of Exclusive Breastfeeding rate by 2025

38%. To achieve this target a ‘Global Breastfeeding Collective’ (GBC2017), has been set up. The Collective has set even more ambitious targets believing rapid progress is possible. These include increasing rate of early initiation of breastfeeding within one hour to 70%, exclusive breastfeeding to at least 60%, and continued breastfeeding at one and two years to 80% and 60%. The WHO has provided a Global tracking tool to calculate how much each country needs to contribute. Projected targets for India and its States for 2025 are given (Fig. 11).

India is setting its targets on key practices. According to the final draft of the “Operational guidance on infant and young child feeding (April 2018)”, targets set for 2025 include: 80% mothers to initiate breastfeeding within an hour, 70% exclusively breastfeed for the first 6 months of life, 80% introduce complementary feeding to infants between 6-8 months and 60% of children are fed minimum acceptable diet at 6-23 months.

The Way Forward

In India, there is an interest in increasing optimal feeding practices. It is important to realize that enormous support is needed to remove barriers, which make or break optimal feeding practices; prioritization of interventions is essential. For progress in early breastfeeding, only health sector may be responsible but to improve exclusive breastfeeding and

complementary feeding, several sectors including labour, rural development and community themselves have to be involved. Lessons can be learnt from the success stories of other countries in the region and Lalitpur in India (Kushwaha *et al.*, 2014). Following key actions can facilitate moving forward.

- Ministry of Women and Child Development, the key ministry along with Ministry of Health and Family Welfare and National Institution for Transforming India (NITI Aayog), may organise a 2-day national consultation with participation of each state for agreement on yearly targets, identifying the need of additional human resource and capacity building, development of a plan of action with timelines, and development of a real time budget for each State and the Central activity. There are tools available to do this work in World Breastfeeding Costing initiative (WBCi).
- The National Nutrition Council and Economic Advisory Council to the PM take cognizance of the above plan of action and recommend allocation of budgets to the Prime Minister and Finance ministry. The WHO, UNICEF and World Bank estimates indicate that at least 4.7 US \$ per newborn baby is required to reach the WHA targets.
- PMO and the Finance ministry allocates

sufficient fund, establishes a budget line, and tracks the use of funds. PM should consider setting up a special scheme e.g. Prime Minister's Stanpan Suraksha aur Samvardhan Yojna (PMSSSY).

- The National Steering committee on IYCF should track the progress of policy, and programme implementation every year and

commission research into the impact.

- Each state should set up a mechanism to coordinate IYCF work.
- NITI Aayog may recommend the aspiration district programme to scale up optimal feeding based on the model of Lalitpur project.

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