



Child Feeding Practices, Anemia and Nutritional Status of Children in India with Special Reference to few Districts of Gujarat

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ABSTRACT

Malnutrition is the inadequate (under-nutrition which leads to poor growth and development) or excess (over-nutrition which leads to obesity and associated risks of non-communicable diseases) intake of protein, carbohydrates, fat, vitamins and minerals, to meet the daily nutritional requirements of an individual. Every fifth child in the world lives in India. 22% of babies are born with low birth weight in India. 50 per thousand live births do not complete their first year of life, 42.5% of children (0-5 years) are underweight, and 79 % of children (6-35 months) have iron deficiency. Among Indian women, 36% are underweight, 56.2% of women, and 56% of adolescent girls, suffer from iron deficiency anemia, among them, 44% are moderately or severely thin. Half of the adolescent girls in the age group 15-19 years are undernourished, which is approximately 27.5 million. Under-nutrition declines and Over-nutrition increases with the increase age of women. In NFHS 5(2019-20) in comparison to NFHS 4(2015-16), the picture is not so good if we talk about nutrition, anemia, and breastfeeding. The challenge is big. With the help of the Investment framework by the World Bank, we may overcome it by 2030.

Keywords: Breastfeeding, Anemia, Nutrition, Child Health

Introduction

Though Gujarat has witnessed a significant decline in poverty and ranks third in economic growth, development has been inequitable. Tribal, coastal, desert, and hilly areas still have high poverty levels above the State's average. While universal primary educations, gender equity in primary education, and access to safe drinking water have increased, the neonatal mortality and maternal mortality rates have been slow to improve. The high prevalence of malnutrition, poor coverage of full immunization, the declining sex ratio, and child marriage continue to pose a challenge to improving human development outcomes for every child in Gujarat.¹

Nutrition deals with the access and utilization of food and nutrients for life, growth development, and well-being. Good Nutrition is essential for improved learning capacity, intellectual and cognitive performance. Nutrition constitutes the foundation for human development by reducing susceptibility for infections, illnesses, and also the disability and mortality burden. Good nutrition enhances cumulative lifelong learning capacities and adult productivity. Poor nutrition starts before birth, is generally continuous into adolescence and adult life, and can span generations. It is often irreversible.

The first two years of life and life before birth are most important. These are periods of rapid growth and development, which lay the foundation of the mental, physical and emotional development of a person. Adequate nutrition during this Critical Period is essential, as early damage due to poor nutrition is only partially reversible in later life.

In Ayurveda, a child is divided into three stages as per the below table.

त्रिविधः कथितो बालः क्षीरान्नोभयवर्तनः।
स्वास्थ्यं ताभ्यामदुष्टाभ्यां दुष्टाभ्यां रोगसम्भवः॥
(AshtangaHridaya, UttaraSthana, Chapter 2, Verse 1)²

This couplet means that children are divided into three types according to food intake, ksheeraad (the one who drinks only breast milk), Ubhayavartana, or Ksheerannaad (the one who takes breast milk as well as food), and Annaad (the one who takes only food). If those (food and breast milk) are not vitiated then the child will be healthy and if vitiated, the child will be ill.

Table 1

Name of stage	Duration	Meaning of the stage in common language
क्षीराद (Exclusive breast feed)	0-6 months	Child exclusively breastfed
क्षीरान्नाद (Weaning)	7-24 months	Child breastfed along with other food
अन्नाद (Normal diet)	After 24 months	Child on a regular diet

So, as per the Ayurvedic text also, breastfeeding is of prime importance.

Methods³

The National Family Health Survey 2019-20 (NFHS-5), the fifth in the NFHS series, provides information on population, health, and nutrition for India and each state/union territory (UT). Like NFHS-4, NFHS-5 also provides district-level estimates for many important indicators. The contents of NFHS-5 are similar to NFHS-4 to allow comparisons over time. However, NFHS-5 includes some new topics, such as preschool education, disability, access to a toilet facility, death registration, bathing practices during menstruation, and methods and reasons for abortion. The scope of clinical, anthropometric, and biochemical testing (CAB) has also been expanded to include measurement of waist and hip circumferences and the age range for the measurement of blood pressure and blood glucose has been expanded. However, HIV testing has been dropped. The NFHS-5 sample has been designed to provide national, state/union territory (UT), and district level estimates of various indicators covered in the survey.

As in the earlier rounds, the Ministry of Health and Family Welfare, Government of India, designated the International Institute for Population Sciences, Mumbai, as the nodal agency to conduct NFHS-5. The main objective of each successive round of the NFHS has been to provide high-quality data on health and family welfare and emerging issues in this area. NFHS-5 data will be useful in setting benchmarks and examining the progress the health sector has made over time. Besides providing evidence for the effectiveness of ongoing programs, the data from NFHS-5 help in identifying the need for new programs with an area-specific focus and identifying groups that is most in need of essential services.

Four Survey Schedules - Household, Woman's, Man's, and Biomarker - were canvassed in local languages using Computer Assisted Personal Interviewing (CAPI). In the Household Schedule, information was collected on all usual members of the household and visitors who stayed in the household the previous night, as well as socio-economic characteristics of the household; water, sanitation, and hygiene; health insurance coverage; disabilities; land ownership; several deaths in the household in the three years preceding the survey; and the ownership and use of mosquito nets. The Woman's Schedule covered a wide variety of topics, including the woman's characteristics, marriage, fertility, contraception, children's immunizations and healthcare, nutrition, reproductive health, sexual behavior, HIV/AIDS, women's empowerment, and domestic violence. The Man's Schedule covered the man's characteristics, marriage, his number of children, contraception, fertility preferences, nutrition, sexual behavior, health issues, attitudes towards gender roles, and HIV/AIDS. The Biomarker Schedule covered measurements of height, weight, and hemoglobin levels for children; measurements of height, weight, waist, and hip circumference, and hemoglobin levels for women age 15-49 years and men age 15-54 years; and blood pressure and random blood glucose levels for women and men age 15 years and over. In addition, women and men were requested to provide a few additional drops of blood from a finger prick for laboratory testing for HbA1c, malaria parasites, and Vitamin D3.

The fact sheet provided information on key indicators and trends for Gujarat. NFHS-5 fieldwork for Gujarat was conducted from 23 June 2019 to 30 November 2019 by the Centre for Operations Research and Training (CORT) and TALEEM Research Foundation. Information was gathered from 29,368 households, 33,343 women, and 5,351 men. Fact sheets for each district in Gujarat were also available separately. We have used that information from the last two surveys.

Breastfeeding, nutrition, and anemia³

Exclusive breastfeeding is defined as the practice of giving infant only breast milk for the first six months of life with no other food or other liquids or even water. Optimal breastfeeding practices also include initiation of breastfeeding within an hour after birth and continued breastfeeding until two

years of age and beyond. Optimal breastfeeding could have the single largest potential impact on child mortality of any preventive intervention. The evidence of the health nutritional cognitive and long-term economic benefits of breastfeeding is clear and pursue essay breastfeeding has protective effects for newborns and young children that prevent common diseases such as diarrhea and pneumonia which are major causes of child mortality. The recent Lancet breastfeeding series estimates that optimal breastfeeding could help prevent 823 thousand child deaths and 20,000 maternal deaths from breast cancer per year. Breastfeeding also reduces the risk of childhood obesity and diabetes and for nursing mothers reduces the risk of breast and ovarian cancer later in life exclusive breastfeeding for the first six months is also a natural contraceptive that can help increase birth spacing.⁵

Although breastfeeding is nearly universal in Gujarat, only 65 % of children under 6 months are exclusively breastfed, as the WHO recommends. 86 % are put to the breast within the first day of life, but only 38 % started breastfeeding in the first hour of life (as recommended). While exclusive breastfeeding indicators show an improvement since NFHS-4, many infants are still deprived of the highly nutritious first milk (colostrum) and the antibodies it contains.³

It is recommended that nothing be given to children other than breast milk even in the first three days when the milk has not begun to flow regularly because pre lacteal feeds limit the frequency of suckling by the infant and expose the baby to the risk of infection. However, 17 % of children are given something other than breast milk during the first three days. Overall, 88 % of children continue breastfeeding at 1 year and more than two-thirds continue breastfeeding at 2 years. The median duration of breastfeeding is 25.1 months, which is the age at which half of the children are breastfed.³

After the first 6 months, breast milk is no longer enough to meet the nutritional needs of infants. Therefore, complementary foods should be added to the diet of the child. However, at age 6-8 months, only 41 % of children in Gujarat receive breast milk and complementary foods.

WHO has several recommendations for infant and young child feeding (IYCF) practices for children age 6-23 month. The key IYCF indicators measure the adequacy of dietary diversity and meal frequency for breastfed and non-breastfed children. Over one-fifth (23%) of children, age 6-23 months are fed the recommended minimum number of times per day and even fewer (16%) are fed from the appropriate number of food groups. Only 6% are fed according to all three recommended practices.³

Table 2: Child feeding practices and nutritional status of children by district³

District	%age breastfed within 1 hour of birth		%age of children under age 6 months exclusively breastfed		Height for age		Weight for height		Weight for age	
	NFHS 5	NFHS 4	NFHS 5	NFHS 4	Stunted		Wasted		Underweight	
	NFHS 5	NFHS 4	NFHS 5	NFHS 4	NFHS 5	NFHS 4	NFHS 5	NFHS 4	NFHS 5	NFHS 4
Ahmedabad	36.2	49.8	*	*	35.4	29.4	17.5	27.1	34.0	31.0
Amreli	41.8	44.4	88.2	*	35.3	37.8	23.7	24.6	30.6	31.7
BanasKantha	46.8	49.8	57.5	47.4	39.0	40.7	25.5	21.6	44.1	43.1
Jamnagar	44.4	35.0	74.0	*	28.7	27.9	23.8	31.3	28.9	29.3
Kheda	25.8	58.8	47.4	57.7	37.3	45.5	30.9	27.2	39.5	48.1
Navsari	15.7	52.9	*	*	36.8	38.9	29.0	26.8	43.6	37.4
Porbandar	52.8	62.9	72.7	55	18.2	22.6	21.8	25.4	25.5	27.7
Rajkot	44.7	52.7	*	*	38.9	30.9	17.5	23.4	37.0	31.4
Surat	45.4	46.9	*	*	36.0	30.0	26.0	26.2	32.4	36.1
Vadodara	44.0	49.4	*	64.8	42.3	43.8	20.1	16.3	39.8	39.1
Gujarat	38.0	27.1	65.0	47.8	39.0	51.7	25.1	18.7	39.7	44.8

Note: Figures in parenthesis are based on 25-49 not weighed cases. An asterisk indicates that a figure is based on fewer than 25 not weighed cases and has been suppressed.

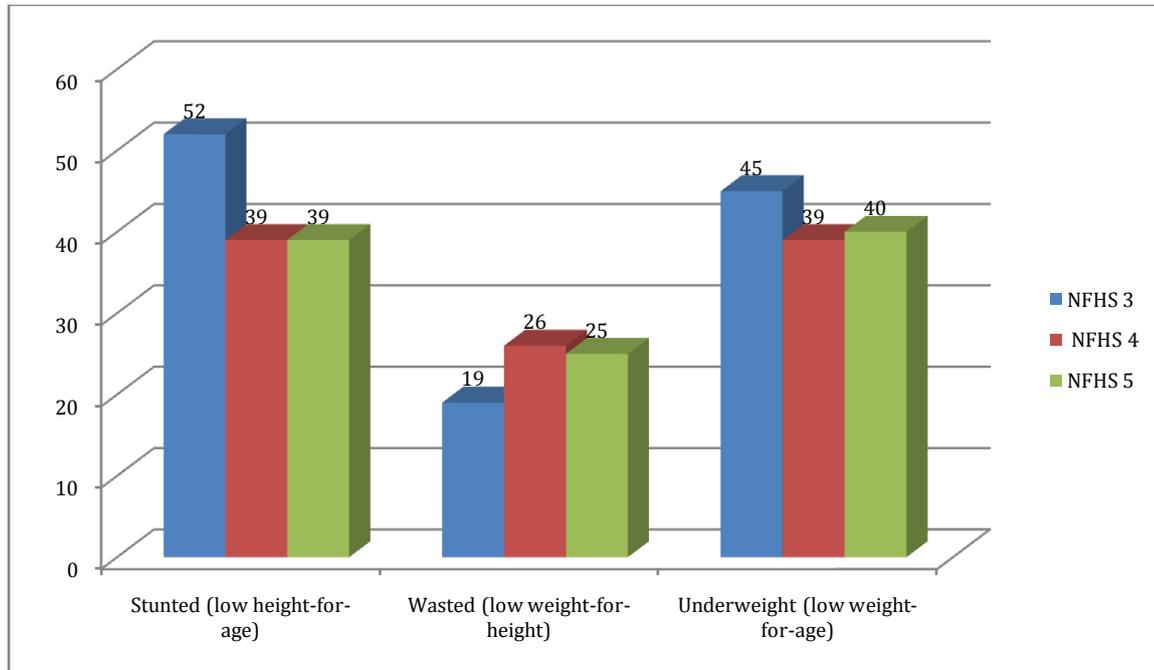
Children's nutritional status³

Childhood under-nutrition contributes to childhood diseases and is a major cause of child mortality in India. 39% of children under age 5 years are stunted or too short for their age which indicates that they have been undernourished for some time. 25% are wasted or too thin for their height, which

may result from inadequate recent food intake or a recent illness-causing weight loss and 11% are severely wasted. 40% are underweight which takes into account both chronic and acute under-nutrition. Even during the first six months of life when almost all babies are breastfed, 27% of children are stunted and 32% each of children are wasted and underweight.

Children's nutritional status in Gujarat has hardly changed since NFHS 4 by all measures the %age of children who are stunted (39%) has remained unchanged in the four years between NFHS 5 and NFHS 4. there is only a marginal increase in the %age of children who are underweight from (39 % to 40%) and a marginal decline in the %age of children wasted (from 26 % to 25%) since NFHS 4. However, the continuing high levels of under-nutrition are still a major problem in Gujarat.

Chart 1: Trends in Children's Nutritional Status (%age of children under 5 years)



Note: Nutritional status estimates are based on 2006 WHO International Reference Population

Differences in the levels of malnutrition are more pronounced for several background characteristics. Malnutrition generally decreases with increasing mother's schooling, better nutritional status of the mother, and larger child's size at birth. The level of under-nutrition is relatively high for rural children and children of higher birth orders. It is generally higher among schedule tribe children and lowers among Christian children than among children of any other religion. Malnutrition is somewhat higher for male children than female children on all three nutritional status measures.

Micronutrient deficiency is a major contributor to childhood morbidity and mortality. Vitamin A is an essential nutrient for the immune system. Severe Vitamin A deficiency (VAD) can cause eye damage and a higher risk of dying from measles and diarrheal disease. The Government of India recommends that children under 5 years of age receive vitamin A supplements every 6 months, starting at age 9 months. In Gujarat, more than four-fifths (86%) of children age 9-35 months were given a vitamin A supplement in the past six months, but only 42% of children age 6-23 months ate vitamin A-rich foods during the day or night before the survey.³

Iron deficiency is a primary cause of anemia. Eating foods rich in iron and taking iron supplements can help prevent anemia. Only 6% of children age 6 to 23 months ate iron-rich foods during the day or night before the survey; however, 46% of children in the same age group were given iron supplements in the week before the survey.³

Anemia is a widespread public health problem with vast human, social, and economic consequences. It leads to a higher risk of infections as well as impaired cognitive function and physical work capacity. In addition, maternal anemia is associated with intrauterine growth restriction. In 2011, anemia affected over half a billion women worldwide, with a prevalence of 29% for non-pregnant women, and 38% for pregnant women. Anemia remains a moderate to severe public health problem in 142 countries around the world impinging on health and productivity.⁶

High Prevalence of Anemia among Women and Children

Gujarat is the poor performing state in the country when it comes to anemia in children under five years old as compared to NFHS 4 (2015-16). Anemia among children aged 6-59 months increased to 79.7% from 62.6, an increase of 17.1% in five years. Whereas anemia in non-pregnant women increased to 65.1% from 55.1% and in expecting women it increased to 62.6% from 51.3%.

This is not the first time; Gujarat has seen such a trend. Back in 2015-16, according to the Nutrition Atlas which has been prepared by the Hyderabad-based National Institute of Nutrition, Gujarat was among the top 15 anemic states of India, with a higher %age of anemic women than the national average of 53.1%.

Table 3 Nutritional status and anemia among children and women by district³

District	%age of children having any anemia (<11.0 g/dl) NFHS 5	%age of children having any anemia (<11.0 g/dl) NFHS 4	%age of women having any anemia (<12.0 g/dl) NFHS 5	%age of women having any anemia (<12.0 g/dl) NFHS 4
Ahmedabad	72.0	76	63.7	62.9
Amreli	72.0	74.5	50.0	56.0
BanasKantha	79.0	57.2	60.0	50.0
Jamnagar	75.0	75.7	50.2	63.8
Kheda	85.1	53.7	76.1	54.5
Navsari	75.3	51.9	68.7	52.1
Porbandar	77.9	70.8	47.6	59.1
Rajkot	77.0	57.6	60.5	52.6
Surat	83.6	42.3	69.0	39.0
Vadodara	86.4	54.3	72.3	49.2
Gujarat	79.7	69.7	65.0	55.3

Observation and Discussion^{4,5}

In 2012, The World health assembly set the target of increasing the rate of exclusive breastfeeding in the first six months to at least 50% (from 38%) by 2025. Breastfeeding is associated with higher intelligence quotients and, in the longer term, with enhanced labor market and economic outcomes. The current low breastfeeding rights globally are estimated to result in economic losses of about \$ 302 billion annually, or 0.49 % of world gross national income.

Globally, only 43% of infants younger than 6 months are exclusively breastfed. In low and middle-income countries, this means that over 68 million children born this year will not be exclusively breastfed. Most of the children who are not exclusively breastfed consume water milk formula for complementary food in addition to breast milk, often leading to infections in unsafe environments. Furthermore, only 45% of children are breastfed within one hour of birth and only 46% continue to breastfeed until the age of 2.¹

The *Global Nutrition Report* suggests that 47 countries are off course for reaching the breastfeeding target, and a further 110 have missing data for this indicator.⁷ However, rates of exclusive breastfeeding in some regions - South Asia and eastern and Southern Africa for example - have increased since the year 2000 and now surpass the 50 % target. The rates in other regions are below the target but are progressing slowly, except for the East Asia and Pacific region which has remained at around 30% over the last 15 years comparable data for many high-income countries are lacking but where data are available the rates are exclusive breastfeeding rates are generally low.

Although there have been modest gains in exclusive breastfeeding rates globally in recent years, these trends are not expected to continue without investment in comprehensive breastfeeding strategies. Current levels of investment in breastfeeding the largely undocumented are perceived to be insufficient to increase rates beyond where they are now.

Having a comprehensive breastfeeding strategy at the national level is the most effective way to influence the powerful social economic and cultural forces affecting a mother's decision to breastfeed. The strategy is composed of several types of interventions the exact mix of interventions may vary from country to country depending on the local context. For the analysis presented in *An Investment Framework for Nutrition*, three interventions are assumed to comprise a minimum score of the comprehensive strategy applicable to most contexts: infant and young child nutrition counseling, pro-breastfeeding social policies, and a national breastfeeding promotion campaign. Reaching the global target for breastfeeding would require scaling up this set of interventions in all in all low and middle-income countries to full coverage and would require an investment of \$5.7 billion over 10 years, or \$4.70 per newborn, from 2016 to 2025. As shown in the table, the bulk of the investment is for scaling up the coverage of infant and young child nutrition counseling. The East Asia and Pacific region require almost 40% of the total financial needs since they have the lowest breastfeeding rates currently, the Sub-Saharan Africa region requires one-quarter, and other regions require smaller shares of the total.

In 2012, the World health assembly called for a 50% reduction of anemia among women of reproductive age 15 to 49 years by 2025, including both non-pregnant and pregnant women. Achieving this ambitious target will require a multi-sectorial approach.

The analysis presented in an investment framework for nutrition estimates the financing needs and impact of scaling up a minimum core set of interventions for preventing anemia that applies to all countries, has a strong evidence base for effectiveness, and together can plausibly achieve the proposed target. The analysis focuses on the costs and potential impacts of a package of primary preventive nutrition-specific interventions that have

proven efficacy. The scale-up of the preventive packages aims to reach all women, including those with anemia. Treatment of anemia through the health system, while important, is not costed in this analysis. Achieving the global target of reducing anemia in women would require an additional \$12.9 billion in domestic government budget allocation and official development assistance (ODA) resources over 10 years, with over half of the resources to be allocated for iron and folic acid supplementation for non-pregnant women.

Approximately \$6.7 billion in additional financing is required for iron and folic acid supplementation for non-pregnant women and \$2.4 billion for staple food fortification. The investments in antenatal micronutrient supplementation and intermittent pre-emptive treatment for malaria in pregnancy in malaria-endemic regions are also necessary to reach the global nutrition target for stunting.

In addition to the total \$12.9 billion public investment needed over 10 years, it is estimated that households living above the poverty line would also spend \$505 million for the purchase of iron and folic acid supplementation and \$19.1 billion for the expected incremental additional cost of fortified foods (compared with unfortified foods) purchased through the marketplace.

Impacts of meeting the breastfeeding target

Only one intervention - infant and young child nutrition counseling - is included in the impact model because there is not enough evidence to rigorously estimate the impact of the other interventions. Investment in this intervention is projected to increase the exclusive breastfeeding rate across all low and middle-income countries to 54%, resulting in an additional 105 million children being exclusively breastfed and 520,000 child deaths averted over the next 10 years. Their actual impacts are likely to be even larger since these estimates do not include the contribution of social policies and campaigns designed to increase exclusive breastfeeding rates, nor do they include the full range of cognitive and productivity benefits.

Although achieving this target requires substantial effort, the analysis presented in An Investment Framework for Nutrition shows that it is less ambitious than the other global nutrition targets and there may be scope to go beyond the current target by 2025 or 2030.

The impact of investing in the anemia target

At full scale-up, investment in these four key interventions would prevent 265 million more cases of anemia in women in 2025 than occurred in 2015, reduce anemia prevalence to 15.4 % among women of reproductive age, and avert nearly eight lakh children deaths. Intermittent presumptive treatment of malaria in pregnancy in malaria-endemic regions would also prevent approximately 7,000 to 14,000 maternal deaths.

Investing in this set of interventions also would produce highly positive economic returns. Making this investment of \$12.9 billion over 10 years is estimated to generate a total net benefit of \$110.1 billion over 10 years for women and over the productive lives of children who benefit from these interventions. Each dollar invested in this package of prevention interventions would yield approximately \$12 in economic returns.

Economic benefits of meeting the breastfeeding target

Implementing a comprehensive breastfeeding promotion, protection, and support package is an excellent investment for countries. Breastfeeding promotes cognitive development in children which leads to higher intelligence and greater earnings in adulthood.⁵ Investing in this package is projected to yield a net benefit of \$298 billion over 10 years across all low and middle-income countries by preventing cognitive losses and child mortality. Every \$1 invested is estimated to generate \$35 in economic returns, making breastfeeding promotion, protection, and support one of the most cost-effective investments a country can make. Additional health system treatment cost savings are also likely because breastfeeding reduces the burden of childhood illnesses such as diarrhea and pneumonia.

Call to action

Optimal breastfeeding practices are among the best actions that can set a child up for lifelong good health and prosperity. Current investment levels are insufficient to drive the kind of progress that is necessary to meet the global breastfeeding target and therefore urgent action to scale up financing if required. It is estimated that countries are currently spending about \$250 million annually on the core package of interventions, with donors contributing a further \$85 million annually. An estimated additional \$570 million per year, on average, is required from all sources to reach the exclusive breastfeeding target, meaning that investment in breastfeeding will need to nearly triple from current levels.

These analyses were conducted with the best available data but improved data and modeling methods related to breastfeeding are currently lacking. Better measurement of the coverage of infant and young child nutrition counseling, from pregnancy through age two, is urgently needed. It is expected that recently added demographic and health survey (DHS) question addressing breastfeeding counseling will help with the estimation of coverage of any counseling, but this will not be sufficient to assess intervention coverage of the comprehensive counseling for new mothers until their children reach the age of 2. Furthermore, program implementers and researchers should collect and publish cost data so that future costing studies can be based on more robust data. Impact modeling software must also adapt to include a variety of breastfeeding interventions and to make stronger projections for the highest-burden countries. Further advances and experimental and Quasi-experimental methods are also needed to better understand the impact of interventions such as policies, media, and maternity leave, among others.

The case of investing in a breastfeeding Renaissance in the 21st century is strong. Scaling up a core set of interventions that enable optimal breastfeeding practices can have a major impact on preventing child deaths and generate strong returns on investment over time for societies, labor markets, and their economies. The costs of not making these investment investments would be at least 520,000 child deaths and 105 million children not exclusively breastfed. Given the undeniable benefits of breastfeeding and its proven economic and human development gains, greater investment is urgently needed.

Achieving the anemia target would improve the lives of millions of women and their newborns and contribute toward a more productive economy. However, achieving this ambitious goal will be a challenge; the global nutrition report estimated that, at the current rate of progress, it would take until the year 2084 to reach the anemia target. Current investments in the core package of interventions to prevent anemia -estimated to be \$0.5 billion by the domestic government and \$0.1 billion by donors annually -fall far short of what is needed to accelerate progress on reaching the target for anemia in women.

Rapid scale-up of the preventive interventions needed to cover 1.5 billion women in low and middle-income countries will require a concerted effort and strong political will, as well as the development of innovative and effective delivery platforms.

Conclusion

Gujarat is one of India's most urbanized states in India, with 43% of the population living in urban areas, according to the state government. The state is home to more than 60 million people (5 % of the population of India as per the population census of India, 2011). But, according to the recently released report – National Family and Health Survey (NFHS-5), Gujarat is also known as one of the states facing huge challenges in dealing with malnutrition and anemia. As per the report, malnutrition parameters such as stunting (low height for age) and wasting (low weight for age) have shown a spike when compared to the earlier edition of the NFHS report from 2015-16. Along with the malnutrition trend, as per the latest report, the state is also tagged as one of the poor-performing states in the country when it comes to anemia in children under five years of age.

Malnutrition: Gains Made In NFHS-4 Reversed In NHFS-5

According to the report, the proportion of children less than five years of age, among those surveyed, who are malnourished increased in Gujarat in 2019-20 as compared to 2015-16 data. NFHS-4 had reported an improvement in the proportion of children who were stunted or had the low height for age as it declined by 12.6 % from 51.1 in NFHS-3 (2005-06) to 38.5 %. However, in 2019-20, stunting, which has a prolonged adverse effect on child health affecting physical and cognitive development has seen a marginal increase of 0.5 % in children less than 5 years – from 38.5 % in 2015-16 to 39 % in 2019-20.

Child severe wasting reflects acute under-nutrition and refers to children who have low weight for their height. This parameter has also shown an increasing trend in the state. The proportion of severely wasted children has increased by 1.1 % – from 9.5 % in 2015-16 to 10.6 % in 2019-20.

When it comes to the proportion of underweight & overweight children, Gujarat has again seen an increase. While about 39.3 % of the children surveyed were underweight in 2015-16 which was an improvement from the NFHS-3 figure of 44.2 %, the proportion increased to 39.7 % in 2019-20, showing an increase of 0.4 % in five years.

Obesity among children has also doubled from 1.9 % in 2015-16 to 3.9 % in 2019-20, according to NFHS 5.

Malnutrition And Anemia Have Increased In The State Of Gujarat Since 2015. The irony is that despite numerous schemes and policies in place, the state has still not been able to decrease instances of malnutrition. Last year, in the month of September which is also celebrated as Poshan Month (Nutrition Month) by the government of India, Gujarat CM launched the 'Purna' project in the state intending to eliminate malnutrition among girls in the age group of 14 to 18. This year, during the Poshan Abhiyan month, the state Launched 'Gujarat Poshan Abhiyan 2020-22', and made a resolution to end malnutrition completely in the state, and also announced a cash reward for Anganwadi workers. Apart from their salaries, the Anganwadi worker, ASHA worker, and the ANM worker will each get this reward money.

Apart from the schemes and programs aimed at tackling malnutrition, the government earlier this year had also decided to include tuver-dal (Pigeon Pea), a source of protein and other nutrients in the list of groceries that are sold at subsidized rates through the Public Distribution System (PDS) under the National Food Security Act, 2013. The decision was taken while presenting the state budget for the financial year 2020-21 in a bid to combat the problem of malnutrition in the state.

In Gujarat, trends have indicated a slight decline in wasting while an increase has been reported in severe wasting which is a serious matter of concern for public health functionaries. Wasting is easily reversible once the impact of infectious disease recedes and health status improves. Severe wasting, however, requires concerted medical attention along with appropriate nutritional intake.

Various initiatives have been taken up by the Gujarat government. But the state needs to enhance these schemes and programs through community-based service-delivery platforms and ensure everyone is getting access to these. To improve malnutrition among children in the age group 0-6 years, more focus needs to be given on the first 1000 days of life through multi-sectorial and community-based approaches. The counseling of caregivers especially by health functionaries at the center and frontline workers during home visits could contribute significantly to better nutrition outcomes.

Anemia among women and children remains a major concern across India, especially in Gujarat as we have seen in the last few years that the state has witnessed a sharp rise. The state desperately needs to focus on providing Iron Folic Acid supplements to its pregnant women. We have to understand that fighting anemia among children alone will not help us check its prevalence. Until we target young girls and to-be mothers, the population will continue to be iron deficient.

A weak mother will affect the whole household as if she is suffering from exhaustion and susceptible to infections, she will affect children and the elderly as in Indian households it is women who take care of the house.

The role of Civil Society Organizations, Self Help Groups, and Panchayati Raj Institutions are even more important as they can enhance availability, accessibility, and counseling for proper utilization of services, and build awareness on locally available foods, and promotion of appropriate dietary habits. The counseling of caregivers especially by frontline workers during home visits could contribute significantly to better anemia control outcomes.

The NFHS-5 data shows a declining trend in Infant Mortality Rate (IMR), which is the number of babies less than one year of age dying per 1,000 live births, and Under Five Mortality Rate (U5MR), which refers to the number of children dying before reaching the age of five years per 1,000 live births. According to the NFHS-5, the infant mortality rate (IMR), saw a decline by 8.7 % from 2015-16 to 2019-20 – from 34.2 deaths per 1,000 live births in 2015-16 to 31.2 deaths per 1,000 live births in 2019-20. However, in the context of rural areas, the state was still among the bottom seven states with 33 IMR.

Deaths of infants in the state have always made headlines, for example, in 2017, in the month of October, 18 newborn babies succumbed to death in Ahmedabad Civil Hospital because they were underweight. In 2019, the Gujarat government told the legislative assembly in the February session that more than 1000 children died in Adani hospital in Kutch in the last five years. Even, in the last three months of 2019, according to the reports, there have been deaths of almost 200 children and infants in two government hospitals in Rajkot and Ahmedabad in the state.

According to NFHS-5, Gujarat's under-five mortality rate (U5MR) is at 37.6 deaths per 1000 lives in 2019-20, down from 43.5 deaths per 1,000 live

births in 2015-2016.

Infant and Child Feeding Practices Shows A Reverse Trend

For the state of Gujarat, another reverse trend has been seen in infant and child feeding practices when compared to the data recorded under the NFHS-4. Among the children surveyed, about 37.8 % of the children were breastfed within one hour of the birth in 2019-20 as compared to 49.9 % in 2015-16. However, there has been an increase of about 9.2 % in the proportion of children being exclusively breastfed in 2019-20 (65 %) as compared to 2015-16 (55.8 %). Along with this, there has been a marginal gain in the proportion of children in the age group 6-23 months receiving an adequate diet from 5.8 % in NFHS-4 to 5.9 % in NFHS-5. But, the %age of children receiving an adequate diet is still very low as compared to other states.

Finally, we can say that only a united and grass root level approach of government and society towards Breastfeeding, Anemia, and Mother and Child Nutrition is going to save us from this condition.

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