

Review Article

A Brief History of Child Nutrition Situation and Programme Interventions in Bangladesh

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Situation of Child Malnutrition in Bangladesh

Since the independence in 1971, Bangladesh has made steady progress in improving nutrition status of children in the country. As per the first nutrition survey after independence, "Nutrition Survey of Rural Bangladesh 1975-76" carried out by the Institute of Nutrition and Food Science (INFS), Dhaka University, revealed that 31% of 12-23 months children and 28% of 24-35 months old children were acutely malnourished; and 74% of children 0-59 months old were stunted (moderate and severe). Nine out of ten families (i.e., 89%) were deficient in vitamin intake.

The first nutrition survey in East Pakistan which is now Bangladesh, was conducted in 1962-64 but did not provide much child-related data but found that over two-thirds of the daily diet consisted of rice, which was supplemented by curries, primarily of vegetables or fish, and Lentil. Milk and meat are consumed in small amounts, and fruit intake was only seasonal. Intake of cooking fats and oils was scanty. The survey revealed that 46% of households had inadequate calorie intake. Carbohydrates constituted about 83% of the total calorie intake. Moreover, 85% of the people did not meet their recommended level of daily protein intake where almost 70% of protein was from cereal proteins (plant sources) and only 14% was from animal sources. Eighty-four percent of all households consumed less than the acceptable intake value of Vitamin A (3,060 IU per person per day) and 40% of the population had deficient or low plasma concentration of Vitamin A and carotene. As a result, night blindness was common among children and about 30,000 children became blind each year. Also, about 25 percent of deaths under five were attributable to Vitamin A deficiency.

Also, this survey found physical responses to iodine deficiencies in adults, where 40% of pregnant women and 23% of male had enlarged thyroid gland. The prevalence of goiter varied geographically ranging from 10% near the coastal areas to 60% in Rangpur up to 85% in some parts

of Mymensingh. Iron intake among all income groups was below the acceptable level (12 mg per person per day). Over a third of the population suffered from anaemia, mostly from iron deficiency.

In the 1990s, Bangladesh made substantial gains in achieving food security and for the first time in its history, food grain production exceeded target requirements (based on 450 grm/person/day). At present, the growth rate of food production exceeds that of the population growth rate, resulting in the steady decline in food insecurity. Diets are shifting towards a larger share of calories coming from non-cereal, (e.g., vegetables, fruits, and animal products, etc.), which is a positive change from 50 years ago. Only 64% of diets are now comprised of cereals compared to 82-83% in 1962-64, and 81% in 1998. The calorie intake per person per day is 2,393.0 kcal in 2022 which was 2,210.4 kcal in 2016, and 2,318.3 in 2010.

The nutrition survey, undertaken in 1981-82, found that per capita calorie intake reduced from 2,301 Kcal/person/day in 1962-64, to 2,094 in 1975-76, to 1975 in 1981-82. The stunting levels (moderate and severe) among 0-59 months age children improved from 74% in 1975-76 to 57% in 2081-82. The next nutrition survey in 1995-96 found that the stunting levels had increased again, and 63% of rural children (6-71 months) were stunted.

Between 2004 and 2022, stunting in children under-5 decreased substantially from 51% to 24%, wasting from 15% to 11%, and underweight from 43 to 22%. Bangladesh has thus already achieved the World Health Assembly global stunting target of 25% by 2025.¹

The below graph shows the data for stunting, wasting and underweight of children in different nutrition surveys conducted since 2004 up to 2022. This shows steady decline in child malnutrition during this period except wasting rate rising between 2017-18 and 2022. The underweight prevalence remains the same during this period.

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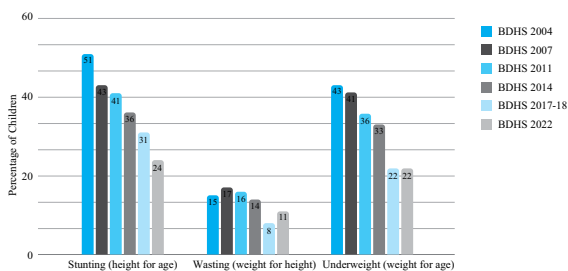


Fig. 1: A Brief History of Nutrition Situation of Bangladesh.

Bangladesh has a lower average prevalence of stunting compared to the South-East Asia Region, though higher than the global average. Much of this gain resulted from a combination of nutrition-specific and nutrition-sensitive drivers within a wider enabling environment of pro-poor economic growth, of which income growth, smaller family size; sizable gaps between births, parental and particularly women’s education, and wider access to health and water and sanitation, are all key elements.²

Government Commitments for Nutritional Improvements

Bangladesh, as a new country, showed its commitment by recognizing nutrition as a human right in the 1972 Constitution, as follows: “the State shall regard raising the level of nutrition and improvement of public health among its primary duties.....” (Article 18(1)).

The Government of Bangladesh established the Institute of Public Health Nutrition (IPHN) in 1974 to focus on nutrition services. Under IPHN, 17 Child Nutrition Units were established to manage and rehabilitate severely malnourished children in each district. In 1975, the Bangladesh National Nutrition Council (BNNC) was formed to have oversight of planning, coordination, and advocacy for nutrition. The creation of these organizations was key to nutrition improvement in the country and food shortages which existed in 1974-75, have not reappeared in Bangladesh since.

Government Programmes for Nutritional Improvements

The long journey of nutrition interventions in Bangladesh has been eventful but not so smooth. Examples of successful nutrition programmes in Bangladesh since its independence in 1971 are as follows:

Vitamin A Supplementation Programmes

In response to the severity of Vitamin A deficiency across the country highlighted in the nutrition survey of 1962-64, the Government of Bangladesh started the Vitamin A supplementation programme. In 1973, under the National Blindness Prevention Programme, Vitamin A capsules (200,000 IU) were administered to all rural children under six years of age. The first mass

distribution was held from February to June 1973, and the second in June to July the following year, during a bout of severe flood and food shortages. It remains one of the most successful programmes up until today.

From 1976, this programme became bi-annual (except in 1978 and 1982)³ to match with the seasonal high prevalence of Vitamin A deficiency. The distributions were carried out during pre-monsoon time- April-May and pre-harvest time- October-November every year. About 14,000 male family welfare workers (now called Health Assistants (male)) and Family Welfare Assistants (female)) were responsible for household distribution. Training of all staff was conducted, followed by refresher training in 1987 and 1988. In 1979, two new groups were included: 7-15 years old children with night blindness, and lactating and pregnant mothers, though the latter group was excluded after 1981.

In the mid-1990s, supplementation of Vitamin A to children aged less than 12 months was integrated into the Expanded Programme on Immunization- a historical milestone. In 1995, vitamin A administration among 1-6 year old children was integrated with the National Immunization Day (NID). Both of these helped increase immunization coverage. Subsequently, the Government, with support from UNICEF, initiated the week-long nationwide mobilization campaign- ‘National Vitamin A Week’ under National Vitamin A Plus (NVAC+), for supplementation of vitamin A and deworming tablets to children aged 12-71 months. The Bangladesh Integrated Nutrition Project (BINP) started distribution of vitamin A capsules among mothers within 14 days of delivery in 2003.

The country implemented the 27th round of NVAC+ campaign in 2022 to cover about 22 million children (6-59 months) throughout the country from 120,000 distribution centers in both rural and urban areas. The national coverage reached 98%, with no rural urban differences.

Bangladesh has made impressive progress in reducing the vitamin A deficiency. After Independence, Vitamin A distribution was between 42-25 per cent, around 22% in urban areas and as low as 2.4% in Dhaka city slums. Sub-clinical vitamin A deficiency has reduced from 56% in 1994 to only 20% in 2011-12, which is 64% reduction. Night blindness has become history and no severe cases are observed.⁴

In 2013, the Government of Bangladesh passed the National Edible Oil Fortification Law which required Vitamin-A fortification of all edible oils and restricted the import, production and sale of unfortified oils. Calculations suggested the population would receive 20% of daily estimated requirements via fortification of oil, though support is needed to increase consumption among the poorer groups.

Control of Iodine Deficiency Disorder (CIDD) Programmes

Children born to iodine deficient mothers are more likely to have immature brain development, lower Intelligent quotient (IQ), lower mental age than their chronological age, and diminished learning capacity. The severity of iodine deficiency was first identified in 1962-64 survey. Since then, National Iodine Deficiency Disorders (IDD) Surveys were undertaken in 1981-81, 1993 and 1999 by INFS and IPHN, with the technical support from International Council for the Control of Iodine Deficiency Disorders.

At the beginning of the IDD control programme, a few pockets in northern and eastern districts (e.g., Jamalpur and Rangpur) with high endemicity of goitre were identified. As an interim programme, iodine supplementation programme in the form of iodized oil (I-Cap and Lipiodol Injection) was undertaken by INFS, and later by IPHN, with support from UNICEF.

The Government of Bangladesh passed a law in 1989 making it mandatory for all edible salt to be iodized (either produced in-country or imported), one of the first countries to do so in the region. By 1999, seven years into the initiation of the universal salt iodization programme, 99% of the available salt in the market was iodized from almost nonexistence before programme. After this, Bangladesh Small and Cottage Industries Corporation installed salt iodization plants in all 265 salt factories in the country. The Iodized Salt Bill was passed in 2021, making iodization of edible salts mandatory.

A reduction of goitre rates and iodine deficiency among children and women has been achieved since the universal salt iodization was instituted in 1993. Total goitre rate has dropped from 47% to 6% (in children) and 56% to 12% (in women) in 2004-05 to a rarity now. The sub-clinical level of iodine has dropped from 69% three decades ago, to only around 20% in children and 30% in non-pregnant and non-lactating women in 2019-20.

Anaemia Prevention, Control Strategy and Programmes

Anaemia adversely affects immunity and increases morbidity from infections. It causes poor growth of children, deters cognitive development, and causes apathy which affects school performance- poor concentration for example. It also results in poor social development, poor quality of life, low productivity and income due to fatigue and lower physical work capacity.

The UN Standing Committee on Nutrition has estimated that the economic costs of anaemia in Bangladesh amounts to 7.9% of the country's gross domestic product (UN/SCN, 2004). In addition, anaemia during pregnancy increases risk of prolonged labour and reduces chances of survival and contributes to low-birth-weight babies. Moderate anaemia increases the risk of maternal death by

1.35 times, and severe anaemia by 3.5 times (Galloway, 2003). In Bangladesh, the common social practice is early marriage for girls and early conception. When the iron demands of pregnancy are combined with the iron demands of growth during adolescence, also increases the risk of anaemia among young mothers and their infants.

In 1962-64 Nutrition Survey, anaemia was found to be a widespread and severe condition affecting mostly the women of childbearing age and growing children, despite high intake of iron (almost three times of the recommended intake). The survey also revealed widespread poor dietary intake of both micronutrients and macronutrients needed to enhance the absorption and metabolism of iron and production of haemoglobin and red blood cells, including folic acid, vitamin B12, vitamin C, vitamin A and animal protein Vitamins A and B-12, and zinc deficiencies.⁵ Multiple micronutrient deficiencies coexist and contribute to maternal anemia, poor maternal health, and adverse pregnancy and infant outcomes (NMS, 2014).

High iron intake in Bangladesh, despite sub-optimal dietary iron intake, is thought to be linked to bioavailable iron in ground water which is largely sourced from tube-wells. This mechanism for sourcing water also reduces the risk of exposure to common water borne diseases that are linked to poor health. In the "Studies on the etiology of Anaemia in Bangladesh: Effects of Helminths and Safe water in 1982", it was revealed that more of the more severely anaemic populations were in non-tube-well areas, as the tube-well water was not as contaminated with worms as the other sources of water (e.g., ponds, canals and river, etc.).⁶

In 2001, the Institute of Public Health Nutrition (IPHN), under the Ministry of Health and Family Welfare, developed the National Guidelines for the Prevention and Treatment of Iron Deficiency Anaemia, which recommend iron supplementation, dietary improvement, food fortification and helminth control in preschool-aged children, school-aged children, adolescent girls, and women of reproductive age. However, anaemia prevention and control activities only focused on iron folic acid supplementation and have not yet paid adequate attention to address the other causes of anaemia.

In 2005-2006, IPHN, arranged a series of consultations to develop the National Strategy on Prevention and Control of Anaemia, 2007. Priority strategies include: i) micronutrient supplementation, ii) parasitic diseases control, iii) dietary improvement, iv) food fortification, and v) extensive behaviour change communication. Between 2011-12 and 2019-20, anaemia among children there was a 12% drop, on the other hand, anaemia among non-pregnant and non-lactating women there was 2.9% increase.⁷

Breastfeeding Campaign including Infant and Young Child Feeding (IYCF) Activities

To achieve the 2030 Agenda for Sustainable Development Goal (SDG), breastfeeding has become a key component for protecting mother and child health. Exclusively breastfed children are less likely to develop acute respiratory and diarrhoeal infections. Breastfeeding also protects against both infectious and non-infectious disorders, including obesity, diabetes, and cancer in mothers.

Breastfeeding became a prominent issue in Bangladesh in 1988, following the first national conference on breastfeeding. In April 1989, a group of motivated breastfeeding champions, including medical professionals, academics, scientists, individuals and development partners, joined hands to initiate a countrywide campaign for Protection and Promotion of Breastfeeding (CPPBF) to halt the rapid decline of breastfeeding practices. The government, UNICEF, WHO, Save the Children and other development partners have been active in this movement.

On 9 December 1991, Hon'ble Prime Minister signed the Dhaka Declaration pledging full commitment for the protection, promotion, and support of breastfeeding, thanks to the persistent work of CPPBF. To enable the campaign to work independently and receive funds from donors, it was registered as an NGO under the new name, Bangladesh Breastfeeding Foundation (BBF) in 1995. Following NGO status, BBF received funds from the World Bank for Bangladesh Integrated Nutrition Project (BINP), from CIDA through the National Nutrition Programme (NNP) and from the National Nutrition Services (NNS), to provide IYCF, maternal nutrition, adolescent nutrition services and dissemination of National Breastmilk Substitute Act 2013 activities. From its inception as a campaign upto now, the BBF serves as the national authority on breastfeeding.

Exclusive breastfeeding rates in Bangladesh have increased from 45% in 1993-94 to 65% in 2022. Improved rates can be attributed to a multi-pronged approach, through a combination of community mobilization, mass media communication campaigns, comprehensive health worker training, and the strategic use of data for advocacy for programme design. Additionally, the Government of Bangladesh has committed to creating an enabling environment for breastfeeding by instituting a state-allotted 6-month maternity leave, as well as enacting the National Breastmilk Substitute Act 2013 to prohibit unethical marketing of breastmilk substitutes.

Management of Acute Malnutrition and Nutrition Services during Humanitarian Crisis

The management of children with acute malnutrition has been a priority in Bangladesh and in 2008, the National Guidelines on Severe Acute Malnutrition (SAM) were prepared, followed by the Community-Based

Management of Acute Malnutrition (CMAM) Guideline 2011. The SAM Units were established at 394 secondary and tertiary level health facilities. Each facility has two dedicated beds and is equipped with therapeutic supplies, medicines, equipment, trained staff to manage SAM cases with medical complications. Functionality of these facilities are assessed twice a year. A recently completed facility assessment report in 394 SAM facilities (February 2022) revealed that functionality has improved from 27% in May 2020 to 49% in July 2021 to 53% in February 2022.

Provision of nutrition services during emergencies has also been a key focus for Bangladesh. During COVID-19 pandemic, the government prepared a costed multisectoral Immediate Socio-economic Response Framework to prevent any deterioration of child malnutrition, jointly with the development partners. As part of the global initiative, Bangladesh has prepared a strategy along with costed action plan, to prevent wasting among children through a comprehensive systems approach. A national Rapid Nutrition Assessment Team was formed to strengthen the government's capacity to assess emerging humanitarian situations in accordance with applicable international standards.

Community Based Multisectoral Nutrition Programmes through Bangladesh Integrated Nutrition Project (BINP) and National Nutrition Programme (NNP), 1996-2011

Prior to 1995, high malnutrition rates were affected by: a) inadequate household food security, b) weak health services and poor environmental sanitation, and c) inappropriate "caring" practices, i.e., eating, feeding, personal hygiene and health care behaviours. Government actions against malnutrition had been limited and fragmented, with no comprehensive national strategy or alignment across sectors, NGO and UN agencies. In view of the prevailing situation, a dialogue between the World Bank and the Government, generated interest at the highest level of the Government to address malnutrition.

In 1995, the government launched the Bangladesh Integrated Nutrition Project (BINP) with support from UNICEF and the World Bank through a \$59.8 million IDA credit. It was the first large-scale community based multisectoral government intervention and covered more than two million households across the country. More than 120,000 children and 140,000 malnourished pregnant women directly benefited from project services, which included nutrition counseling and food and micronutrient supplementation. As 25% of households in Bangladesh were food insecure, this nutrition project aimed to lay the foundation for the implementation of a national nutrition programme.

During the BINP, community-based services were delivered through 9,000 community nutrition centers, managed by village committees and 14 nongovernmental

organizations, who were contracted by the government. Food supplements were purchased, prepared, and sold in the centers by women's group members, thus supplementing their household incomes. About 150,000 food insecure households (consuming less than 1,800 kcal. per day) were provided with food security services. And one-third of those were covered by microcredits for poultry for nutrition and nutrition-gardening to increase consumption.

In 1998, a review of the project noted that severe malnutrition among under-twos had declined from the baseline figure of 13% to 2%. The number of low-birth-weight babies had decreased by 30%, and there had been an improvement in weight gain by at least half of pregnant women in project areas. The success of BINP, undertaken in a large but limited area, had demonstrated how community-based nutrition services, delivered with the help of NGOs, could bring about rapid, sustainable reductions in severe malnutrition among children, and deliver targeted food and micronutrient supplements to reproductive age women suffering from chronic energy and micronutrient deficiencies.

The BINP laid the groundwork for the development of the National Nutrition Programme (NNP), supported by UNICEF, World Bank, CIDA and Netherlands Government. The NNP was developed in 2002 and implemented in 2004, covering 172 Upazilas (sub-districts), covering around 35% of the country, with the aim to scale up nationwide. The programme had benefited from strong and consistent advocacy, added flexibility, a subnational presence, and pioneering work in nutrition communication for behavioral change.”

Following on from NNP, nutrition services were then mainstreamed within the existing health and family planning services, as per the health sector plan (HPNSDP 2011- 2016). A separate Operational Plan for the National Nutrition Services (NNS) was formulated with the task of mainstreaming nutrition, which still continues today.

Support to Scaling Up Nutrition (SUN) Movement in Bangladesh

Bangladesh was an early adopter and joined the SUN Movement in September 2012 with a high-level commitment from the Hon'ble Prime Minister. In Bangladesh, all five SUN networks i.e., Multi-sectoral Platform (MSP), Civil Society, the United Nations, Academia and Research and Businesses, and Donors, are functional and working jointly to achieve the goal of SUN global movement.

The SUN networks work closely with five multisectoral platforms under BNNC for policy advocacy around national nutritional priorities. At sub-national level, SUN is represented by the civil society groups in the District multi-sectoral Nutrition Coordination Committees, created under the BNNC.

Conclusion

The child nutrition situation in Bangladesh has improved greatly since the independence of Bangladesh in 1971. This was possible due to a combination of factors including an enabling policy environment, stronger economy and higher budgetary allocation in the national budget. Disorders associated with Vitamin A and iodine deficiencies have significantly dropped, which is linked to the implementation of Vitamin A supplementation and a salt iodisation programme. Concerted efforts have led to a drop in anemia (though still high) and an ongoing campaign to highlight the importance of exclusive breastfeeding has brought the issue to the mainstream.

However, in the most recent Bangladesh Demographic Health Survey in 2022, there has been an increase in wasting, and the rates of children under-5 underweight have not seen an improvement, and exclusive breastfeeding rates have declined. Therefore, a strong and more collaborative effort by all partners is needed to achieve improved nutrition status of children in Bangladesh.

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