

"It is easier to build strong children than to repair broken men."—Frederick Douglass.

CHILDREN ARE THE foundation of a vibrant country like India. Despite efforts to improve the nutritional status, malnutrition continues to be a major health concern in our country. It is still the major cause of morbidity and mortality in children. Of all the Indian children under the age of five, about one in three (36%) is underweight (low weight for age), about one in three (38%) is stunted (low height for age), one in five (21%) is wasted (low weight for height), and only every second child exclusively breastfed for the first six months; 3,000 children die every day from poor diet-related illnesses.

According to the 2018 Global Nutrition Report, India accounts for more than three out of every 10 stunted children globally. The chronic impact of stunting on lifelong learning and adult productivity, in addition to increased disease susceptibility, is well known. Going by the National Family Health Survey-4 results, it appears 40% of our future workforce will be unable to achieve their full physical and cognitive potential. Many children are born to anaemic and malnourished teenage mothers. Indeed, about 34% of Indian women are chronically undernourished and 55% are anaemic.

Mapping of district-level aggregate data from the National and Family Health Survey 2015-16 showed stunting varies greatly from district to district (12% to 65%), with 239 of 604 districts having levels above 40%. Ironically, it is observed that the topmost milk-producing states of the country also happen to be high at incidence of malnutrition. This information necessitates urgent intervention by central and state governments.

A common cause across all forms of malnutrition is a suboptimal diet. With abundant supply of milk, which will likely to continue in the future, one possible and feasible intervention that can tide over this situation is inclusion of milk in the feeding programmes for children in schools. Nutrient needs increase in adolescences to meet the demands of pubertal growth and brain maturation. Inadequate nutrient intake during childhood leads to undernutrition, which results in growth retardation, reduced work capacity, and poor mental and social development. Addressing nutrition problems and adopting healthy dietary habits during adolescence can be important for potential 'catch up' growth, improved cognition, and reduced risk of both communicable and non-communicable diseases (NCDs) later in life. According to the Food and Agriculture Organisation (FAO), "malnutrition is the single largest contributor to disease in the world." Over the last two decades, there has been a growing body of evidence that *in utero*, infant and young child undernutrition is directly linked to vulnerability to adult nutrition-related NCDs.

Studies endorse that a diet containing milk or dairy products provides 25-33% of the protein requirement and may have a positive effect on weight gain and linear growth in malnourished children. Milk is an excellent source of several micronutrients such as calcium, vitamin D, vitamin B12, phosphorous, potassium, etc, which help make bones strong, increase immunity, and improve vision, cognitive and motor functions of the body. Some of these micronutrients are commonly deficient in populations that consume low amounts of animal-sourced foods. Therefore, milk, being a wholesome food, can play an important role in reducing malnutrition, if included in regular diets of the population.

India is the largest producer of milk in the world, but people belonging to lower income groups cannot afford milk due to low purchasing power—even though it has been observed there is an increasing incidence of milk consumption over the years. Thus, children from lower income



Illustration: ROHNIT PHORE

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How milk can address malnutrition in children

In schools where NDDB-NFN's Giftmilk scheme was run, there was a 7% decrease in the number of stunted children, kids had better BMI for their age and sex compared to control schools, and there was reduced visual impairment among children and marked improvement in IQ levels. In addition, cumulative attendance increased by more than 10% in these intervention schools

strata are deprived of essential nutrients to support their optimal physical and mental growth. Studies on determining association between nutritional statuses with eating habits in schools show a need to increase nutritional counselling regarding healthy eating habits in schools and to conduct appropriate interventions to improve the nutritional status of adolescent girls.

Taking a cue from the benefits of consuming milk, the NDDB Foundation for Nutrition (NFN), a trust/society created by the National Dairy Development Board, has been facilitating distribution of fortified flavoured milk to children in select government/public schools across the country under its Giftmilk scheme. It runs by channelising CSR allocations of corporates. The NFN strives to provide

pasteurised flavoured fortified (with vitamin A and D) milk under robust cold chain logistics to children. The quality of milk is maintained by creating a cold supply chain till it reaches the end-beneficiary. The NFN follows a robust implementation methodology, maintaining high transparency and accountability. Data is shared and monitoring is done at each level using MIS developed for tracking milk consumption.

The NFN has distributed 60 lakh units of milk to about 44,000 schoolchildren covering 94 schools in seven states till March 2019. The response received from students, teachers and parents has been encouraging. Giftmilk for students, mostly tribal, of government schools in Latehar district of Jharkhand started in November 2017, covering 18,000 students of 43 schools. The Rajendra Institute of Medical Sciences, Ranchi, conducted a scientific study to understand the impact of Giftmilk on children in intervention schools of Latehar.

The study revealed promising findings on the benefits of providing 200 millilitres of fortified, flavoured and pasteurised toned milk for one year on a daily basis on all working days to children studying in 1 to 10 standards. It found that consumption of milk helped in fighting infections in children. Also, there was a 7% decrease in the number of stunted children. Kids in intervention schools were better nourished as they had better BMI for their age and sex compared to control schools. Fortification also showed its effect in reducing visual impairment among children. The number of anaemic children decreased after regular consumption of milk, which may be attributed to good quality proteins provided by milk. There was a marked improvement in IQ levels, showing a positive impact on cognitive functions of children. Cumulative attendance increased by more than 10% in intervention schools. The impact study thus testified Giftmilk's positive impact in addressing malnutrition through milk and also recommended to continue the programme for a minimum of three years for sustained benefits to children.

Similar school milk programmes have been running in developed and developing countries. In India such schemes are being implemented by states such as Gujarat, Karnataka, Rajasthan, Madhya Pradesh, etc. Most of them provide powder-based milk to children. Reconstitution of milk in schools from milk powder creates an opportunity for quality variations, safety issues and leakages/misuse of resources. The provision of milk reconstituted from powder also leads to distaste amongst children, decreasing their interest for regular consumption.

The NDDB has been impressing upon state governments of major milk producing states for introduction of school milk programme in their states. The Centre, with the recommendation from the NITI Aayog, may consider announcing a policy and a centrally-sponsored scheme with a fund-sharing system between the Centre and state governments to initiate school milk programmes on a country-wide basis, based on Latehar model. There is a vast network of 214 dairy cooperatives and 31 dairies across India, which can be instrumental in implementing such a scheme. This will have the twin advantages of improving child nutrition on one hand and providing market/livelihood support to dairy farmers, a majority of whom are small/marginal farmers and landless, on the other hand.

With the growing economy and sizeable population below the age of 15 years, we need to ensure that every child is well-nourished. Any initiative in addressing malnutrition through school milk programmes would benefit and transform lives of millions of children and help build a strong India.

"History will judge us by the difference we make in the everyday lives of children."—Nelson Mandela.