

NATIONAL NUTRITION SUPPLEMENTATION PROGRAMMES

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The problem of malnutrition in India has been recognized since the inception of the 'Five Year Plans' and a number of nutrition programmes have been introduced for combating it. These programmes were initially started as short term emergency measures and were by no means expected to eradicate the problems of nutritional disorders from the country. However, they are continuing and are now relied upon to be effective in at least reducing the quantum of severe form of nutritional disorders and thus help in bringing down the morbidity and mortality due to them(1).

In India, during the First and Second Five Year Plans, the nutrition activities were aimed at increased food production, initiating supplementary feeding, nutri-

tional surveys and prevention of food adulteration activities. In the Third Five Year Plan, applied Nutrition Programmes (1962) and the Mid-Day Meal Programme (1962) were started. In the Fourth Five Year Plan, the Special Nutrition Programmes (1970) and the Integrated Child Development Services (ICDS) Scheme (1975) were started. During the Sixth and Seventh Five Year Plans, steps were taken to convert the Special Nutrition Programme Centres on the pattern of ICDS scheme, by linking with other inputs like health, sanitation, hygiene, water supply and education(2).

Currently major nutrition supplementation programmes in India are: (i) Integrated Child Development Services Scheme (ICDS); (ii) Mid-day meal Programmes; (iii) Special Nutrition Programmes; (iv) Wheat Based Nutrition Programmes; (v) Applied Nutrition Programmes; (vi) Balwadi Nutrition Programmes; (vii) National Nutritional Anaemia Prophylaxis Programme; (viii) National Programme for Prevention of Blindness due to Vitamin A Deficiency; and (ix) National Goitre Control Programme. There are several other supplementary programmes which are being implemented in the country by the State Governments. The Tamil Nadu Integrated Nutrition Project (TINP) and the Chief Minister's Noon Meal Programme are two such schemes in operation in the Tamil Nadu State. International agencies like CARE, WFP, OXFAM, DANIDA are also supporting, and or organizing supplementary Nutrition programmes within selected states(3). The basic aim of all the supplementary nutrition programmes is to provide additional nutrients to target groups to fill the gap between their routine intake and the actual requirements. This manuscript attempts an overview of the

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important supplementary nutrition programmes in the country.

Integrated Child Development Services Scheme (ICDS)

The Integrated Child Development Services (ICDS) was launched on 2nd October, 1975 in pursuance of the national policy for children in 33 experimental blocks. Success of the scheme stimulated the expansion of scheme to 2499 projects by the end of March 1991. During the year 1991-92, 75 new projects were sanctioned. It is the largest nutrition programme implemented by the Government of India(4). At present about 1.85 lakh Angnwadis are providing supplementary nutrition to 142.52 lakh children and pregnant and nursing mothers.

Beneficiaries

The beneficiaries are children below 6 years, pregnant and lactating mothers and women in the age group of 15 to 44 years.

Objectives

The broad objectives of the scheme are: (i) To improve the nutritional and health status of children in the age group of 0-6 years; (ii) To lay the foundations for proper psychological, physical and social development of the child; (iii) To reduce the incidence of mortality, morbidity, malnutrition and school drop-outs; (iv) To achieve effective co-ordination of policy and implementation amongst the various departments to promote child development; and (v) To enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper nutrition and health education(5).

Activities

The following services are provided

under the programmes(6): (i) Supplementary nutrition; (ii) Immunization; (iii) Health check-up; (iv) Referral services; (v) Treatment of minor illnesses; (vi) Nutrition and health education to women; (vii) Pre-school education to children in the age group of 3-6 years; and (viii) Convergence of other supportive services like water supply, sanitation, etc.

Supplementary nutrition is provided for 300 days a year. On the spot feeding is done as far as possible at the Anganwadi. All children eligible beneficiaries receive daily ration of 300 calories with 8 to 10 g protein. Severely malnourished children, pregnant and lactating mothers receive daily supplementary nutrition providing 600 calories and 18-20 g protein(7).

The eligible beneficiaries are provided iron and folic acid tablets and massive dose of vitamin A through the health infrastructure existing in the ICDS project area. The cost of supplementary nutrition provided is depicted in *Table*.

Organization

ICDS is a multisectoral programme and involves several Government Departments and their services are co-ordinated at the village, block, district state and central levels. The primary responsibility for the implementation of the programmes lies with the Department of Women and Child Development, Ministry of Welfare at the centre and the nodal department at the state, which may be Social Welfare, Rural Development, Tribal Welfare or Health, etc.(8) The Anganwadi worker is the most peripheral functionary which implements the programme services at the village/community level.

Evaluation

Research studies have revealed that in

conomic group; (ii) To improve attendance and enrollment in schools; and (iii) To prevent dropouts from primary school.

Beneficiaries

The intended beneficiaries are children attending the primary school (6 to 11 years of age). Children belonging to backward classes, scheduled caste and scheduled tribe families are given priority.

Activities

Supplementary nutrition is provided to each beneficiary which provides 300 calories and 8-12g protein/day. The number of feeding days are 200 days/year; however, they vary between states and within the state also(22).

The cost of supplementary nutrition has been recently revised to as per the pattern in the ICDS scheme.

Organization

The programme is implemented through the existing network of schools and one of the school teacher is designated as the 'Organizer' and is responsible for the implementation of the scheme.

Evaluation

Only one or two studies have shown that the scheme has resulted in significant nutritional improvement of beneficiaries. However, none has reported significant improvement in school enrollment/attendance. The major bottle necks documented have been discontinuity in supply of supplementary nutrition, low budget allocation per beneficiary for purchase of food, lack of effective monitoring and supervision, pilferage in the channels of distribution, wrong identification of beneficiaries, non adherence to number of feeding days, lack of cooking facilities, substitution for the

meal at the home and inadequate storage facilities at schools(23,24).

Special Nutrition Programme (SNP)

The Special Nutrition Programme was launched in 1970-71 by the Ministry of Social Welfare, Government of India. It was initially launched as a central programme but was transferred to the state sector during the Fifth Five Year Plan. During the Sixth and Seventh Five Year Plans, steps were taken to convert the SNP centres on the pattern of ICDS scheme by strengthening them with health and other inputs(25). At present 22.87 million beneficiaries are covered by the scheme. It is planned to increase the number of beneficiaries upto 30.92 million by the end of 1991-92.

Objectives

The objective of the programme is to improve the nutritional status of preschool children, pregnant and lactating mothers of poor socio-economic groups in urban slums, tribal areas and drought prone rural areas.

Beneficiaries

The intended beneficiaries include preschool children and pregnant and lactating mothers. The beneficiaries are selected on the basis of their socio-economic groups. The pregnant mother in the last trimester lactating mothers during the first four months and malnourished children are given priority.

Activities

The major activities are: (i) To provide supplementary nutrition; and (ii) To provide health care services including supply of vitamin A solution and iron and folic acid tablets. This component has been added during the Sixth Five Year Plan.

Supplementary nutrition is provided to children 6 months to 72 months old to provide 300 calories and 10 g protein per child per day. Severely malnourished children are provided 600 calories and 20 g protein per day. Iron and folic acid tablets and vitamin A solution are also provided.

The pregnant and lactating mothers receive supplementary nutrition containing 500 calories and 20 g protein per day. Iron and folic acid tablets are also provided. The cost of supplementary nutrition is the same as in the ICDS scheme.

Organization

The programme is implemented through a network of Balwadis, which are located at the village/community level. The Balwadi worker and the helper is the most peripheral functionary implementing the scheme.

Evaluation

Evaluation studies have reported that the programme could not achieve the desired results. Some of the deficiencies identified were: beneficiaries were not selected strictly on nutritional status or socio-economic considerations, number of feeding days were not strictly adhered, the food was shared by the other members of the family, pilferages were reported in the channels of the distribution, programme was not implemented in co-ordination with health services and supplementary nutrition often replaced the regular meal at home.

Applied Nutrition Programmes (ANP)

The ANP was first implemented in Orissa and Andhra Pradesh in 1962. By the 1973, the whole country was covered by the scheme. This programme is till date the best conceived nutrition programme but it

could not achieve the desired results due to management failure. The programme was initiated as a centrally sponsored scheme but now is being implemented by the states. Due to shift in thrust in the recent years, the ANP is at present a non-expandable, low priority programme as compared to other nutrition programmes implemented by the States(1).

Objectives

The objective of the programme are (i) To make people conscious of their nutritional needs; (ii) To increase production of nutritious foods and its consumption; and (iii) to provide supplementary nutrition to vulnerable groups through local production of foods. The programme aimed at the approach of "self reliance" to be developed at the community and individual level.

Beneficiaries

The intended beneficiaries included children between 3-6 years and pregnant and lactating mothers.

Activities

ANP envisaged production of nutritious food by people themselves and to be consumed by them to improve their own nutritional status. Poultry farming, horticulture, beehive keeping, kitchen gardening and nutrition education were the main activities in the programme. Also, supplementary nutrition was provided to children and women beneficiaries.

Organization

The programme is implemented under the supervision of Block Development Officer. The Balsevikas with the help of a helper undertake the programme activities at the village/community level.

Evaluation

Evaluation studies conducted have revealed several deficiencies in the programme. The scheme could not generate sufficient awareness for the production and consumption of nutritious foods. Setting up of poultry units, pisci-culture, beehive keeping and other similar income generating activities for self reliance did not make any impact as the people's participation through Panchayat Raj institutions, Mahila Mandals could not be generated due to poor management(1).

Wheat Based Supplementary Nutrition Programmes (WNP)

The wheat based supplementary nutrition programme is a centrally sponsored scheme started in 1986. This scheme was initiated to enlarge the scope of existing nutrition programmes by covering additional beneficiaries, the children and ante-natal and nursing mothers, primarily in tribal areas, urban slums and backward areas. Initially, this scheme was meant to cover additional beneficiaries who could not be covered by the ICDS projects. However, from 1990, only the beneficiaries of the central sector ICDS projects are provided supplementary nutrition under this scheme. At present 16 States and 3 Union Territories are implementing this scheme, with a target of thirty lakh beneficiaries.

Objectives

The broad objectives is to enlarge the scope of existing nutrition programme by covering additional beneficiaries, *i.e.*, *pre-school* children and nursing and expectant mothers through wheat based supplementary nutrition(26).

Beneficiaries

The intended beneficiaries are children

of pre-school age, nursing and expectant mothers in disadvantaged areas with high infant mortality or high concentration of Scheduled Castes, particularly in urban slums and backward rural and tribals areas.

Activities

Under this scheme supplementary nutrition is provided to the pre-school children and pregnant and expectant mothers. The scheme consists of two components, *viz.*, the centrally funded component and State funded component.

(i) *Centrally funded component:* Under the centrally sponsored WNP, supplementary food containing 300 calories and 10 grams of protein is given to children and 500 calories and 20 grams of protein to expectant and nursing mothers. Assistance at a cost norm of 75 paise per beneficiary per day for 25 days in a month is provided. Out of 75 paise, the Government of India contributes 50 paise and the balance 25 paise is borne by the concerned State Governments themselves(27).

(ii) *State funded component:* Under this component, wheat was initially provided to the State Governments at a subsidy of Rs. 700/- per MT to provide supplementary nutrition to the beneficiaries covered by the State Government Nutrition Programmes. From 1989, no subsidy is given to the State Governments. The States are, however, now provided wheat at the public distribution system (PDS) rate.

Evaluation

No evaluation study has been reported so far for this programme.

Balvadi Nutrition Programme (BNP)

The Balvadi Nutrition Programme (BNP) was started in 1970-71. It is operated through Balwadis and Day-Care

Centres which are being run by the five national voluntary organisations. There are about five thousand Balwadis implementing the programmes. It is a non-expanding and non-plan activity of the Government of India(27). At present about 2.29 lakh beneficiaries are being covered under the scheme.

Objectives

The programme aims to supply about one third of the calorie and half of the protein requirements of the pre-school child as a measure to improve the nutritional status. The aim is to supplement to bridge the gap between the nutritional requirement and availability of nutrients to the child.

Beneficiaries

The beneficiaries are pre-school children between the age of 3 to 5 years. Priority is given to children belonging to low income group.

Activities

Supplementary nutrition comprising 300 calories and 10 g of protein per child per day is given for 270 days a year. Apart from nutritional supplementation, the activities for social and emotional development are undertaken at Balwadis.

Organization

The Balwadi worker is the most peripheral worker implementing the programme at the village/community level.

Evaluation

No large scale evaluation of this programme has been documented.

National Programme for Prevention of Nutritional Blindness due to Vitamin A Deficiency

Vitamin A deficiency is a major public health problem among pre-school children in India. The National Programme for prevention of nutritional blindness due to vitamin A deficiency was launched in 1970 and presently covers 30 million beneficiaries. According to rough estimates, every year thirty to forty thousand children may become victims of nutritional blindness(22). The programme comprises a long term and a short term strategy. The short term intervention focuses on administration of megadoses of vitamin A on periodic basis, while the long term strategy emphasizes on dietary intervention to increase the intake of foods which are rich in vitamin A(28).

Objectives

The specific objective of the programme is to reduce the disease and prevent blindness due to vitamin A deficiency.

Activities

A massive dose of vitamin A is given every 6 months to children between the ages of 6 months to 5 years(29). The scheme gives priority to children aged between 6 months to 3 years as the highest prevalence of clinical signs of vitamin A deficiency are reported in this age group. The recommended schedule for megadose administration is: (i) 6-11 months old one dose of 1,00,000 IU, and (ii) 1-5 years old 2,00,000 IU every 6 months. A child is expected to receive a total of 10 doses of vitamin A before his fifth birthday(30).

The long term strategy emphasize the improvement of dietary intake of vitamin A through regular consumption of vitamin A rich foods such as dark green leafy vege-

tables, yellow vegetables and fruits, dairy products and the promotion of breast feeding.

Organization

The programme is implemented through the existing network of Primary Health Centres and Sub-Centres. The Female Multipurpose Worker and other paramedical functionaries Primary Health Centres are responsible for administering Vitamin A concentrates to children and for imparting nutrition education to mothers. The services of ICDS functionaries are utilized for the implementation of the programme.

Evaluation

An evaluation of the programme conducted by the National Institute of Nutrition (NIN) in 1975-76 revealed that in areas where the programme was implemented meticulously, there was significant reduction in the prevalence of signs of vitamin A deficiency. However, in other areas where the programme was implemented poorly, the desired impact was lacking(31).

A repeat evaluation was conducted in 1979 by the National Institute of Nutrition in nine states. It was found that the coverage of pre-school children by vitamin A supplementation varied in different states. The reasons for inadequate coverage were irregular and short supply of vitamin A drug, lack of community preparedness for receipt of vitamin A supplementation, lack of supportive supervision of peripheral health workers by medical officers, lack of nutrition education to the beneficiaries. It was found that the female health workers who were busy with family planning work could not achieve the targets. At present, of the estimated 100 million preschool children in India, vitamin A is procured for

distribution of only 30 million beneficiaries, *i.e.*, less than a third of eligible beneficiaries can receive vitamin A(31).

National Nutritional Anemia Prophylaxis Programme (NNAPP)

Nutritional anemia is a major public health problem in India. The NNAPP was started in 1970. It is a centrally sponsored scheme. Anemia especially affects women in the reproductive age group and young children. It is estimated that over 50% of pregnant women suffer from anemia. Nutritional anemia, due to iron and folic acid deficiency, is directly or indirectly responsible for about 20% of maternal deaths. Anemia is also a major contributory cause to the incidence of premature births, low birth weight and perinatal mortality(32). Presently, 22 million adult and 30 million child beneficiaries are being covered under the programme.

Objectives

The programme aims at significantly decreasing the prevalence and incidence of anemia in women in the reproductive age group, especially pregnant and lactating women and preschool children.

The specific objectives of the programme are(33): (i) To assess the baseline prevalence of nutritional anemia in mothers and young children through estimation of hemoglobin levels. The Government of India has recently taken a decision that hemoglobin estimation should not be undertaken in view of its limited utility and risk of spread of diseases; (ii) To put the mothers and children with low hemoglobin levels (less than 10 and less than 8 g, respectively) on anti-anemia treatment; (iii) To put the mother with hemoglobin level more than 10 g/dl and children with hemoglobin more than 8 g/dl on the prophylaxis

programmes; (iv) To monitor continuously the quality of the tablets, distribution and consumption of the supplements; (v) To assess periodically the hemoglobin of the beneficiaries; and (vi) To motivate the mothers to consume the tablets through relevant nutrition education (and to give to their children).

Beneficiaries

The scheme beneficiaries are children in the 1-5 years age group and pregnant and nursing mothers, female acceptors of terminal methods of family planning and IUDs.

The target beneficiaries of the scheme are 50% of the total pregnant and nursing mothers and 25% of total women acceptors of terminal methods and IUDs. The target child population is 50% of total population in the age group of 1-5 years.

Activities

The programme focuses on the following activities: (i) Promotion of regular consumption of foods rich in iron; (ii) Supply of iron and folate supplements in the form of tablets (folifer tablets) to the "target" group; and (iii) Identification and treatment of severely anemic cases.

The recommended daily dosages of iron and folic acid (IFA) tablets is: (i) Adult women—60 mg elemental iron (equivalent to 180 mg ferrous sulphate) + 0.5 mg folic acid; and (ii) Children aged—20 mg elemental iron (equivalent to 60 mg ferrous sulphate) + 0.1 mg folic acid. For young children, who cannot swallow, liquid syrup containing the same amount of IFA was given (2 ml at a time). This has been discontinued since 1991.

Organization

The programme is implemented

through the Primary Health Centres and its Sub-Centres. The Multipurpose Worker Female and other para-medical functionaries in the PHC's are responsible for the distribution of IFA tablets (adult and pediatric doses) to beneficiaries. The functionaries of ICDS scheme assist in implementation of the programme.

Evaluation

Research studies have revealed the following weaknesses in the programmes (34-36): (i) The budget provision for the scheme is low to cover all the target beneficiaries, who are exposed to risk of anemia; (ii) The IFA tablets for 100 days are provided for prevention of nutritional anemia which may occur in non-anemic mother is the responsibility of the State Health Sector which do not have adequate resources for anti-anemic treatment. In actual practice all beneficiaries are given the same number of tablets irrespective of the severity of anemia; (iii) The programme requires estimation of hemoglobin. However, the functionaries are not provided with facilities to carry out the hemoglobin estimation; (iv) The supervision and monitoring of programme is given a low priority at all the levels, namely, Central, State, District, Block and PHC levels; (v) The performance reporting of programme requires improvement. The States send their reports about the number of individuals initiated for the prophylaxis course rather than those who have completed the course. This type of reporting does not reflect the correct picture of performance achievements; and (vi) The beneficiaries do not collect or consume supplements regularly simply because majority of them do not feel that they require these nutrients, as they are apparently healthy.

National Goitre Control Programme (NGCP)

The National Goitre Control Programme was launched in 1962 as a centrally sponsored scheme. At present, in India about 150 million people are estimated to have been exposed to the risk of Iodine Deficiency Diseases (IDD) and this figure may touch 200 million by the end of this century. The IDD problem continues to exist especially in the Sub-Himalayan belt. Recent studies, however, have shown that there are pockets with IDD in other parts of the country too. In all, till 1991, 204 districts have been surveyed in the country and 182 have been found to be endemic for IDD(37).

Objectives

The main objectives of this programme are (i) To conduct the initial surveys to assess the magnitude of the iodine deficiency disorders; (ii) To supply iodized salt in place of common salt to the entire country by 1992; and (iii) To conduct resurveys to assess the impact of iodized salt after 5 years.

Beneficiaries

All people residing in endemic and non-endemic areas for IDD are the intended beneficiaries. However, the endemic areas are to be given priority.

Activities

The following activities are conducted under the scheme:

(i) *Iodization of salt*: In order to control the problem of IDD, the Government of India has initiated steps since 1st April, 1986 for universal iodization of edible salt in a phased manner by the year 1992.

Initially, in order to meet the require-

ments of iodized salt in the endemic areas, 12 iodization plants were set up. Against the installed capacity of production of 8-10 lakh MT of iodized salt per annum, the actual production was only 2.0 lakh MT. In 1986, the government issued licenses to nearly 500 units to produce iodized salt. Till 1991, 368 units have started functioning with a production capacity of 33 lakh MTs. The estimated annual requirements is about 50.00 lakhs MT to provide all endemic areas with iodized salt. The production of iodized salt during 1990 remained almost static and further demand for iodized salt could not pick up in view of the fact that still a number of State Governments have to ban sale of non-iodized salt.

To encourage production of iodized salt, the Government is providing subsidies to iodized salt manufacturers @ Rs. 20/- per MT.

(ii) *Notification for banning use of noniodized salt*: The sale of non-iodized salt has been banned completely in 18 States and partially in 6 States. The Government stands firmly committed to universal iodization of salt.

(iii) *Establishment of Goitre Cell*: To ensure adequate monitoring and effective implementation of the NGCP, 17 States and 3 UTs have established a Goitre Cell in their State Health Directorate for which the Government provided cash grants.

(iv) *Information, education and communication activities*: Cash grants have been provided by the Central Government to States and Union Territories for production of health education material and carrying out health education activities on IDD as well as for undertaking surveys.

(v) *Intersectoral co-ordination*: It has been realized that NGCP activities require integrated efforts of multiple agencies like

Industry, Railways, Health, etc. The focus of NGCP activities has now been shifted from Health Department to multi and interdisciplinary participation.

Evaluation

Evaluation studies(38,39) have identified the following areas which require strengthening: (i) Irregular distribution of iodized salt for varying periods; (ii) Lack of supportive supervision for quality of iodized salt distributed; (iii) Failure of lifting of allotted quotas of iodized salt by wholesale agents for further distribution to retailers; (iv) Inadequate co-ordination between salt dealers and foods inspectors (the implements of PFA Act) causing disruption in the sale of iodized salt, and (v) Poor co-ordination between various Departments like Food and Civil Supply, Health, Industry, Industry and Railways.

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NOTES AND NEWS

AN UPDATE IN PEDIATRIC GASTROENTEROLOGY

An Update in Pediatric Gastroenterology sponsored by the Medical Council of India and American Association of Physicians of India is scheduled to be held at the Maulana Azad Medical College, New Delhi from *5th to 7th February, 1993*.

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