Recommendations for a New Nutrition Policy for India

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Abstract

Introduction: Nutrition related issues in India are in a phase of transition. While the age old problems of under nutrition still prevail, a rapid up-surge of health issues related to over nutrition and obesity is evident here. The prescriptions laid down in National Nutrition Policy developed in the year 1993 limits itself to the issue of under-nutrition. With the dawn of the new millennium, the transition in the dietary patterns and habits of Indians has resulted in a changed health scenario. The proportions of over-weight and obese individuals are increasing at an alarming rate. The stark picture of over-nutrition is seen even among children. All the states in India though at different pace are in this transition phase. Factors pertaining to food production, utilisation, food safety, micronutrient deficiencies and nutrition related chronic morbidities are some of the newer challenges. These issues must receive political attention in order to be cornered effectively. This article attempts to review some of the existing nutritional problems and identifies core areas for developing policy actions.

Keywords: Nutrition, National Nutrition Policy of India, Food Safety, Nutrition and Health

Introduction

Nutritional problems are not just medical problems, but are multi-dimensional in their aetiologies and effects. Development sectors like education, agriculture, water-sanitation, rural development, local governance and women empowerment are closely related to nutrition. Their integration is essential to keep nutritional problems at bay. These factors govern the availability and utilization of food at community level as well as at individual level. Availability of food is related to the factors which start from the production till its delivery at the individual level, while utilization depends not only on the availability of food but also on correcting or maintaining the nutrition related parameters at the individual level. The entire above said processes are determined and modified by the socio-political realities existing in our country. In our journey to realize the ‘Right to food’ and to achieve food security, it is necessary to study the complex interactions of all those factors and devise a viable policy document. The policy hence should influence and modify all micro processes related to nutrition and in turn bring about a positive change in the nutrition pattern of the country.

National Nutrition Policy adopted by the Government of India in 1993, aimed mainly at the initiatives to combat the problem of under nutrition across the nation. The focus of the policy is found to be narrow in the context of existing and emerging nutritional challenges of the nation in the dawn of the new millennium. The evident nutritional transition including the huge burden of over nutrition, calls for a policy which addresses all dimensions of nutrition related issues. Unhealthy food and diet habits are rampant right from childhood and it is wise to believe that the burden is on the rise. Added to this is the increasing menace of tobacco and alcohol usage by the youth of the country. Unhealthy children become unhealthy adolescents and morbid adults. They are more prone to develop lifestyle diseases. As stated earlier, nutrition related life style diseases (heart diseases and stroke) are posing a huge burden on the current health system of our nation. For an Asian-Indian ethnicity, cardio-vascular events are found to occur a decade earlier as compared other populations.

The problem we are facing is huge which affect millions of lives in the present and in the future. This can only be tackled politically with a clear vision and far-sighted interventions. In a federal policy like ours, the operational edge of governmental interventions commence at the state level. State policies should follow national policies so that policy prescriptions can be effectively implemented at community level. As nutrition is a high impact factor on the health of the future generation, planning should focus on the accessibility, availability and consumption pattern of healthy food for the next generation. The policy should visualize future mothers - the girl child and adolescent girl - as special candidates in an effort to reduce the burden of Low Birth Weight and to build a healthy...

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community in the future. The aim of this paper is to enlist the existing and emerging nutritional problems in India and to throw light on the broad areas where interventions are required to prevent and manage these problems.

**Nutrition related challenges and its distribution**

Nutrition related challenges faced by the nation can be grouped under six major headings:

1. Issues related to food production and utilization
2. Under nutrition
3. Over nutrition
4. Micronutrient deficiencies
5. Nutritional factors that contribute or aggravate chronic morbidities
6. Other nutrition related challenges

**1. Issues Related to Food Production and Utilization**

It is important to analyze the pattern of food production and utilization in order to understand the nutrition related problems described below. Protecting the food materials from insects and increasing their shelf life became necessary as the production of food crops increased after political independence. It was not merely due to increase in farm land but also because of the advent of newer technologies and fertilizers. But soon a large proportion of farmers realized that cultivating food crops was not a profitable business. So the land began to be used for cultivating other crops and the money generated from this was used to buy food grains. This pattern of change is evident in states like Kerala where a very small proportion of the required food grains are cultivated inside the state. Paddy fields, water sheds and coastal areas are now being used for construction, tourism and infrastructure development. The same situation exists in other states as well. It is a sad reality that agriculture was neglected in the name of economic development after the periods of green revolution.

At the same time the changes in the purchasing power of people has brought in some negative behaviors as well. Food has become a commodity that could be purchased at a basic amenity that should be produced. Changes in food habits and the free availability of processed food act as strong distal determinants of cardio vascular disease susceptibility of the people. At the same time the utilization pattern of food is dependent on its accessibility and availability, and these factors vary according to the social and cultural differences across the country.

A large portion of people especially the poor and less empowered are not receiving the quantity and quality of food necessary for their physical growth and maintenance. The state has devised various plans and projects to nourish this segment of the population. However these plans are based on subsidies and provisions under ‘green revolution’ activities and not aimed at increasing the food production. Even in situations of increased food production, lack of proper storage facilities cause food grains to rot by the tons. The equity issues in distribution of food have been neglected in the post-liberalisation era which in turn contributed to the huge and increasing burden of malnutrition in our nation. It is said that the recent food security initiatives of the nation may not be effective in feeding the nation in a sustained manner at grass root level.

**2. Under Nutrition**

The absolute and relative burden of poverty resulting in chronic and persistent malnutrition is one of the most evident distal determinants of ill-health and under-development throughout the nation. Undernutrition is widely distributed among large sections of the poor, particularly amongst women and children. Under nutrition is a condition resulting from inadequate intake of food or more essential nutrients resulting in deterioration of physical growth and health. The condition of under nutrition reduces work capacity and productivity among adults and enhances mortality and morbidity among children. Such reduced productivity translates into reduced earning capacity, further aggravating poverty, and the vicious cycle goes on. Pregnant and lactating women, under five children, adolescents - particularly girls just before and during their pubertal growth spurt - , nutritionally disadvantaged ethnic groups like tribals, fishermen are the most vulnerable groups. A significant proportion of elderly are suffering from hunger because of seclusion from family and society. Evidences say that the poverty in childhood takes its toll on the health in adult life in the form of non-communicable diseases like cardiovascular diseases and stroke. Recent evidence suggests that childhood under nutrition is one of the reasons for cardio-vascular diseases in adult life.

Projections based on the figures related to nutritional status says that India will be attaining the nutrition related Millennium Development Goals (MDG), only in 2043. Other rapidly growing economies of the world such as China and Brazil have already achieved their targets. India has a well established network of ICDS throughout the country. With committed and coordinated efforts ICDS can play an important role in not only improving the nutritional status of children but also in their overall development. However the utilisation of ICDS and its full functions is unsatisfactory. Recent evaluations of the initiatives aimed at poverty alleviation in India also projects a bleak picture.

**3. Over Nutrition**

While the focus of attention in the field of nutrition in our country continues to be on chronic energy deficiency, the problem of overweight, obesity and related morbidities...
are rapidly emerging. Together with high levels of under-nutrition, it produces a dual burden of nutritional disorders in the country. In some of the Indian states, the percentage of women who are overweight or obese is greater than the percentage of underweight. Overweight, obesity and related morbidities are considered as a problem of middle age but the trends suggest that more adolescents and children are likely to get affected in the near future. The problem is more pronounced among women mostly because of their lower opportunities for physical exercise and partly because of hormonal imbalances and intake of relatively higher amounts of energy rich food compared to protective food. Apart from the increasing burden of morbidity and mortality due to cardio-vascular diseases, the nutritional transition often predisposes women to other slow epidemics like breast cancer. Affluent and urban population are more at risk, and the magnitude of the problem is increasing with increasing economic prosperity and rapid urbanisation in the country. These newer nutritional problems correlate with the lack of work time physical activities and affect people having ‘Desk Jobs’, for example in the information technology sector which is the most common choice among middle class Indian youth. Morbidities related to over-nutrition is on the rise even among children who eat predominantly energy rich, salty and high fat packaged and processed food.

4. Micro nutrient (MN) Deficiency

Micronutrient deficiency has a complex aetiology. Besides poor diet (due to poverty, ignorance, low agricultural productivity, and cultural factors); inadequate access to safe drinking water, clean disease-free environment, and inaccessibility to healthcare also contribute to Micronutrient deficiency. Childhood infections also result in loss of appetite, impaired absorption and assimilation of micronutrients. Apart from human suffering due to morbidity and mortality, malnutrition in general and Micronutrient deficiencies in particular have a high economic cost. Cereal based diet deficient in micronutrients and poor intake of protective food items like green leafy vegetables (GLV) and fruits due to financial constraints makes an average Indian, highly susceptible to Micronutrient deficiency. Nutritional anaemia is rampant in the nation cutting across all geographic and socio-economic classes, and is especially common among women and adolescents. But the state of marginalised communities in the case of Micronutrient deficiency is of concern. It imparts a huge burden on the state by reducing the productivity of the people and by increasing the morbidity and mortality among vulnerable sections of the population. Apart from dietary deficiency, factors like helminthic infections, presence of inhibitors of iron absorption in the diet and uncontrolled maternity also add to the magnitude of the problem. Most of the national initiatives give thrust to distribution of iron-folic acid tablets to tackle this public health concern. But it is crucial to intervene at the distal determinants of nutritional anaemia like the accessibility and availability of iron rich food materials.

An adequate Iodine level in the food is critical to maintaining physical, mental and reproductive health. The reduction in the prevalence of Iodine deficiency in some part of the nation can be attributed to the increased inclusion sea fish in the menu of the people. The fortification of common salt with iodine resulted in the reduction of prevalence and incidence of this Micronutrient deficiency in the nation. There are reports that the iodine levels in edible salt varies from state to state and the iodine deficiency control programme in India is often questioned because of its focus on iodine supplementation rather than food. However the philosophy of health promotion to help the people to consume more healthy food rich in micronutrients is definitely more cost effective and sustainable, as we experience shortage of multiple macro and micro nutrients among people.

Data including that from National Institute of Nutrition (NIN) suggests that both clinical and subclinical forms of vitamin A deficiency (low Serum levels of Vitamin A) are also rampant in the country. In addition to ocular manifestations, vitamin A deficiency has been shown to cause growth retardation, decreased resistance to infections, and even death. The increased susceptibility of marginalised groups to Vitamin A deficiency has also been documented. Even the fluctuations in climatic and social environment can make people, especially children more prone to this micronutrient deficiency. At the same time the efficacy of the national programme providing protective Vitamin A doses to children is undermined by its poor coverage and social resistance.

Though there is marked dietary, biochemical and clinical evidence of B complex deficiency, it has not received adequate attention because its deficiency is neither a killer nor a crippler. Impaired psychomotor performances in school children and adults have been reported to be associated with B complex deficiencies. There are a few reports from India which have documented the extent of B complex deficiencies other than that of Folic acid and Vitamin B12. Folic acid has got very important functional role in the brain growth of developing foetus. Folic acid deficiency has also been implicated in congenital malformations (neural tube defects), and therefore its supplementation in early pregnancy or even pre-pregnant state has been shown to prevent it. Earlier reports showed that, along with Iron and Folic acid deficiency, Vitamin B12 deficiency is also very severe in the community and the latter is worse than in any other communities compared. But Vitamin B12 supplementation is omitted from the national programme. There are reports that this can even increase the nutritional disparity at individual level as these vitamins are metabolically linked.
We have a significant number and proportion of population at risk of deficiencies due to other vitamins and minerals too. As in case of Vitamin A deficiency, a seasonal trend has been noticed in case of other vitamins, which calls for a policy to weave a safety net for our populations. The relationship between micronutrient deficiencies and other diseases should be revisited in the context of the emerging problems of Cardio-vascular and other non communicable diseases. Accumulating evidence of a link between vitamin D levels and vascular diseases is a good example. So it is important to know how much of the burden of CVD can be attributed to micronutrient deficiency in India.

5. Nutritional Factors that Contribute or Aggravate Chronic Morbidities

Over the past few decades in the USA, the prevalence of obesity has doubled among adults, and quadrupled among teenagers. A similar pattern is emerging in our part of the world as well, where coronary artery disease (CAD) and diabetes have reached epidemic proportions. The rates of CAD have declined in the US, while it has increased in India over the past 30 years. High body fat composition (which is genetically determined) is likely to make us more prone for nutrition related chronic morbidities and cardio-vascular events. There are studies that sarcopenic adiposity is one of the reasons for high incidence of cardiovascular events and diabetes even in Indians with low body mass index.

A significant proportion of our population consumes more than one third of its energy in the form of fat, both invisible and visible and much of these are_Saturated Fatty Acids (SAFA). CAD mortality worldwide is explained by both the absolute consumption of SAFA as well as its relative consumption to Mono Unsaturated Fatty Acids (MUFA) and Poly Unsaturated Fatty Acids (PUFA). SAFA raises the serum TC levels thrice as much as MUFA and PUFA lower serum TC. Coconut and palm oils widely used in India are high in SAFA content and this explains why the consumption of these oils raises the LDL level in a fashion similar to that of butter.

Though seen in smaller quantities, the trans isomers of unsaturated fatty acids, trans fatty acids (TRAFA) are the most potent atherogenic (material that has a potential to block blood vessels) chemical ever known. TRAFA is formed during the partial hydrogenation of vegetable oils. It is largely produced in our food during processing by the food industries and even in our kitchen during deep-frying. Food products in the west currently have a low TRAFA content due to recent manufacturing changes. But we do not have enough expertise and facilities to estimate the TRAFA content in our diet. As of today, we are not aware of any industrial manufacturing changes aimed at lowering the TRAFA content in Indian foods, as done in western countries.

There are 2 series of PUFA that are deemed essential, omega-6 or n-6 PUFA and omega-3 or n-3 PUFA. Sea fish is the richest source of protective n-3 PUFA and populations that consume large amounts of marine foods have a low prevalence of CVD deaths. Educational activities should be strengthened so that the consumption of sea foods is improved in Indian diet. Several large studies have shown that one or two fish meals per week were associated with a 30%–50% reduction in sudden death.

6. Other Nutrition Related Problems

There are several other issues related to nutrition. The raw vegetables and fruits available to the public are heavily contaminated by chemicals including pesticides. Food adulteration is rampant and often the agents added are injurious to health. One of the important qualities of a typical Indian diet is that most often it contains more unrefined materials like complex carbohydrates and fibre. This pattern might have contributed to the disease epidemiology, as shown by the less common incidence of malignancy especially that of gastro intestinal tract in India. We have to preserve our positive nutritional behaviours against the nutritional transition happening in the country.

Policy Approaches

Here we try to describe under the following heads, the broad policy approaches and the specific action points inside each of the above domains; which can be focussed on by the planners and policy makers in the field of nutrition, social welfare and health. These are:

I. Life cycle approach in nutrition

II. Integrated approach to nutrition

III. Address nutritional security (Safety net approach)

IV. Community approach to nutrition

V. Promote evidence based practices related to nutrition

VI. Effective utilisation of available food delivery systems

I. Life Cycle Approach in Nutrition

Nutritional needs of all sections of population beginning from the foetus in-utero to the elderly should be addressed. The spectrum of care extends from providing folic acid for the neural tube development of a growing foetus to making available calcium and Vitamin D for an elderly woman to keep her protected from the harms of osteoporosis.

Policy Action Points

1. Promotion of breast feeding among all sections of the population irrespective of socioeconomic status.

2. Ensuring sustainability in childhood nutrition by strengthening nutritional programmes like ICDS and mid-day meal programmes.
3. Enhancing the family pot feeding method by adding healthy food items.
4. Address the additional nutritional needs of pre-pubertal and pubertal girls and boys.
5. Educating adults to maintain healthy food habits for the entire family by
   i. Reducing salt
   ii. Reducing sugars
   iii. Reducing Trans fats
   iv. Avoiding alcohol and other harmful beverages.
   v. Promoting fruits, vegetables, cereals and pulses in diet
   vi. Promoting steamed food in the place of fried food
6. Promotion of physical activities and exercise among all age groups of the population to ensure fitness and offset the effects of overnutrition.
7. Creation of a special nutritional strategy for elderly.
8. Creating new standards in safe food handling practices and ensuring that legislations on food safety are strictly enforced.

II. Integrated Approach to Nutrition

The activities of sectors linked to nutrition, like agriculture, water supply, medical care, social welfare, education, labour, rural development, local governance and animal husbandry should be closely integrated. Their plans and projects should be formulated with the short term and long term nutritional and health consequences of the population in mind.

Policy Action Points

1. Establishment of Apex National level nutrition council and similar mechanisms at the state levels to plan and monitor nutrition related programming.
2. Improve penetrability of the system such that information and practices reaches the grass root levels through local self-governments, self-help groups, NGOs and citizens’ associations.
3. Inclusion of healthy food habits and healthy lifestyles in the education curriculum from primary classes onwards.
4. Regulation of trans fats and salt content in packaged food items like biscuits, chocolates, chips and other fried items and enactment of labelling norms.
5. Increased Taxation of unhealthy food items.
6. Decentralisation of food safety activities.
7. Interventions on the effective utilisation of unused lands and paddy fields for food production, by incentivising agriculture.
8. Regulation over junk food outlets and registration such establishments under local self-governments.
9. Special emphasis on the effective implementation of micronutrient malnutrition prevention programme.
10. Intervention for the prevention of worm/parasitic infestations.

III. Safety Net Approach

The term ‘Safety Net approach’ is conventionally used to describe the strategies to prevent malnutrition among infants at the time of nutritional challenges at individual level. But here the term refers to the community actions which protect an individual or a group of individuals from falling into nutritional insufficiencies. The individuals should be protected from under nutrition at the times of intra-uterine life, breastfeeding, weaning, infections, pre-pubertal growth spurt and any other focal points that might alter nutritional needs.

At the community level, marginalised people, women and destitutes should be given special packages to ensure the fulfilment of their nutritional needs. Feeding practices of tribal communities should be studied and nutritional deficiencies should be recognised and addressed. People should be protected in terms of nutritional requirements during seasonal fluctuations (eg: Feeding of fisherman during monsoon) and natural calamities. Micro nutrient deficiencies among vulnerable populations like tribals should be estimated and provided for. Nutritional needs of the elderly requires special attention.

Policy Action Points

1. Utilising the services of Anganwadi and ASHA workers to teach mothers monitoring of growth and development. Simple growth monitoring tools like TDSC (Trivandrum Developmental Screening Chart) may be provided to mothers.
2. Nutritionist’s services to be made available at all hospitals which cater to paediatric patients.
3. Nutrition cells to be established at all schools.
4. Additional resources should be provided to local bodies to promote healthy nutrition to the general public and special needs groups.
5. Improvement of public distribution system (PDS) of food grains.
6. Interventions in food production, by utilising the available land effectively and profitably.
7. Enhanced production of millets and pulses.
8. Interventions for improving food storage facilities and supply chain.
9. Ensuring supply of safe water at eateries.
IV. Community Approach to Nutrition

As food is something very close to the lives of people, it often reflects their living conditions and life style. Any intervention in improving the nutritional status of people should be owned and sustained by them. The programmes should be run under the ownership of LSGs and Gramasabhas at the grass root level.

Policy Action Points

Creating nutritional awareness among people through concerted community action.

Production and consumption of healthy food locally and sustaining the process by creating local demands.

V. Evidence Based Decision Making

Any decision on nutrition should be based on scientific evidence. Efforts should be made to generate evidence in areas where debates exist among the experts.

Policy Action Points

1. Nutritional research including genetic studies should be supported and sufficiently funded to bring new insights into matters related to nutrition.

2. Research on feeding pattern of people, its transition and food analysis should be done periodically.

3. Operational/translational research should be promoted to demonstrate how the knowledge can be utilised to solve nutrition related hurdles in the community.

4. Health Impact Assessment studies should be conducted on the usage of specific food substances like coconut oil.

5. Research to study the extent, distribution, determinants, trends and possible interventions on the nutrition related challenges in the country.


7. Medical surveillance system to detect early signs of malnutrition in the community.

8. Decision on Fortification of essential foods: Fortification of essential foods should be based on an assessment of the micronutrient deficiency in our population and consumption pattern of food materials. The dosage and preservation of food additives should be determined and the distribution system should also be sought out. Vitamin A and Vitamin D are the ideal candidates apart from iodine which could be included in National programmes.

9. The scope of newer initiatives like genetically modified foods could be explored to answer the problems of Micronutrient deficiency among special groups.

VI. Effective Usage of Existing Food Delivery Infrastructure

Policy Action Points

1. Inclusion of seasonal fruits and vegetables in mid day meal and other supplementary feeding systems like Integrated Child Development Scheme (ICDS).

2. Application of the ICDS system to tackle the new nutrition related challenges like over nutrition and unhealthy feeding practices.

3. Whole grains, whole grain flours and other health friendly food materials could be distributed through PDS at subsidised rates.

4. Monitoring of Nutrition Programmes: All nutritional programmes including ICDS, Mid day meal scheme, IFA supplementation by Health department, Vitamin A prophylaxis programme and any other nutritional programmes should be monitored by the local body with the help of a uniform check list and monitoring indicators across the states and the country as a whole.

Conclusion

India has been in the state of Nutritional transition for the last few decades. In states like Kerala this transition is in a far advanced stage and has been taking its stake on the health of the people. The rest of the country will go through these health effects sooner or later. The current National Nutrition Policy fails to address the newer issues that have crept into the field of nutrition. This document has tried to enlist some of these issues and make recommendations based on evidence to tackle these problems. A detailed action plan that includes targets and indicators can be developed based on this document.

End Note

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