

## Indian Pediatrics – Environmental Health Project *Special Article Series*

### Nutritional Problems in Urban Slum Children

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*Nutritional problems like protein energy malnutrition (PEM), anemia and vitamin A deficiency continue to plague a large proportion of Indian children. The diets and nutritional status of urban slum children in India is far away from being satisfactory. The nutritional status of slum children is worst amongst all urban groups and is even poorer than the rural average. Urban migration has not provided them salvation from poverty and undernutrition. Another distressing feature is the lack of any significant improvement over the years in this population. Most common causes of malnutrition include faulty infant feeding practices, impaired utilization of nutrients due to infections and parasites, inadequate food and health security, poor environmental conditions and lack of proper child care practices. High prevalence of malnutrition among young children is also due to lack of awareness and knowledge regarding their food requirements and absence of a responsible adult care giver. With increasing urban migration in the years ahead, the problem of malnutrition in urban slums will also acquire increasing dimension unless special efforts are initiated to mitigate the health and nutrition problems of the urban poor. Improving nutritional status of urban poor requires a more direct, more focused, and more integrated strategy.*

**Key words:** *Infant feeding, Nutrition, Urban slums.*

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The urban population is rapidly expanding because of large-scale migration to cities for a possible better life. The cities and towns are also expanding but the sheer volume of people compromises the ability of the city to meet their basic needs. A large proportion of this migrating population ends up residing in slums in inhuman conditions. As a result, urban poverty and hunger are increasing in many developing countries.

Lack of basic amenities like safe drinking water, proper housing, drainage and excreta disposal make this population vulnerable to infections which further compromises the nutrition of those living in the slums. It is projected that more than half of the Indian population will live in urban areas by 2020 and nearly one third of this urban population will be of slum dwellers(1,2). The ongoing process of rapid urbanization has deleterious repercussions on health and nutrition especially for children. Malnutrition in young children has long-term negative effects on physical and cognitive development. Addressing nutritional problems of urban poor is therefore must for overall development of the country.

#### **Magnitude of the Problem**

The major nutritional problems are protein energy malnutrition (PEM), vitamin A deficiency (VAD), iron deficiency anemia (IDA) and iodine deficiency disorders (IDD). This chapter focuses on the current scenario in relation to the nutritional status of children in urban slums in India.

***Protein Energy Malnutrition (PEM)***

PEM is the most widely prevalent form of malnutrition among children. Severe PEM, often associated with infection contributes to high child mortality in underprivileged communities. Further, early malnutrition can have lasting effects on growth and functional status.

***Nutritional Anthropometry***

Malnutrition continues to plague large proportion of children in India. In the second National Family Health Survey (NFHS-2) report, almost half of children under three years of age (47%) were underweight, and a similar percentage (46%) was stunted(1). The proportion of children who were severely undernourished was also notable – 18% according to weight for age and 23% according to height for age. Wasting was less prevalent affecting 16% of children under three years of age.

Countrywide data for the prevalence of malnutrition in urban slums is lacking. In the NFHS-2 report, undernutrition was higher in rural areas than in urban areas. The figures for underweight, stunting and wasting in urban areas were 38%, 36% and 13%(1). However, these results can not be extrapolated to the urban slums as the survey seems to cater mainly to the urban middle-class. This is evident from the housing characteristics of the sampled urban population as 81% of urban population in the survey had facility of toilets and 88% were living in houses having <4 persons per room(1). This is not what the status is in urban slums. Official urban health statistics hide the appalling health and nutrition conditions of urban slum dwellers, most of whom are not 'official' residents of the cities, and therefore, do not get included in urban statistics. Data collected by the National Nutrition Monitoring Bureau (NNMB), pertaining to five population groups in 15

major cities of the country revealed slum population to be the worst off in dietary and nutritional profiles with only 13% of children having normal weight for age(3) (Gomez classification). The prevalence of severe malnutrition was also maximum in urban slums.

Most data on prevalence of malnutrition in urban slums is available from individual studies, many of which are community based. *Table 1* presents the summary of relevant studies published in last two decades(4-15). A valid comparison of the studies is not possible because of disparity in regard to the age of children studied, the method of classification of malnutrition (Gomez, IAP, WHO *etc.*), "standards" used (Harvard or NCHS) and the sampling methods. Overall, the prevalence of underweight among under-5 children was 52-68% with the exception of a study from Delhi reporting a prevalence of 82%(14). The National Institute of Nutrition's Jabalpur and Calcutta study(15) reported a higher prevalence (94% and 92% respectively) as Gomez classification was used. If Gomez's Grade I of malnutrition (80-90% of expected weight for age) is excluded, the prevalence from these studies is also comparable to the other studies. It is evident that the prevalence of malnutrition in urban slums is much higher than national average for rural and urban areas. The prevalence of wasting and stunting available from relevant studies is also much higher in comparison to NFHS data for rural or urban population(1). Some of these studies also reported a significantly higher prevalence of malnutrition in urban slum children in comparison to urban or rural population(7,15). Studies from other Asian countries also indicate similar trend. Limited data from infants(5) and adolescent girls(6) also indicate a similar picture.

In the past few decades, there has been a

**TABLE I**—Prevalence of Malnutrition in Urban Slum Children

City/ Year (Ref.)	Profile of children included	Classification used	Prevalence of malnutrition	Key findings
Vadodara 2002(4)	3157 underfive	IAP	63% Grade I- 41%; Grade II- 20%; ≥ Grade III- 2%	Moderate and severe malnutrition higher in elder children and girls. Nutritional status of children started worsening in the 2nd year of life.
Delhi, 2001(5)	150 infants (6-12 months)	IAP	26% Grade I- 11%; Grade II- 9%; ≥ Grade III- 6%	Late introduction of semi solids, dilution of milk and lack of exclusive breastfeeding in first 6 months identified as possible etiological factors.
Varanasi, 2001(6)	70 adolescent girls (13 to 18 years)	WHO	Chronic energy deficiency -51% Stunting- 10%	No significant association of income, type of family, working and literacy status with nutritional status.
Chandigarh, 1999(7)	1400 preschool children	IAP	67%	Prevalence in slum population significantly higher than rural (45%) or urban (21%) population.
Delhi 1997(8)	630 children (< 6 years)	WHO	58%—Underweight 53%—Stunted 23%—Wasted	Underweight, wasted and stunted children had significantly lower energy and protein intakes than normal children.
Lucknow 1997(9)	1061 children (1.5-3.5 years)	WHO	68%—Underweight 63%—Stunted 26%—Wasted	No association between weight or height and intestinal parasite positivity.
Srinagar 1997(10)	584 preschool children	IAP	60% Grade I—33% Grade II—21% ≥ Grade III—6%	Higher prevalence in females and with illiterate and poor parents.
Calcutta 1994(11)	1280 under five	IAP	51% Grade I—28% Grade II—17% ≥ Grade III—7%	Malnutrition more in older and female children.
Bhopal, 1992(12)	1000 children	IAP	63% Grade I—41% Grade II—15% ≥ Grade III- 2%	Positive association with birth order, family size and illiteracy among fathers. Girls more likely to have severe grades.
Delhi 1990(13)	88 children (0-5 years)	IAP	58% Grade I—41% Grade II—15% ≥ Grade III—2%	Malnutrition more likely to be in infants, girls, those with illiterate parents and higher birth order.

**TABLE I (contd.)—Prevalence of Malnutrition in Urban Slum Children**

City/ Year (Ref.)	Profile of children included	Classification used	Prevalence of malnutrition	Key findings
Delhi 1989( 14)	486 preschool children	IAP	82% Grade I–32% Grade II–44% ≥ Grade III–6%	Age, sex and education had a significant association with PEM.
Calcutta 1989(15)	601 under five	Gomez and WHO	92 % Grade I–40% Grade II–44% Grade III–9 % Stunting–81% Wasting–9%	Severe forms of malnutrition more common in urban slum population than rural and tribal groups .
Jabalpur 1989(15)	870 under five	Gomez and WHO	94% Grade I–28% Grade II–45% Grade III–21% Stunting–84% Wasting- 29%	Severe forms of malnutrition more common in urban slum population than rural and tribal groups.

significant decline in protein energy malnutrition in the country but it is still unacceptably high. The proportion of children under three years of age who were underweight decreased from 53% in NFHS-1 to 47% in NFHS-2 and the proportion of severely underweight decreased from 20% to 18%(16). Similarly, prevalence of stunting and severe stunting decreased from 52% and 29% in NFHS-1 to 45% and 23% in NFHS-2. There is scarcity of published data reporting the trends in prevalence of malnutrition in urban slums. Gross comparison of available studies (*Table I*) fails to demonstrate a positive trend. In a longitudinal study on 845 under-five slum children in Pune, 40-50% children below 2 years of age further deteriorated their nutritional status during the study period of two years, while most children above 2 year age remained in their same lower grade of nutritional status(17).

### *Dietary Intake*

Feeding practices play a pivotal role in determining the nutritional status, morbidity and survival of children, particularly in the neonatal period and infancy. Proper infant feeding, starting from the time of birth is important for the physical and mental development of the child. The timing and type of supplementary foods introduced in an infant's diet also have significant effects on the child's nutritional status.

### *Infant feeding practices*

Recommendations state that breastfeeding should begin immediately after childbirth and infants should be exclusively breastfed for the first six months of life. After six months, adequate and appropriate complementary foods should be added to the infant's diet in order to provide sufficient nutrients for

optimal growth(18). It is recommended that breastfeeding should continue along with complementary foods, through the second year of life or beyond. It is further recommended that a feeding bottle with a nipple should not be used at any age, for reasons related mainly to sanitation and the prevention of infections.

Although breastfeeding is nearly universal in India, very few children begin breastfeeding immediately after birth. Countrywide data from NFHS-2 documented that only 19% and 45% of women in urban areas started breastfeeding in the first hour and first day of childbirth, respectively. Fifty-five percent of children under four months of age were exclusively breastfed and only 34% of children age 6-9 months receive the recommended combination of breast milk and solid or mushy food. The median duration of exclusive breastfeeding was 0.9 months in urban areas as compared to 2.2 months in rural areas(1).

Unlike in the rural setting, women in urban slums work outside their homes; in factories, shops, or as unskilled labourers and domestic servants. These categories are not protected by labour laws regarding maternity or sick leave, hours of work, *etc.* This occupation pattern of working women in urban slums has a propensity to erode breastfeeding and child-rearing practices(2). Infants are often taken care of by the older siblings. Studies by the Nutrition Foundation of India (NFI) in urban slums of three major cities (Mumbai, Calcutta and Chennai) nearly two decades ago revealed serious erosion of breastfeeding practices and unhygienic and improper use of commercial baby foods for infant feeding(19). Thereafter, data from urban slums and resettlement colonies repeatedly documented that although the breastfeeding was very common, exclusive breastfeeding was practiced only in

30-40% of infants younger than 4 months of age(5,20-24). The majority of children are first put to breast on the 3rd day after birth and colostrum was discarded in upto 90% of children of the urban slums(25). Use of prelacteal feeds is almost universal. Use of feeding bottles, animal milk and commercial milk formulae for feeding the young infant was very common. When animal milk is given, most added plain water to the animal milk in ratios upto 3:1(26). Those giving their infants formula milk also diluted it staggeringly excessively. Of the children using bottles: most had only 1 bottle and 1 nipple which is seldom cleaned properly (26).

Introduction of complementary foods is markedly delayed and the foods lack the consistency, energy density and fed in inadequate amounts and in unhygienic ways. In most studies, almost one third of the urban slum children were not receiving the solid mushy foods even by the age of one year. In a study from South Delhi resettlement colony(26), the average age for introduction of semisolid foods was 10.3 months and 34% of the children were not weaned until after they reached their 1st birthday. The children are at substantial risk of malnutrition because of the tendency to introduce semisolid foods later than the recommended age.

#### *General Dietary Intake*

Most of the countrywide data on this aspect is available from surveys which cater predominantly to rural areas. The median intakes of food and nutrients, in general, were below the recommended dietary intakes (RDI). This is expected considering that the main source of calories and of protein in the habitual diets of the poor is nearly the same - consisting of a single staple cereal with insignificant amount of fat (calorie-rich) and

protein-rich food like pulses or meat. Wide variations in nutrient intake were apparent with the region and socio-economic status. The urban poor had the least intake followed by rural and urban better off population, respectively(16). A small scale study from National Institute of Nutrition showed that the dietary intake of pre-school children in urban slums was no better than those of rural pre-schoolers. The study showed that 81% of rural children and 92% of slum dwellers in Hyderabad suffered from current long duration malnutrition. NNMB study from 15 cities all over India documented a lower consumption of energy and nutrients in urban slums which was comparable to rural landless poor(28). The intake by children was not separately assessed by this survey. However, the discrimination against pre-schoolers in intra-familial food distribution pattern as documented by the rural surveys gives the idea of the grave status of dietary intake of urban slum children. Recent data from an urban slum ICDS project in Delhi indicated that the intake of cereals, pulses, roots, green leafy vegetables (GLVs), other vegetables, fruits, sugar and fats was grossly inadequate, meeting only 43%, 33%, 48%, 13%, 39% 28%, 56% and 40%, respectively of the recommendations of balanced diet of children(29). The deficit in the case of GLVs was as high as 87%.

The consumption of ready-to-eat 'convenience' foods is increasing among slum dwellers as both the man and the woman of the household have to observe rigorous working hours(1). At the price in which such foods have to be sold to the relatively poor, there is the danger that they may be of poor quality from the nutritional and hygienic points of view. Inexpensive imitations of fashionable non-traditional 'fast foods' could pose problem of contamination in such cheap fast foods. Unfortunately, present arrangements

for ensuring food hygiene and wholesomeness of foods in public catering establishments and in retail shops selling food ingredients for the poor are woefully inadequate.

In conclusion, malnutrition is a significant problem in urban poor children and there does not appear to be a positive nutritional transition in this population.

#### *Iron Deficiency Anemia*

Iron deficiency anemia (IDA) is the most widespread micronutrient deficiency in the world affecting more than a billion people. Anemia is a serious concern for young children, because it can result in impaired cognitive performance, behavioral and motor development, coordination, language development and scholastic achievement, as well as association with increased morbidity from infectious diseases(30-32).

In NFHS-2, all over the country, about 70.8% of children up to the age of three in urban areas and 75.3% in rural areas had anemia and in a considerable proportion the anemia was of a moderate to severe degree(1). Data from urban slums is available only from individual studies. A study from urban slums of Meerut, Uttar Pradesh reported a prevalence of 60% with 24% having severe anemia (Hb <7.0 g/dL)(33). In a recent population-based study from an urban slum Integrated Child Development Services (ICDS) project in Delhi(29), the prevalence of anemia (using WHO cut-off values of Hb < 11.0 g/dL) among children, 9-36 months of age, was 64%. Of these 7.8% had severe anemia (Hb < 7.0 g/dL). On a sub-sample study, 88% children were estimated to be iron deficient, with serum ferritin concentration less than 12 micro g/L. In the same study, the mean iron intake from a subgroup of population was 45% of the RDA. Such high prevalence of iron deficiency in an ICDS

block in operation for 20 years is of major concern.

In another recent study from school children (5 to 10.9 yr old) of East Delhi slums, the prevalence of anemia was found to be 42%. Iron deficiency anemia was the commonest cause followed by vitamin B<sub>12</sub> and folic acid deficiency(34).

The causative factors identified from these small scale studies were poor dietary iron intake, delayed introduction and poor quality of weaning food and over-reliance on milk. Exclusive breastfeeding for at least 4 months was found to have a protective role. Limited data indicate that although the prevalence of intestinal parasitic infestation is high in urban slum children, it had limited or no role in the causation of anemia(29,35).

#### *Vitamin A Deficiency*

There is evidence of appreciable secular decline in clinical vitamin A deficiency in under five children in the country(36,37). Data from urban slum children is scant. In a cross-sectional study from 1000 slum children in Bhopal, the prevalence of clinical vitamin A deficiency was 23%(12). In a recent cross-sectional study in 1094 children (6 years) from 2 randomly selected urban slums of Nagpur, 9% of the children had xerophthalmia(38). However, the result of dietary intake assessment revealed that 91% study subjects consumed dietary vitamin A at below recommended levels. Conjunctival impression cytology studies from a subgroup of children suggested that 36% of those not having clinical vitamin A deficiency had evidence of subclinical vitamin A deficiency(39). This problem of subclinical vitamin A deficiency in apparently healthy subjects may assume significance as any intercurrent infection is likely to worsen the vitamin A status and result in known consequences of xerophthalmia.

Low intake of leafy vegetables, milk, egg, meat, fish, and fruits in poor children results in insufficient intake of dietary vitamin A. Evidence from Delhi urban slums(40) showed that nearly 73% of children in the age group 12-71 months consumed vitamin A rich foods less than three times per week – a level suggestive of public health problem, according to WHO criteria. The frequency of consumption of vitamin A rich food by the families was significantly higher during winters as compared to summers and rainy season and this could be due to comparatively high cost of dark green leafy vegetables in summers and rainy season.

#### *Iodine Deficiency Disorders (IDD)*

Iodine deficiency is one of the widespread nutritional deficiencies prevalent in the developing world and it continues to be significant public health problem. In India, not even a single state or Union Territory is free from the problem of iodine deficiency disorders(41). However, most of the data on this aspect is available from rural areas. Information from urban areas particularly urban slums is scarce. In Delhi, the goiter prevalence rate in school children declined from 55.2% in 1980 to 8.6% in 1996 after universal salt iodization(42,43). A recent study conducted on 6-12 years school going children from urban areas of Udaipur revealed a goiter prevalence of 8.4% and biochemical deficiency of nearly 8%(44).

The limited data available from urban slums documents a high prevalence of iodine deficiency. Recent report from pregnant women residing in Delhi slums revealed a IDD prevalence of 23%(45). In a report on 866 adolescents from Mumbai slums, the prevalence of goiter was 56% in both boys and girls with a visible goiter rate of 10-11%(46). The scholastic performance of the adolescents

with goiter was poor. Overall, IDD continues to be a nutritional problem for Indian children. However, the situation has definitely improved after universal salt iodization.

#### *Others*

Data from small scale individual studies indicate that the prevalence of various other nutritional deficiencies like vitamin B, vitamin C, vitamin D and micronutrients too is significant in urban slum populations. In the Pune study, clinical vitamin D deficiency was 10% to 20% in different seasons among preschool urban slum children(17). Lack of exposure to sunlight because of the poorly illuminated and closely spaced huts coupled with nutritional deprivation appears to be the main causative factor for rickets in urban slum children. Younger children (< 2 years) are particularly vulnerable as their mothers mostly work as housemaids or labourers during day time and the older siblings who are often given the responsibility of their care go outside for play leaving the younger ones confined in the house.

#### **Key Issues**

It is important to understand various etiological determinants of malnutrition in order to formulate meaningful strategies to combat the problem. It is generally recognized that the etiology of malnutrition is multifactorial and the proportional contribution for many such factors is unknown as many of the potential determinants are highly associated and their effects are thus mutually confounded.

Scant available data from urban slums suggest that the most common causes of malnutrition include poor maternal nutrition at conception and *in utero* undernutrition resulting in low birth weight, inadequate breastfeeding, delayed and insufficient complementary feeding, impaired utilization

of nutrients due to infections and parasites. Underlying these factors are various inadequacies with respect to household and community level access to food, health, environmental and caring resources. High prevalence of malnutrition among young children is also due to lack of awareness and knowledge regarding their food requirements and absence of a responsible adult care giver. Malnutrition is found among children in households that have no shortage of food. The period of 6 months to 2 years when the child is dependent on someone to feed him/her, has the maximum malnutrition. Also, there are many taboos and beliefs regarding foods suitable for a child without any scientific basis. Absence of household food security, inadequate preventive and curative health services, insufficient knowledge of proper care and discriminatory practices regarding food distribution add to the problem.

Broadly, the factors contributing to the poor nutritional status of the urban slum children could be divided into four categories (*Table II*).

#### **Addressing the Problem**

Our health system has so far accorded higher priority to rural population as rural populations far outnumber the urban and generally believed to have poorer access to health facilities. The urban sector however, now needs increasing attention and organization. It is obvious that the interventions to combat malnutrition should be specific for the targeted population and directed at the quantitatively important modifiable determinants of nutritional status. The quantitative importance of a factor is dependent on its individual effect, magnitude and prevalence; however, issues such as cost-effectiveness, cultural acceptability, and political feasibility are also important determinants of any intervention program.



**TABLE II**—*Causes of Poor Nutritional Status in Urban Slum Children.*

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1. Inadequate food intake
    - Improper infant feeding practices
      - Lack of exclusive breastfeeding
      - Late introduction of solid mushy foods
      - Dilution of milk
    - Poor caloric and nutritional content of food
    - Inequitable intra-familial distribution (Age and gender differences)
  2. Illness (Recurrent diarrheal and ARI morbidity)
    - Poor environmental and housing conditions.
    - Lack of hygiene and sanitation facilities
    - Inadequate access and utilization of health care
    - Poor food hygiene
  3. Deleterious caring practices
    - Absence of responsible adult caregiver.
    - Lack of knowledge regarding food requirements.
    - Traditional beliefs
    - Parental illiteracy
    - Poverty
  4. Service issues
    - Lack of reach and co-ordination of public sector services.
    - Inadequate training and supervision of service providers in nutritional counseling.
    - Missed opportunities for counseling.
    - Compromised efficiency of services and programs (Urban ICDS, PDS and others).
    - Inadequate targeting of the urban poor.
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*Promoting healthy infant feeding practices*

On the basis of currently available evidence, the promotion of optimal breastfeeding and infant feeding practices is clearly the need of the hour. It is thus important to provide optimal infant feeding services to mothers and other household family members by dedicated and skilled staff. Most interventions designed to improve optimal infant feeding practices involve the health care system. Even the interventions that are implemented outside the health care system are affected by what happens within the health

care system since infant feeding behaviors and mothers' perceptions of optimal feeding practices are influenced by their interactions with the health care system(47). Efforts in health facilities need to be linked with outreach efforts so that interventions effectively reach families and women. Counseling and education should be made integral part of any breastfeeding support program. It is true that these interventions require more organization, intensive training, highly motivated staff and generation of additional resources but simultaneously for an intervention to be effective, it is important

to know how well and by whom it is implemented rather than what specifically is implemented. To effectively reach the target population, the promotional strategies should preferably be community based. The concept of peer counseling (Local mothers who receive training in infant feeding counseling) is encouraging(48). Peer counseling has been shown to significantly improve breastfeeding and complementary feeding practices. In one such project from urban slum populations in Dhaka, Bangladesh, the prevalence of exclusive breastfeeding at 5 months was 70% for the intervention group and 6% for the control group (difference = 64%; 95% CI 57%-71%,  $p < 0.0001$ ). Mothers in the intervention group also initiated breastfeeding earlier than control mothers and were less likely to give prelacteal and postlacteal feeds(49).

Fortunately, most of the needed interventions can be delivered through existing services like urban ICDS and RCH. However, specific infant feeding components need to be integrated well into these services and their overall quality needs improvement. The ICDS operation may have to bestow at least as much attention on urban slums as on rural areas in the future, and it will be necessary to set up 'anganwadis' to provide services for women and children. Mobile creches will need to be set up in increasing numbers in order that infants and children of poor working women engaged in labour at construction sites or factories, can be breastfed. Initiatives to provide maternity leave for women in unorganized sector are worth considering.

#### *Nutritional Advice and Supplementation*

Lessons from the past indicate that intervention programs consisting in improved dietary practices and all-round socio-economic development rather than distribution of

synthetic vitamins and micronutrients can bring the improvement in nutritional status of population(50). The provision of nutrient bullets may appear simple and convenient but such pharmacological interventions have proved to be ineffective besides being expensive. Valid scientific justification and practical need however exists for the use of synthetic nutrients in some situations like iodine and iron/folic acid deficiencies.

The relative cost effectiveness of providing nutritional supplementation to all children in preference to nutritional advice should be scientifically explored in a true program setting and the results should determine the need for investing a large proportion of the available health budget for the former option on a routine basis. Limited evidence from urban slums of Bangladesh suggests that targeted food supplementation programs have only a limited impact in improving the nutritional status of children in comparison to the nutrition education alone(51).

The strategy for improvement of nutrition of young children should include a balanced mix of palliative and preventive measures. There is a clear need to identify and treat maternal and child undernutrition in urban slums. This requires improved training and supervision of service providers in nutritional counseling and growth monitoring. A promising community based step in this direction is '*Positive Deviance*' approach which is a methodology for finding out what families of well-nourished are practicing in the community(52). Using this as the basis for the nutrition education and demonstration, the caregivers and children come together for rehabilitation and education sessions to learn how to practice the behaviors that the positive deviants practice. This methodology is based on sustainable behavioral change to

rehabilitate malnourished children, sustaining health practices and preventing future malnutrition. However, this approach needs a lot of dedicated volunteer-power besides intensive training and supervision.

#### *Improving food security*

In the past food and nutrition security has been largely interpreted to mean adequate availability of food for the country as a whole. Food production alone cannot ensure food security. The availability of adequate food at the household level does not necessarily imply that the food is distributed to members according to their physiological needs. The worst sufferers in this regard are women of childbearing age and children. Faulty intrafamilial distribution of food and faulty choice of food contribute to a considerable part of under-nutrition in children and women in poor urban households. A significant proportion of low birth weight deliveries and infant malnutrition is directly attributable to lack of awareness of the special nutrient needs of pregnant women and children. In the background of poverty, nutrition education can make a significant contribution in this area.

Improving urban food and nutrition security requires a more direct, more focused, and more integrated strategy. To increase incomes of the poor, national governments must establish macroeconomic policies that encourage growth, and labor policies that do not discriminate against them. Improving women's educational levels and providing mothers with information they need on childcare are also important components of a strategy to improve nutrition. Mass media such as radio and television can be used for communication of nutrition related messages.

By imparting vocational skills, the income generating capacity of the urban poor can be

raised, thus ensuring their nutrition security. City governments should also pay attention to urban agriculture.

#### *Improving health*

Much of the malnutrition currently prevalent in children of urban slums is attributable to conditioned malnutrition, arising from infections like diarrhea, ARI and measles. The health of the urban poor is threatened as a result of living amid filthy conditions in flimsy, makeshift and overcrowded housing. Improvement of environmental sanitation, provision of safe drinking water and modification of personal hygiene and health seeking behaviors are critical to improve health and nutritional status of urban poor. Any nutritional program is likely to fail in the context of continuing poor sanitation, poor health care and poor personal hygiene. This issue has been dealt in detail in an earlier article in this series(53).

#### *Operational issues*

Addressing urban malnutrition will require a clear, comprehensive strategy that includes governments, nongovernmental and community organizations, and the urban poor themselves.

The above reviewed literature suggests that urban poor do not benefit much in terms of nutrition by migration from rural areas in spite of better employment opportunities and healthcare facilities likely to be available in urban areas. This suggests that these facilities do not reach the urban poor in any significant manner. In the current scenario, welfare measures such as Public Distribution System (PDS), ICDS and Slum improvement programs do not seem to have much beneficial effects on the nutritional status of slum children. ICDS being an integrated and multisectoral program has great potential in achieving the goals. Strengthening of ICDS

### Key Messages

- Nutritional status of urban slum children as assessed by nutritional anthropometry and vitamin/micronutrient deficiencies is far from being satisfactory and is worse than the urban or rural average.
- There does not appear to be a positive nutritional transition in children from urban slums.
- The major causes of childhood malnutrition in this population are inappropriate infant and young child feeding practices, infections, improper food security and suboptimal child care besides poor availability and inadequate utilization of health care services.
- Improving nutritional status of urban poor requires direct, focused and integrated strategies that are preferably community based and involve the behavior modification by education in addition to providing comprehensive preventive and curative health and nutritional services.

in terms of delivery, quality and coordination is required to make them more focused and tailored to the needs of urban slum dwellers. The emphasis should be on nutrition and health education activities for behavior change rather than mere distribution of food. Supplementary food should be viewed and used only as a magnet for providing other services under the ICDS scheme. Nutritional counseling and behavioral modification should be made a key component of the nutritional services rendered by ICDS program(54). The improved training and supervision of workers with concentration on intersectoral coordination will substantially improve the quality and impact. Involvement of community leaders, non governmental and community based organizations should be encouraged.

Any program for the improvement of health and nutritional status of urban poor can succeed only if the community itself is actively involved and is prepared to play a positive constructive role. It will be necessary to promote the growth of motivated community organizations in urban slums. Community should be mobilized and empowered to assume the leadership role and

the government's role should be limited to provide the resources to facilitate community action.

#### *The Ultimate Solution*

The slum improvement approaches should be preventive consisting of preventing the influx of rural migrants on the one hand and checking the indiscriminate expansion of existing urban areas in the surrounding agricultural regions on the other. In this context, proper implementation of anti-poverty income-generating programs all designed to check migration of the rural work force to urban areas, assumes great importance and should be coordinated with other on-going health/nutrition/economic and education programs primarily focused on urban slums and their neighborhoods. The action plans should be free from vote bank politics. Relocation in neighboring agricultural regions without providing infrastructural facilities as well as organizing demonstrations and 'dharnas' to prevent relocations of slums is not in the interest of the urban poor. It is desired that the political leaders direct their energies in more constructive manner and organize the services for upliftment of the urban poor.

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