CONTEMPORARY RESEARCH IN INDIA
ISSN 2231 - 2137

HUNGER IN FOOD ABUNDANT PUNJAB

Dr. Manisha Bhatia, *Assistant Professor (Home Science), Krishi Vigyan Kendra, Fatehgarh Sahib, Punjab Agricultural University*

Dr. Pawan Kumar Sharma, *Researcher, Population Research Centre, Centre for Research for Rural and Industrial Development (CRRID), Chandigarh*

Received: 01/03/2018 | **Edited: 06/03/2018** | **Accepted: 14/03/2018**

Abstract: *An attempt is made here to understand the state of affairs pertaining to hunger in the green revolution state of Punjab. The basic hypothesis is that such a State should be free from this malady. Indicators used for the purpose are incidence of low weight, thinness and stunting among children and body mass index and anaemia among adults. Secondary data from a variety of sources, including NFHS, DLHS, NSSO and from the records of different state government departments has been put in service. The state figured disappointingly on this count, defying the hypothesis postulated. The level of hunger was not uniform across different districts in the state. ShahidBhagat Singh district had highest hunger and Patiala the lowest. It is ironical that despite the fact that the green revolution has improved productivity, availability and access of food in the State there has not been a commensurate decrease in the levels of hunger; what to speak of other states where agriculture is yet to make headway. In the absence of no single causative factor found to be leading to higher hunger levels, a multipronged strategy needs to be adopted to prevent and ameliorate the condition of hunger.*

Keywords: *Global Hunger Index, NFHS, DLHS.*

Hunger is an uneasy sensation exhausting condition, caused by want of food. In simple terms, it is a cry for food and is used as also as a proxy for malnutrition and under-nutrition. Hunger basically is of two types -raw hunger and chronic or endemic hunger. Feeling the need to fill the belly every few hours is the raw hunger. The second type of hunger, chronic or endemic, is not felt in the form of hunger pangs rather it leads to some subtle deficiencies affecting the development of the human body. Deficiencies in micronutrients are often referred as hidden hunger. People who are chronically hungry are undernourished. (Gupta and Rohde, 2004). The Global Hunger Index (GHI) recognized the interconnection of these dimensions of hunger. To capture the multidimensional nature of hunger, GHI scores are based on four component indicators- undernourishment, child wasting among children under the age of five years, child stuntingand under five years child mortality.

According to Global Hunger Index (GHI) designed in 2017 by International Food Policy Research Institute (IFPRI), the level of hunger in the world has decreased by 27 percent from the 2000 level. The corresponding decline in India was by 18 per cent during the same period. At 31.4, India's 2017 GHI score is at the high end of the serious category. Between 2007 and 2017, India's ranking slid from 94 to 100. Even the smaller countries in the neighbourhood were better placed than India on hunger index. Nepal is ranked at 72, Myanmar at 77 and Sri Lanka at 84. About 15 per cent of the population falls in the category of being undernourished thereby indicating that 190 million persons equivalent to the population of the United Kingdom, Italy and France put together are undernourished. These figures portray a dismal picture of the country more so when viewed in the light of the fact that the country has made rapid strides in the production of various commodities such as wheat, rice, fruits and vegetables. In fact, India is the world's largest producer of milk and edible oils and second largest producer of wheat and sugar.

At the national level, the India State Hunger Index-2008, almost on similar lines of GHI,was calculated for 17 major states in the country. The index indicated continuing poor performance in reducing hunger in India. Punjab with a score of 13.6 was by far the best performing state while Madhya

Pradesh with a highest score of 30.9 was the poorest performing state on the count of hunger.Punjab, the most agriculturally developed states of India, is credited for ushering the green revolution in the country. The State was the first to translate agricultural technology into the green revolution, recording highest growth rate in food production. From a food deficit state Punjab has become a food surplus state. It is a matter of pride that Punjab is the largest single contributor to the central pool of rice and wheat. But the moot question arising out of such a situation is as to whether the increased food production has ensureda reduction in hunger in the state of Punjab?

Objectives: The paper endeavours to analyse the hunger conditions existing in the state of Punjab as well as across different districts. The paper looks into the food and non-food contributory factors manifested itself in an intake of essential calories, proteins, fats, and micronutrients, affecting the growth of individuals due to under-nutrition or over-nutrition in Punjab.

Methodology: The paper is based on the data collected through secondary sources, including surveys such as National Family Health Survey (NFHS), District Level Household Survey-4 (DLHS-4), Census of India and National Sample Survey Organisation (NSSO) and from the records of different departments of Punjab Government including Department of Planning and Economic and Statistical Organization. The relevant data have been put into service to assess the hunger problems at the state and district levels.

Nutritional Status

Children

Undernourished children do not grow as quickly as healthy children. They may develop slowly at mental level. On the other hand, healthy children grow up into healthy adults who are stronger, more productive and an asset for the nation. Three standard indices of physical growth, including height-for-age (stunting), weight-for-height (wasting) and weight-for-age (underweight) describe under-nutrition levels among children.

In Punjab, 26 per cent of children in 2015-16 were stunted indicating undernourishment for some time, 16 per cent were wasted indicating inadequate food intake or recent episodes of illness and 22 per cent were underweight having both chronic and under-nutrition (Table 1). The incidence of stunting was a bit higher among urban children (28 per cent) as compared to the children in rural areas (24 per cent).

The incidence of stunting remained almost at the same level of 45 per cent during 1992-93 and 1998-99 but declined thereafter to 26 per cent in 2015-16, a fall of 19 per cent points. The proportion of wasted children came down from 21 per cent in 1992-93 to 8 per cent in 1998-99, a decline of 13 per cent points. Thereafter, it almost got doubled in 2015-16. The proportion of underweight children came down steadily from 40 per cent in 1992-93 to 25 per cent in 1998-99 thereafter the decline has been sluggish till 2015-16. This is a positive trend even though at a slower pace.

Table 1: Nutritional Status of Children in Punjab, 1992-2016

Years	Type of Area	Stunted	Wasted	Underweight
1992-93	Total	45.2	20.8	39.9
1998-99	Total	45.2	8.1	24.7
2005-06	Total	36.7	10.2	24.9
2015-16	Total	25.7	15.6	21.6
	Rural	24.5	16.1	21.1
	Urban	27.6	15.0	22.4

Source: International Institute for Population Sciences, Mumbai, 2017

Adults

Anthropometric measurement concerned with measurement of body height, weight and proportions, among other things is one of the direct methods of nutritional assessment. As it is, the nutritional status of children has been inferred from stunting, wasting and underweight while in case of adults it is in terms of Body Mass index (BMI).

Table 2: Percentage of Adults below and above BMI Levels in Punjab, 2015-16

Years	Type of areas	BMI below normal (< 18.5 kg/m2)	BMI below normal (< 18.5 kg/m2)	BMI above normal (≥ 25.0 kg/m2)	BMI above normal (≥ 25.0 kg/m2)
		Women	Men	Women	Men
2005-06	Total	18.9	20.6	29.2	22.2
2015-16	Total	11.7	10.9	31.3	27.8
	Rural	13.5	12.3	30.6	25.0
	Urban	9.0	8.9	32.4	32.1

Source: International Institute for Population Sciences, Mumbai, 2015-16

A little above one-fifth of the women and men in the state were thin, i.e. they hada BMI below normal in 2005-06. This proportion has come down to about one-tenth among both men and women in 2015-16 (Table 2). The incidence of thinness was slightly higher among both women and men in rural areas than their counterpart in urban areas.

Ironically, even though both the Punjabi women and men seem less likely to be undernourished but they are more prone to higher risks of the other extreme of malnutrition i.e. overweight or obesity. About 31 per cent of women in Punjab were obese in 2015-16. The corresponding figure for men was 29 per cent. Not only a higher proportion of obese men were the cause of concern but equally critical was an alarming increase in their proportion. During a span of ten years, the proportion of men rose from 22per cent in 2005-2006 to 28 per cent in 2015-16. Urban women and men were more prone to obesity as compared to their rural counterparts.

This rise in obesity in Punjab may be attributed to changes in life style, involving less physical efforts. The increasing popularity of processed and fast foods, dependence on TV for leisure and consumption of more of energy dense food has made their own contribution to increasing obesity.The share of cereals, legumes, pulses and nuts in people's diet has more or less remained stable. The consumption of sugar, oils, fats and animal products have increased. Quite higher prevalence of alcoholism among men (43 per cent) in the state is another vital contributory factor for rising obesity among them. A rapid increase in the tendency of gaining weight should be a wake-up call for the policy makers as obesity itself may not be a specific disease but it certainly is one of the causes leading to degenerative diseases like diabetes, coronary artery diseases, hypertension, cardiovascular diseases, malignancy, sleeplessness, respiratory and orthopaedic disorders.

Micronutrient Deficiencies

Specific micronutrient deficiencies influencing children include iron deficiency anaemia, Vitamin-A deficiency, iodine deficiency disorder and fluoride deficiency. Anaemia or iron and folic deficiency are most common micronutrient deficiency among children, which needs constant vigil as its deficiency can lead to impaired cognitive performance and behavioural and motor development and ultimately affectingtheir academic performance. Anaemia also leads to reduced immunity and increased morbidity among children. The reasons associated with anaemia are undernourishment, poor absorption of iron and folic acid and infestation of hookworms.

Table 3 reveals that almost 66 per cent of children in Punjab in the age group of 6-59 months were anaemic in 2005-2006. Their proportion has come down by about 10 per cent points in 2015-16. However, the perturbing situation was found to exist on the count of steep increase in the proportion of

anaemic women and men in the age group of 15-49 years. The proportion of anaemic women in the state increased by 1.4 times; from 38 per cent in 2005-2006 to 53.5 per cent in 2015-16 and that of anaemic men by 1.9 times; from 13.6 per cent to 25.9 per cent during the same period.

Hookworm infestation perhaps is one of the contributory factors of anaemia, especially among rural children in Punjab. Barefoot walking, unhygienic habits and use of untreated water generally lead to infestation of hookworm which feeds on blood inside the guts thus leading to deficiency of blood in the body. Low dietary intake and poor iron and folic acid intakes are the major factors responsible for the higher prevalence of anaemia.

Table 3: Status of Anaemia among Women and Children in Punjab, 2006-2016

Target Group	2005-06	2015-16
Children age 6-59 months who are anaemic (<11.0 g/dl) (in %)	66.4	56.6
Women age 15-49 years who are anaemic (<11.0 g/dl) (in %)	38.0	53.5
Men age 15-49 years who are anaemic (<13.0 g/dl) (in %)	13.6	25.9

Source: IIPS, Mumbai 2017

A higher emphasis on consumption of milk and milk products leading to deprivation of other nutrients including iron is another contributory factor for anaemia. For tackling such a situation the right kind of awareness on proper cooking of cereals and pulses to prevent nutrient loss is required.

District-Wise Hunger Index of Punjab

Constrained by the paucity of data on child mortality under five years at district level three dimensions have been used to measure hunger at the district level. It is well established that anaemia reflects hidden hunger. Accordingly, three dimensions include child nutritional status, adult nutritional status, and anaemia among both children and adults (including men and women). Seven indicators for which data were made available by the National Family Health Survey have been have been used to calculate hunger index (Neena, 2016).

A regional picture depicting intra-district variation has been obtained through the computation of the hunger index score of the state. Hunger index scores were calculated using a three-step process as elaborated below.

(i) The first step was to compute values of all the indicators at the individual level.

(ii) The second step involved standardization of all the indicators computed at the first instance. Each of the seven component indicators was given a standardized score based on thresholds set slightly above the highest district-level values observed in the state for that indicator.

For instance, the highest value for child stunting among the children less than five years was 34.8 per cent, so the threshold for standardization was set a bit higher, at 38 per cent. In a given year, if a district has a child stunting prevalence of 34.8 percent, its standardized child stunting score is 91.6.

For instance, Faridkot = Child Stunting 34.8 per cent

Standardized Child Stunting = 34.8/38 x100

(iii) At the third step, the standardized scores were aggregated to calculate the hunger index score for each district. The aggregated score for each district was divided by seven that is, by the number of total indicators used in calculating the score. Each nutritional status indicator meant for children and adults contributed one-sixth of the hunger index score, while each indicator pertaining to anaemia contribute one-ninth of the score.

The hunger index ranked districts on a 100-point scale, ranging from 0 to 100, with 0 being the best score (no hunger) and 100 being the worst score(alarming hunger), although neither of these extremes is reached in practice. A value of 100 would signify that a region's indicator level, each exactly meet, the thresholds set slightly above the highest levels observed. A value of zero would mean that a region does not show hunger in terms of the defined

dimensions and indicators.One of the advantages of this hunger index is that it displayed a quick overview of the status of hunger at different districts in the state of Punjab.

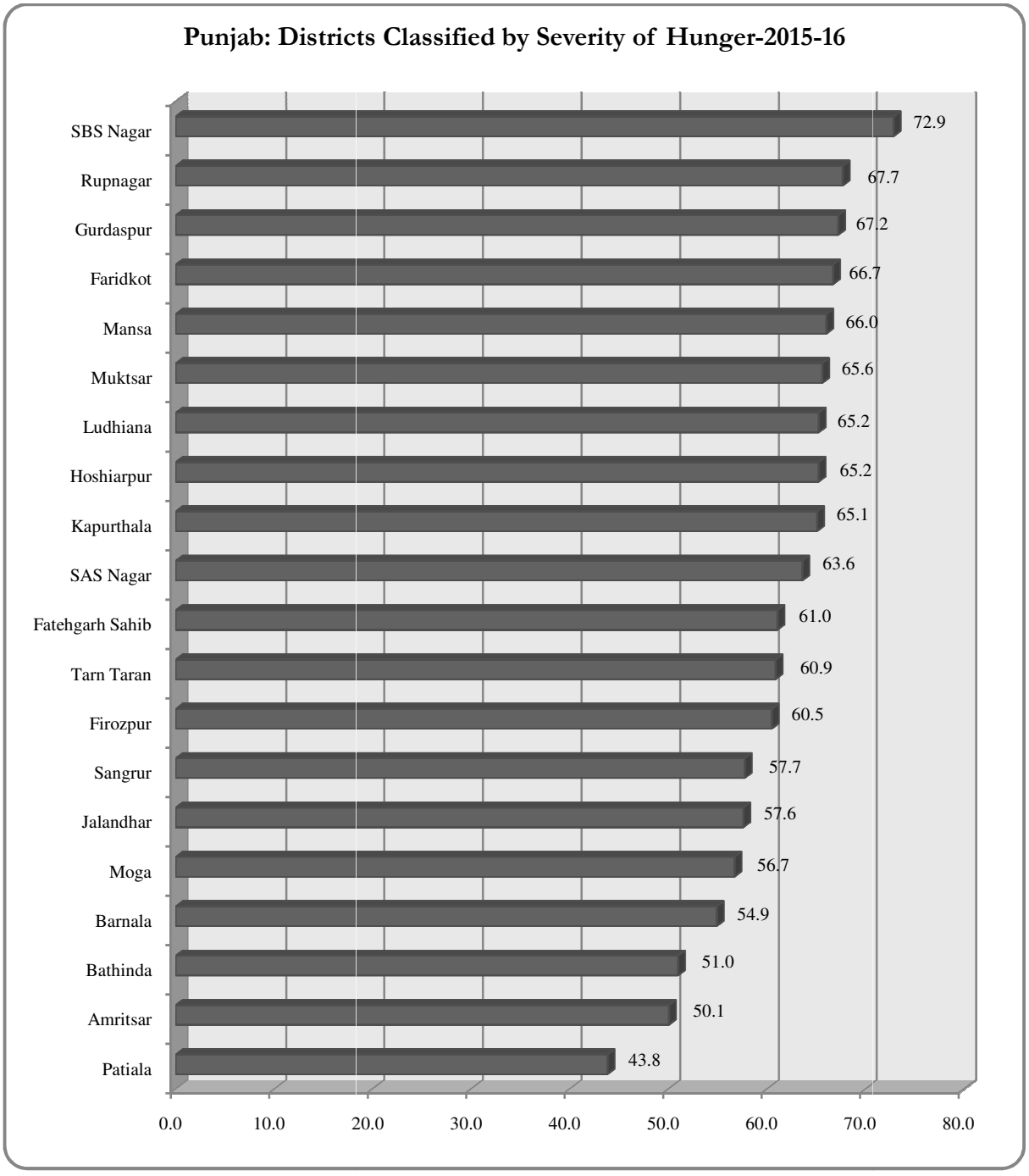

Fig. 1

Interestingly ShahidBhagat Singh Nagar tops on the count of alarming hunger while Patiala was placed on the bottom. There was no visible regional pattern as regards the hunger in different districts. All the three cultural regions, including Majha, Malwa and Doaba consisted of districts with highest and lowest hunger. No region was alarmingly behind others on the hunger score.

An exercise was carried out to find the correlates that were expected to determine hunger in different districts of the state. The correlates at district level included per capita income, proportion

of urban population, proportion of scheduled caste population, proportion of agricultural workers in rural areas, total fertility rate, percentage of female illiterates, green revolution intensity (wheat and paddy area as percentage of total cropped area), unclean fuel used, women aged 20-24 years married below 18 years, defecation in open, sex ratio, wrong breastfeeding practices, no colostrums consumed, untreated drinking water source, females (six years and above) who never attended school were used. These indicators cover a wide spectrum on hunger. Contrary to the expectations, none of the correlates was found to be statistically significant. This leads to the fact that hunger is sum total of all factors instead of dominated by one factor.

Conclusions

The state figured disappointingly on hunger index, 26 percent of children were stunted, 10 percent wasted and 22 per cent were underweight and one-tenth of the adults (both women and men) had a BMI below the normal levels: 57 per cent of the children, 53 per cent of the women and 26 per cent of the men still suffered from anaemia. Not only the present nutritional status of women and children is a matter of concern but equally worrisome is the pace of improvement in these levels. Even though there has been a decrease in the proportion of stunted and underweight children in the State but the progress in this regard is too slow. On the other hand, the proportion of wasted children is on the rise along with increasing levels of anaemia among women and men. The pace of accomplishment to check hunger is quite feeble.

The level of hunger was not uniform across different districts in the state. On a scale of 0 to 100 (best to worst performance) ShahidBhagat Singh Nagar with a value of 73 was the worst performing district while Patiala with a value of 44 was best performing district. All three regions of Majha, Malwa and Doabaequally suffered on account of hunger.

In the absence of no single causative factor found to be leading to higher hunger levels in the state, a multipronged strategy needs to be adopted to prevent and ameliorate the condition of hunger. The immediate goal should be a concerted emphasis on all combined factors that determines hunger among children, adolescent and adults. It is well established that food intake is not the only causative factor leading to hunger; the efforts of providing the right kind of food intake with all the micronutrients need to be made part of daily habits without making special efforts Hopefully under the initiative of Swachh Bharat Mission, the open defection leading to worm infestations will decline along with the incidence of diarrhoea, one of the leading causes of child deaths. All in all, the state has not yet fully translated its agricultural-led economic growth into improvements in nutritional conditions.

References

Economic Advisor to Government of Punjab, *Punjab at a Glance- Districtwise*, Economic Advisor to Government of Punjab, various volumes.

Economic Advisor to Government of Punjab. 2016. *Statistiscal Abstracts of Punjab*, Economic and StatistiscalOrgazination, various volumes.

Department of Statistics.Various volumes of NSSO, Government of India.

Desai, Sonalde and Reeve Vanneman. 2015. Enhancing Nutrition Security via India's National Food Security Act: Using an Axe instead of a Scalpel? *India Policy Forum, Vol 11: 67-113*.

Gupta, A and J.E. Rohde, Infant and Young Child Under-nutrition, Where Lie the Solutions, *Economic and Political Weekly*, December 4, 2004, pp. 5213-5216.

International Institute for Population Sciences (2012), *District Level Household and Facility Survey (DLHS-III), 2007-08*: India, Punjab: Mumbai: IIPS

International Institute for Population Sciences and Macro International (2017), *National Family Health Survey (NFHS-IV), Punjab, 2015-16: Punjab*, Mumbai: IIPS

K. Von Grebmer, J. Bernstein, N. Hossain, T. Brown, N. Prasai, Y. Yohannes, F. Patterson, A. Sonntag, S.-M. Zimmermann, O. Towey, C. Foley. 2017. *2017 Global Hunger Index: The Inequalities of Hunger*. Washington, DC: International Food Policy Research Institute; Bonn: Welthungerhilfe; and Dublin: Concern Worldwide.

Menon, P., A. Deolalikar and A. Bhaskar, 2009, *India State Hunger Index: Comparison of Hunger across States*, Washington, D.C., Bonn and Riverside

Ministry of Women and Child Development, Government of India, ICDS and Nutrition in the Eleventh Five Year Plan (2007-12). *A Report of Working Group and Development of Children for the Eleventh Five Year Plan,* New Delhi

Puri, Raghav (2017): *India's National Food Security Act (NFSA): Early Experiences*, Lansa Working Paper Series, Volume 2017 No 14

Registrar General of India. 2011. *Census of India*, Various volumes.

Singh, Neena (2016): Hunger Amidst Plenty: The Case of Haryana, *Transactions* Vol. 38, No. 2, 2016.

Printed by Deepak C. Nanaware, Palavi Printers, 129/498, Vasant Vihar, Nr. Old Pune Naka, Solapur - 413001 and published by Shilpa Deepak Nanaware, 129/498, Vasant Vihar, Nr. Old Pune Naka, Solapur - 413001 on behalf of Shilpa Deepak Nanaware, 129/498, Vasant Vihar, Nr. Old Pune Naka, Solapur - 413001 and printed at Palavi Printers, 129/498, Vasant Vihar, Nr. Old Pune Naka, Solapur - 413001 and published at 129/498, Vasant Vihar, Nr. Old Pune Naka, Solapur - 413001 editor Deepak C. Nanaware.