



Malnutrition Grows In The Soil

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ABSTRACT

Globally, India is considered as the fastest growing nation as far as its economy is concerned however malnutrition still grows as an epidemic after so many decades have passed on after Independence. According to Global Hunger Index, India ranks 100 among 119 nations as reported by International Food Policy Research Institute in 2017. Although, India topped in production of major food staples globally. According to Global Nutrition Report 2017, India carries a serious burden of Anaemia, Obesity and Malnutrition. Malnutrition are often believed to be associated with starvation and underweight. However, malnutrition is defined by National Institutes of Health as the condition that occurs when your body does not get enough nutrients. India also faces dual burden of obesity along with malnutrition. In India, child and maternal malnutrition are often believed to be a bigger concern than child and maternal obesity which is rising as an epidemic for the future generations and may lead them to various comorbidities associated with obesity. Therefore, it is a very necessary to explore more about the multiple factors that may be responsible behind Malnutrition. Soil Health deterioration is rising as one of the biggest concern behind nutritionally poor outcome of crops. I want to draw the attention of researchers towards the need of more research on Nutritional Insufficiency of the staple foods and to find out the associated factors that may be responsible behind nutritionally inadequate crops. Along with proper strategies, farmers and consumers both should be given nutritional awareness to overcome with Malnutrition.

Keywords : Malnutrition, Starvation, Obesity, Comorbidities, Soil Health

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INTRODUCTION

Globally, India is considered as one of the fastest growing nation as far as it's economy is concerned however malnutrition still grows as an epidemic after so many decades have passed on after Independence. Following are some reasons behind malnutrition.

Food Insecurity – Food Insecurity is still a big concern for India where food accessibility & availability is limited to sections of country due to lack of storage facilities, corruption in public distribution system, transportation, price hikes etc. According to *Global Hunger Index*, India ranks 100 among 119 nations as reported by *International Food Policy Research Institute* in 2017. Although, India topped in production of major food staples globally. (1) Crop-yield-per-unit-area of all crops has grown since 1950, due to the special emphasis placed on agriculture in the five-year plans and steady improvements in irrigation, technology, application of modern agricultural practices and provision of agricultural credit and subsidies since the Green Revolution in India.(2) However, international comparisons reveal the average yield in India is generally 30% to 50% of the highest average yield in the world. In 2010, India had the world's sixth-largest fishing industry. India is the largest producer of milk, jute and pulses, and has the world's second-largest cattle population with 170 million animals in 2011. It is the second-largest producer of rice, wheat, sugarcane, cotton and groundnuts, as well as the second-largest fruit and vegetable producer, accounting for 10.9% and 8.6% of the world fruit and vegetable production, respectively.(3) India ranks second worldwide in farm output. The above data clearly indicates India has a vast potential in accomplishing the food needs of the country. (4) However, there is a wide variation in the per capita monthly consumption of urban and rural sections of the society. ***The NSSO survey of Household***

Consumer Expenditure across Socio-economic groups 2011-12 has data on consumption by caste. The survey shows the per capita monthly consumption of the various fractiles, or classes. (5) The richest 5% of the urban population spent Rs 2,859 per head per month on food in 2011-12, according to the survey, about nine times more than that spent by the bottom 5% of the rural population. (6) Thus, we can conclude from the fact that food security is still a big concern for the country due to lack of accessibility of food stuffs to needy population & lack of proper storage facilities, etc. although we have more than enough food stuffs for the whole country.

Nutrition Insecurity : Food is meant to accomplish the nutritional needs of the body. When food failed to achieve its goal to nourish the body, then we develop malnourishment. However, malnourishment comes from food or soil is the matter of concern which must be investigated timely to overcome with Malnutrition. According to **Global Nutrition Report 2017**, India carries a serious burden of Anaemia, Obesity and Malnutrition. [7] Malnutrition are often believed to be associated with starvation and undernourishment. However, malnutrition is defined by **National Institutes of Health** as the condition that occurs when your body does not get enough nutrients. (8) In India, child and maternal malnutrition are often believed to be a bigger concern than child and maternal obesity which is rising as an epidemic for the future generations and may lead them to various comorbidities associated with obesity. Studies increasingly demonstrate significant deficiencies in many nutrients in those suffering from morbid obesity. These include, but are not limited to vitamin E, vitamin A and the carotenoids, zinc, selenium and thiamine. (9)

The Third National Health and Nutrition Examination Survey (NHANES III: 1988-1994) showed that higher BMI was associated with deficiency of vitamins, A, E, C, D, selenium, folate and carotenoids. (10) Vitamin D deficiency is so common in morbid obesity that it should most likely be considered a comorbidity. (11) Data released by the **World Obesity Federation**, a community of organizations dedicated to solving the problem of obesity, shows that the percentage of Indian adults living with obesity is set to jump to around 5% by 2025, from 3.7% in 2014. Our genetic predisposition for high lipoprotein (a) levels predisposes us to a higher risk of developing diabetes mellitus, cardiovascular diseases, and death, particularly at a younger age than the rest of the world. (12) Therefore, it is very necessary to explore more about the multiple factors that may be responsible behind Nutrition Insecurity.

India's per capita income, a gauge for measuring living standard, is likely to witness a growth of 8.3 per cent at Rs 1,11,782 in FY 2017-18. It is very interesting to know that we have enough food in a country and developed a lot since Independence as far as our per capita income is concerned. But, malnourishment still exist in our country. One of the prominent reason is Nutrient Insufficiency of the crop. Food is no longer remain as nutritious as it was supposed to be earlier due to multiple reasons, in which soil health deterioration is rising as one of the biggest concern behind nutritionally poor outcome of crops. On the basis of previous studies, it has been found that Obesity, Starvation and Infertility are all forms of malnutrition starts in the soil. (13) Hence, it is necessary to draw the attention of researchers towards the need of more research on Nutritional Insufficiency of the staple foods and to find out the associated factors that may be responsible behind nutritionally inadequate crops. Plants grown in nutrient deficient soil often leads to nutritionally inadequate crops. According to International Zinc Association, 26% of India's population is at the risk of Zinc deficiency. With India's current population of around 1.25 billion, a total of 312 million people are deficient of Zinc in India. (14) Extensive deficiency of Zn 49%, Fe 12 %, Cu 3%, Mn 4%, B 33% & Mo 13% in Indian Soil has been reported. (15) A Research study of British nutrient data from 1930 to 1980, published in the *British Food Journal*, found that in 20 vegetables the average calcium content had declined 19 percent; iron 22 percent; and potassium 14 percent. Yet another study concluded that one would have to eat eight oranges today to derive the same amount of Vitamin A as our grandparents would have gotten from one. In another study, it has been found that "Efforts to breed new varieties of crops that provide greater yield, pest resistance and climate adaptability have allowed crops to grow bigger and more rapidly," reported Davis, "but their ability to manufacture or uptake nutrients has not kept pace with their rapid growth." There have likely been declines in other nutrients, too, such as magnesium, zinc and vitamins B-6 and E. (16)

India is indeed a owner of world's most varied climate, soil types, water bodies, etc. but it is very unfortunate situation that our strategies somehow fails to get a nutritious crop out of overused land. We have enough resources to become self sufficient in food production and to get nutritionally rich crops, but what we lack is ignorance and unawareness regarding maintenance of soil health. Although government has started many programmes to help farmers at grassroot level, but it is still not enough to resolve the issue. It is very necessary to create awareness among farmers about the proper procedure to maintain soil fertility. Along with it, nutritional content of food crops must be monitored yearly to get the real

picture and it must be reviewed by experts to get the solution timely and to save our society from nutritional emergency. Ending with the note:

“FEED THE SOIL FIRST & LET THE HUMANS GROW”

REFERENCES

1. <https://www.thehindu.com/news/national/india-100th-on-global-hunger-index-trails-north-korea-bangladesh/article19846437.ece>
2. <http://planningcommission.nic.in/plans/planrel/fiveyr/9th/vol2/v2c4-1.htm>
3. http://shodhganga.inflibnet.ac.in/bitstream/10603/161344/12/12_chapter%206.pdf
4. <https://economictimes.indiatimes.com/news/economy/indicators/per-capita-income-growth-may-fall-8-3-to-rs-111782-in-fy18/articleshow/62383494.cms>
5. http://mospi.nic.in/sites/default/files/publication_reports/NSS_67_68round_Compendium_Sept_2017.pdf
6. <https://www.livemint.com/Opinion/cQbHitMzcHDAEnQVHLPtHP/How-India-Eats-The-class-structure-of-food-consumption-in-l.html>
7. <https://www.ndtv.com/food/global-nutrition-report-2017-india-carries-a-serious-burden-of-anemia-obesity-and-malnutrition-1772100>
8. <http://www.who.int/news-room/fact-sheets/detail/malnutrition>
9. <http://www.bariatricnews.net/?q=node/145>
10. https://www.researchgate.net/publication/6407519_Associations_Between_Body_Mass_Index_and_the_Prevalence_of_Low_Micronutrient_Levels_Among_US_Adults
11. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3664934/>
12. <http://kshema.nitte.edu.in/ambkc2018/about.php>
13. <https://www.farmerangus.co.za/2014/11/09/malnutrition-starts-in-the-soil-the-paradox-of-agriculture/>
14. <https://m.dailyhunt.in/news/india/english/udaipur+kiran+english-epaper-udaieng/zinc+fortification+in+indian+soils+to+supplement+zinc+deficiency+in+human+body-newsid-81654912>
15. <http://krishikosh.egranth.ac.in/bitstream/1/67988/1/T-83694.pdf>
16. <https://www.scientificamerican.com/article/soil-depletion-and-nutrition-loss/>

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