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Research Article

ZERO HUNGER Vs MALNUTRITION: DOUBLE EDGED SWORDGROUND REALITY BASED ON NATIONAL FAMILY HEALTH SURVEY-V, INDIA

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ABSTRACT:

Background: Recently released Global Hunger Index has put India's effort in the field of nutrition in a conundrum. Despite significant steps taken to improve nutrition, India is grappling with double edged sword of Malnutrition. Malnutrition, under or over, has affected many countries across the globe.

Objective: This article explores the ground reality in the meadow of Nutrition status revealed by National Family Health Survey (NFHS)-5 data for 36states/UTs in India.

Material and Methods: It explicitly evaluates the success and inadequacies based on parameters and comparing them with NFHS-4 data. The paper takes on the panoramic view of all forms of malnutrition in different sections as well as the various initiatives and existing programs addressing this issue.

Findings: Among the 22 states, 16 states recorded an increase in underweight and severely wasted fewer than 5 children, which were surveyed during the first phase of the NFHS -5. The NFHS-5 data again revealed that except for Goa & Diu all the states / UTs have shown an increase in the percentage of overweight children over the past 5 years. Conclusion: We need timely nutritional interventions, full immunization, and supplementation programs. PoshanAbhiyan components should be implemented using Inter sectoral convergence and use of technology (ICT) for better service delivery.

KEYWORDS
Malnutrition, Underweight, Stunting, Wasting,Obesity, NFHS 5, SDGs

1 | INTRODUCTION

With 52 million children aged under-5 years wasted and 155 million stunted, under nutrition is still the dominant form of malnutrition affecting this age group. However, overweight/obesity is also on the rise, affecting about 41 million children aged under-5 years.[1]For older children and adolescents (5–19 years), global figures suggest that obesity prevalence (124 million) is catching up with that of underweight (192 million).[2]Malnutrition is a global crisis. Not merely it increases health care costs, reduces productivity, and slows economic growth, but perpetuates a cycle of poverty and ill-health as shown in figure-1.[3]

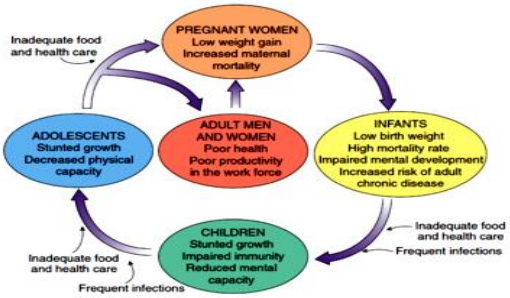

FIGURE 1: Vicious Cycle of Poverty

United Nations declared 2016-2025 as "The decade of Action on Nutrition'' [(4)] with focus on: Sustainable Development Goals (SDG) 2 (Zero hunger) & SDG 3 (Health for All). India also showed its commitment to achieve SDGs with various national programs in place for promoting growth & nutrition. (Fig2)

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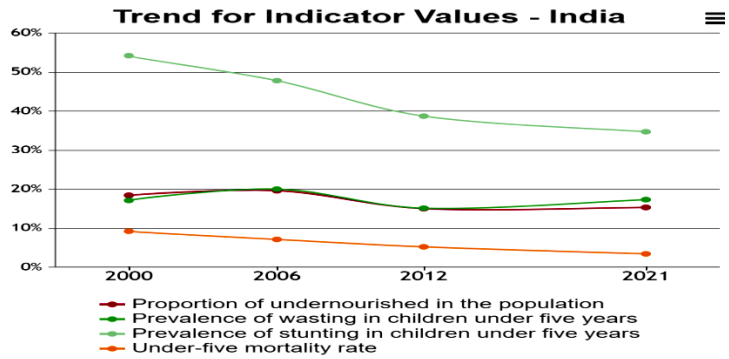
FIGURE 2: Various Nutritional Programs

Integrated child development scheme (ICDS) focuses on holistic approach to improve the health and nutrition of 0-6 year's children by providing nutritional supplementation, immunization, and health check-ups at anganwadi centers across the country. Mid-day meal scheme is world's largest school meal program aimed to address hunger, malnutrition and education



Source: Global Hunger Index

FIGURE 3: Trend for Nutrition Indicators of India

Recently started, Poshan Abhiyan is the flagship program to improve the nutritional outcomes with specific targets to reduce stunting, anemia, under-nutrition and low birth weight. Infant & young child feeding (IYCF) provides facility & home-based care by promoting early breast feeding as well as exclusive breast feeding under MAA program for optimal growth and development of child. Nutritional Rehabilitation centers are facility-based services at CHCs/FRUs for treatment & rehabilitation of severe acute malnourished (SAM) children. Anemia Mukt Bharat earlier known as National iron plus initiative focus on reducing micronutrient deficiencies by providing iron & folic acid supplementation at anganwadi, schools and facility levels. Vitamin A prophylaxis also added to the regime to address micronutrient deficiency leading to blindness. However, the recently released Global hunger index has disclosed a grim situation and the country is battling widespread hunger. India ranked 101 among 116 countries in the Global Hunger Index 2021 and is in the 'serious' hunger category with a score of 27.2 as per the reports released by WHO.[5]World has vowed to eliminate poverty and hunger by 2030 as part of 169 SDG goals adopted in 2015. Although the trends have improved since the year 2000 as shown in figure-3, the Facts Revealed by recent NFHS -5 factsheet for 36 states and UTs released in year 2019-21are daunting. The objective of this article is to study the ground reality in the meadow of duel burden of Malnutrition revealed by National Family Health Survey (NFHS)-5 data for 36 states/UTs in India

2 | MATERIAL AND METHODS

This fact sheet provides information on key indicators and trends for India. NFHS-5 fieldwork for India was conducted in two phases, phase one from 17 June 2019 to 30 January 2020 and phase two from January 02, 2020 to April 30, 2021. The NFHS-5 collected data from 6.1 lakh sample households by conducting household level surveys on population, health, family planning and nutrition related indicators from 28 states and 8 union territories 6. The findings of NFHS-5 were compared with the NFHS-4 (2015-16) for respective states to assess the success and shortcomings in the present scenario.

3 | RESULTS

The results of 17 States and 5 UTs was released as Phase-I. According to the report, 16 states recorded an increase in underweight and severely wasted under 5 children among 22 states that were surveyed during the first phase of the NFHS -5. Similarly, 12 states and UTs of the 22 surveyed registered a surge in the percentage of stunted children under five years of age in comparison to NFHS 4 (2015-16) table 1

TABLE 1 Percent Distribution of anthropometric measures (Stunting, wasting, Underweight) among under fiver age of children in different states of India

States/UTs	Stunting		Wasting		Underweight	
	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4
India	35.5	38.4	19.3	21.0	32.1	35.8
Andhra Pradesh	31.2	31.4	16.1	17.2	29.6	31.9
Arunachal Pradesh	28.0	29.4	13.1	17.3	15.4	19.4
Assam	35.3	36.4	21.7	17.0	32.8	29.8
Bihar	42.9	48.3	22.9	20.8	41.0	43.9
Chhattisgarh	34.6	37.6	18.9	23.1	31.3	37.7
Goa	25.8	20.1	19.1	21.9	24.0	23.8
Gujarat	39.0	38.5	25.1	26.4	39.7	39.3
Haryana	27.5	34.0	11.5	21.2	21.5	29.4
Himachal Pradesh	30.8	26.3	17.4	13.7	25.5	21.2
Jharkhand	39.6	45.3	22.4	29.0	39.4	47.8
Karnataka	35.4	36.2	19.5	26.1	32.9	35.2
Kerala	23.4	19.7	15.8	15.7	19.7	16.1
Madhya Pradesh	35.7	42.0	19.0	25.8	33.0	42.8
Maharashtra	35.2	34.4	25.6	25.6	36.1	36.0
Manipur	23.4	28.9	09.9	06.8	13.3	13.8
Meghalaya	46.5	43.8	12.1	15.3	26.6	28.9
Mizoram	28.9	28.1	09.8	06.1	12.7	12.0
Nagaland	32.7	28.6	19.1	11.3	26.9	16.7
Odisha	31.0	34.1	18.1	20.4	29.7	34.4
Punjab	24.5	25.7	10.6	15.6	16.9	21.6
Rajasthan	31.8	39.1	16.8	23.0	27.6	36.7
Sikkim	22.3	29.6	13.7	14.2	13.1	14.2
Tamil Nadu	25.0	27.1	14.6	19.7	22.0	23.8
Telangana	33.1	28.0	21.7	18.1	31.8	28.4
Tripura	32.3	24.3	18.2	16.8	25.6	24.1
Uttar Pradesh	39.7	46.3	17.3	17.9	32.1	39.5
Uttarakhand	27.0	33.5	13.2	19.5	21.0	26.6
West Bengal	33.8	32.5	20.3	20.3	32.2	31.6
Andaman & Nicobar Islands (UT)	22.5	23.3	16.0	18.9	23.7	21.6
Chandigarh(UT)	25.3	28.7	8.4	10.9	20.6	24.5
Dadra& Nagar Haveli and Daman & Diu (UT)	39.4	37.2	21.6	26.7	38.7	35.8
NCT Delhi (UT)	16.8	5.2	30.9	31.9	21.8	27.0
Jammu & Kashmir	26.9	27.4	19.0	12.2	21.0	16.6
Ladakh	30.5	30.9	17.5	9.3	20.4	18.7
Lakshadweep	32.0	26.8	17.4	13.7	25.8	23.6
Puducherry	20.0	23.7	12.4	23.6	15.3	22.0

3.1 | Stunting of Children (height-for-age)

The percentage of children below five that are stunted according to the World Health Organization (WHO) norms, has not shown any significant improvement since 2015 in all surveyed states and UTs except Manipur & Bihar where the decline was 5.5 % & 5.4 % respectively. Many states have shown the worse trends: Tripura topping the charts with an increase of 8 % in stunting over the last 5 years followed by Goa (5.7 %), Telangana (5.1%), Himachal Pradesh (4.7%), Nagaland(4.1%), Kerala (3.7 %), Meghalaya, and West Bengal & Gujarat also reported increase in stunting. Among UTs Lakshadweep reported a steep rise of 6% in stunting followed by DNH &DD (2.2 %).Even though Bihar has seen a decrease in stunting, yet it recorded 42.9%, highest percentage among all states/UTs and no state/UT reported less than 22 % of child stunting as per NFHS-5 data.

3.2 | Wasting of Children (Weight-For-Height)

Child wasting reflects acute under nutrition and refers to children having low weight for their height. Instead of bringing it down, several states / UTs have witnessed an increase over the past 5 years with Nagaland reporting 7.8 % rise in wasting followed by Assam (4.7 %), Himachal Pradesh & Mizoram (3.7%) each, Telangana (3.6%), Bihar (2.1 %), while states of Maharashtra & West Bengal showed stagnancy at 25.6 % & 20.3% respectively with no improvement in Child wasting. Ladakh became the UT with maximum increase (8.2%) in child wasting.

3.3 | Underweight Of Children (Weight-For-Age)

Children with low weight-for-age are known as underweight. A child who is underweight may be stunted, wasted, or both. Underweight serves as a vital indicator for acute and chronic malnutrition. NFHS-5 trends are worrisome showing an increase this category too. Nagaland is the worst performing state with an increase of 10.2 % in underweight children in the past 5 years followed by Himachal Pradesh (4.3%) Telangana (3.4%), Assam (3%) along with Tripura, Mizoram, Kerala, Goa, Gujarat, showing an increasing trend. J& k reported an increase of (4.4 %), maximum among 5 UTs including Diu, Lakshadweep, Ladakh, and Andaman & Nicobar.

3.4 | Overweight

Overweight or obesity, represents weight for height ratio, is a result of unhealthy diet and less physical activity. It is an important indicator of Diet related non-communicable diseases, helps in assessing the burden on health and economics. NFHS -5 data revealed that except for Goa & Diu all the states / UTs have shown an increase in the percentage of overweight children over the past 5 years with Ladakh reporting maximum 9.4% followed by Lakshadweep (8.9%), Mizoram (5.8%) Tripura (5.2%), J& k (3.9%) and Himachal Pradesh (3.8%).

4 | DISCUSSION

Despite Several efforts made at the national and state level, India still has the largest proportion of underweight children in the world. NFHS-5 revealed trends with some states showing slight decrease while others showing steep increase or no improvement in the under-nutrition status. However, what's a worrisome trend we have seen in this study is that overweight/obesity has consistently increased in children who are 0-5 years, which could further add on to the existing burden of Diet-related non-communicable diseases (NCDs) including cardiovascular diseases (such as heart attacks and stroke, and often linked with high blood pressure, certain cancers, and diabetes.NFHS-5 data left us with catastrophic figures and questions. What could be the reason for such trends? Could it be the economic slowdown impacting the food bowl of the most vulnerable or could it be the lack of political will and social policies at national level? (Budget of mid-day meal scheme & ICDS was reduced [7] in recent years affecting its quality &implementation). A social gradient exists in India, with the higher wealth being associate with a lower likelihood of underweight across all the subpopulations.[8]A better economic status, lower dietary diversity and less physical activity seem to be associated with overnutrition.[9]Several studies indicates that overweight is more prevalent among

educated and wealthier people.[10-12]As Barry et. al. (2020) mention that micronutrient malnutrition is also a component of the double burden but gets lesser attention due to limited data.[13]Study by Basuet. al found that consumption of pulses, milk and vegetables has been shown to reduce the risk of underweight and high consumption of fish, and aerated drinks increases the risk of overweight/obesity. [14]In the Indian context, most often it is the deficiencies in these that are still more prevalent like iron; vitamins A, C and D; zinc, and calcium. [15]

We need to understand the deeper roots of malnutrition in our country. We need to find the Lacunae and act with the sense of Urgency.NFHS-5 data has unraveled two different scenarios with:

States like Bihar showing significant improvement in the underlying factors like household sanitation, access to fuel women status, has resulted in reducing malnutrition parameters such as stunting yet recording the highest percentage among states hints that a multi sectoral approach is required to address the issue.

States with good household environment, water &sanitation, women status as well as good coverage of child & women health services such as Kerala & Gujarat, have shown a decline in nutritional status. It could be due to inadequately utilizing the resources or feeding the infants due to lack of time accounting to employment explaining the need to realize that increase in income alone does not result in improvement in nutrition status instead we need to think for behavioral change strategies.

Existing gender disparity in patriarchal society and traditional beliefs related to food intake and quality of care of a girl child and of a woman during pregnancy and breastfeeding possess as major factors why India is seeing a reverse trend in child stunting as well as increase in under nutrition. Therefore, along with strengthening the policies for vulnerable section, we also need to focus on Social Behavioral Change and Communication (SBCC) on broad themes: antenatal care, optimal breastfeeding (early and exclusive), complementary feeding, nutritional practices, anemia, growth monitoring, girls'–education, diet, right age of marriage, hygiene and sanitation, Healthy eating as well as food fortification. Evidence from NFHS-5 indicates that, more focused approach is needed on ground to tackle the crisis. Although under nutrition and diet-related NCDs are often seen as separate problems in India, nutrition policy with an integrated supply policy is pivotal for this dual burden; a common need for dietary diversity and diet quality. [13]

5 | DIFFICULT ROAD AHEAD

One of the daunting concerns is that during COVID-19, millions of people lost their jobs and migrant workers across the country faced severe food shortages that left pregnant women and children without access to adequate food with required nutrition, pointing to more alarming figures. Furthermore, slowing economy, rising unemployment and increasing cost of essential commodities would certainly have a long-lasting effect on nutritional and health status of children, drifting away country from achieving zero hunger and health for all. Vigorous action needs to be taken without further delay to revive from this dire condition.

6 | RECOMMENDATIONS

A paradigm shift in the way research is conducted and financed is needed to catalyze progress in addressing both forms of malnutrition simultaneously. Policy makers in low- and middle-income countries may perceive a conflict between food supply policies to combat persistent under nutrition and more recent recommendations for policies addressing rising rates of diet-related non-communicable diseases (NCDs). [13]

Our synthesis suggests that the policy to make the health services efficient and improve the status, the government & policy makers should focus on 4A's i.e.

- Availability of health services with adequate human resources (doctors/ nurses/paramedical staff) to address the needs, Safe water and sanitation
- Accessibility: making it within the reach of the vulnerable sections for better utilization,
- Affordability of the services as well as
- Acceptability in terms of quality.

Policy makers evidently need to focus on the first 1,000 days of life[16] – the time spanning roughly between conception and child's second birthday – is a unique period of opportunity when the foundations of optimum health, growth, and Neuro- development across the lifespan are established. Although India has nominally reduced malnutrition over the last decade, and several government programs are in place, there remains a need for effective use of knowledge gained through studies to address under nutrition, especially because it impedes the socio-economic development of the country. [17] While exclusive breastfeeding practices have improved, complementary feeding practices need to be further strengthened. Calorie-dense but nutrient-poor foods (namely, refined cereals, unhealthy fats, sugar, and highly processed snack foods) were identified as presenting common risks, adding little nutritional value to the diet other than calories and being recognized as dietary risk factors for NCDs. Along with that, we need timely nutritional interventions, full immunization, and supplementation programs. PoshanAbhiyan components should be implemented using Inter sectoral convergence and use of technology (ICT) for better service delivery. Our nutritional programs need a360-degree shift with real time monitoring of health services and schemes. Evaluation of ICDS, Poshan Abhiyan Mid –Day meal programs as well as maintaining the statisticaldata for improving policies is the need of the hour. Children are the future of our country.Let's not leave our future in the darkness of malnutrition. It's time to act serious!

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Conflict of Interest: No

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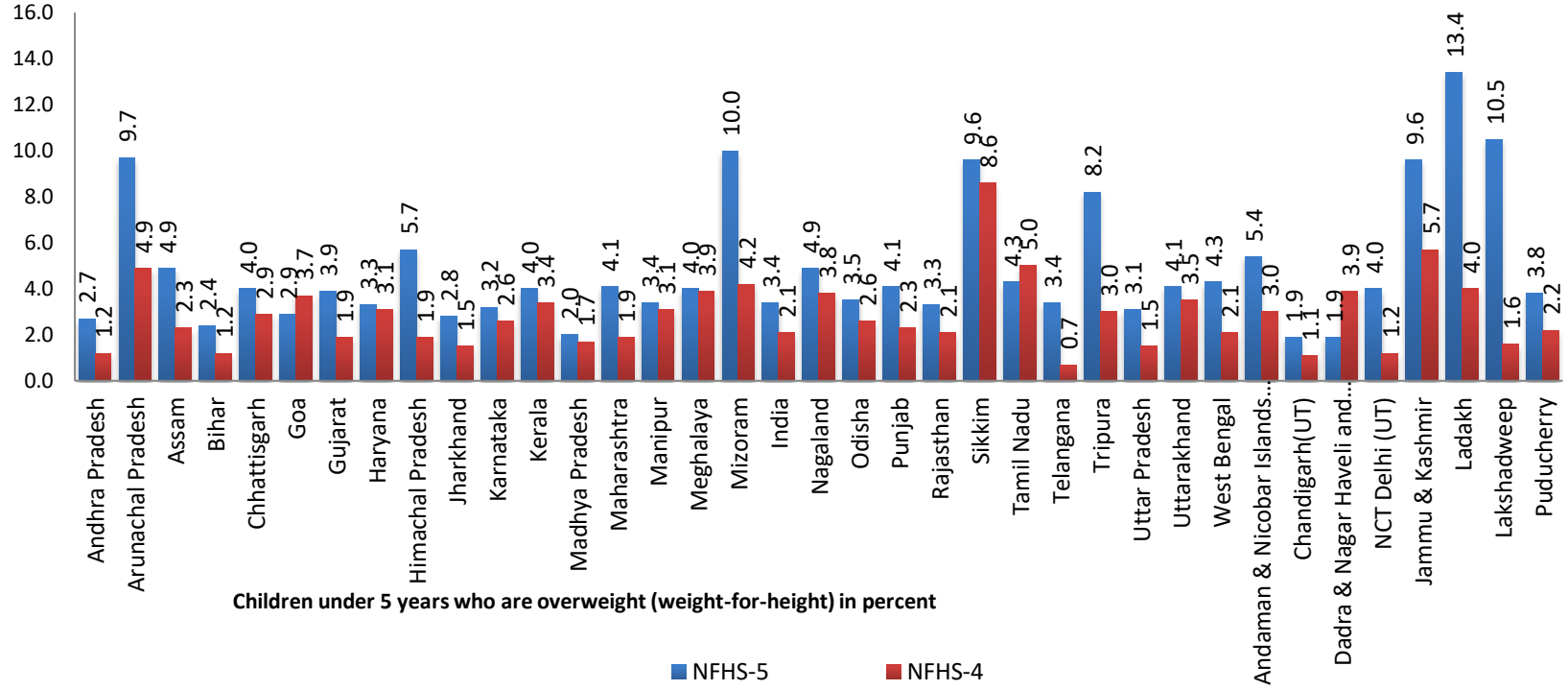

FIGURE 4: Children under 5 years who are overweight (weight-for-height) in percent according to NFHS 5