ISSN PRINT 2319 1775 Online 2320 7876

*Research paper*  UGC CARE Listed ( Group -I) Journal Volume 11, Iss 11, Dec 2022

# MALNUTRITION IN INDIA: PROBLEMS, CHALLENGES AND STRATEGIES

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**Abstract**

When a person's diet does not provide the right balance of nutrients for optimal health, they are considered to be malnourished. This a major problem faced by the world which requires the immediate attention of the governments because it has negative consequences on the children resulting in affecting and performance of children thereby affecting the growth and development of the nation. As a result, the purpose of this paper is to attempt to comprehend various aspects of malnutrition in children under the age of five.

**Key words:** Nutrition, malnutrition, underweight, children, health

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## INTRODUCTION

Geography of Malnutrition is a sub-branch of Nutritional Geography which in turn is a branch of Medical Geography. Geography of Malnutrition has gained greater significance especially in the underdeveloped world due to hunger and food insecurity. Malnutrition is basically a physiological condition which results in various medical conditions such as underweight, overweight and obesity, micronutrient insufficiencies, and non-communicable diseases [1]. Malnutrition, as defined by the World Health Organization (WHO), is characterized by inadequate or excessive intake of nutrients, an imbalance of essential nutrients, or poor nutrient utilization. Sufficient nourishment is fundamental for human development. Insufficient nutrition in the initial one thousand days of a child's life can also result in stunted growth, which is linked to reduced performance in school and work as well as impaired cognitive ability[2].

Malnutrition is divided into various forms such as undernutrition, micronutrient-related malnutrition, overweight and obesity, and diet-related non-communicable diseases. Undernutrition is further divided into 4 sub-forms such as underweight, wasting, stunting, and deficiencies in vitamins and minerals. Wasting is defined as low weight-for-height, Low height-for-age is known as stunting and children with low weight-for-age are known as underweight. These different forms of undernutrition increase the risk of deaths [3].

World Health Organization observes that malnutrition the greatest health issue faced by the planet Earth. It is assessed that about 66% of the total populace experiences the problem of malnutrition[4]. As per the World Health Organization, globally about 1.9 billion adults are obese, and about 462 million are malnourished. Among children below the age of 5 years these figures stood as 233 million in 2020. Of which 149 million children were stunted, 45 million were wasted and 39 million were obese. Another striking feature among children below the age of 5 years death linked to malnutrition which is accounted to 45% [5].

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Malnutrition below the age of 5 years is a widespread health issue in India with highest prevalence of underweight children in the world with almost twice as much as in sub-Saharan Africa[6]. The occurrence of undernutrition among children below the age of five years is fairly high, and there are few studies that evaluate over-nutrition in India[7].

The undernutrition-related child mortality rate remains high in both urban and rural India, despite the country's growing economy and The child's nutritional status is influenced by sex, birth order, exclusive breastfeeding, the type of family, the economic status of the family, acute diarrhoea, and maternal education [8]. Diarrhoea, exclusively breastfeeding, and children born with stunting, underweight, and wasting were all found to have a strong direct correlation[9]. Significant health disparities exist across socioeconomic groups and areas of residence in India, and very little progress has been made to address these disparities [10].

For decades, policymakers and experts in public health have worked to combat malnutrition in India but we couldn't achieve desired results. Hence, this review paper deliberates on the Problems, Challenges and Strategies to fight under-five malnourished children in India.

**MATERIALS AND METHODS** The study is exclusively based on the secondary facts collected largely from various sources such as Government and Non-Governmental Organization. Simple statistical tools are used to arrive to conclusions.

**RESULTS AND DISCUSSION**

According to the Worldmeter, the population of India in 2020 was 1,380,004,385 which accounted to about 17 percent of the global population of the planet earth of which About 26 million children are born in India every year. For any nation its strength lies in its young populace. As per 2011 Census, about 13% of the Indian's population consisted of children in the age of 0-6 years. But unfortunately we are unable to provide nutritious food to the large number of child as a result of which the under 5 Mortality Rate at 35. Similarly, Neonatal Mortality Rate (NMR) for 2019 in 2019 was 22, whereas as the Infant Mortality Rate (IMR) stood at 30 during 2019 [11].

Malnutrition is a key issue in the development of a child as it affects performance of child in studies and later may have to face problems in career prospects. Similarly, the pregnancy-related malnutrition has a greater chance of affecting future generations and has an impact on the child's nutritional status, which will have great consequences on the country's development.

ISSN PRINT 2319 1775 Online 2320 7876

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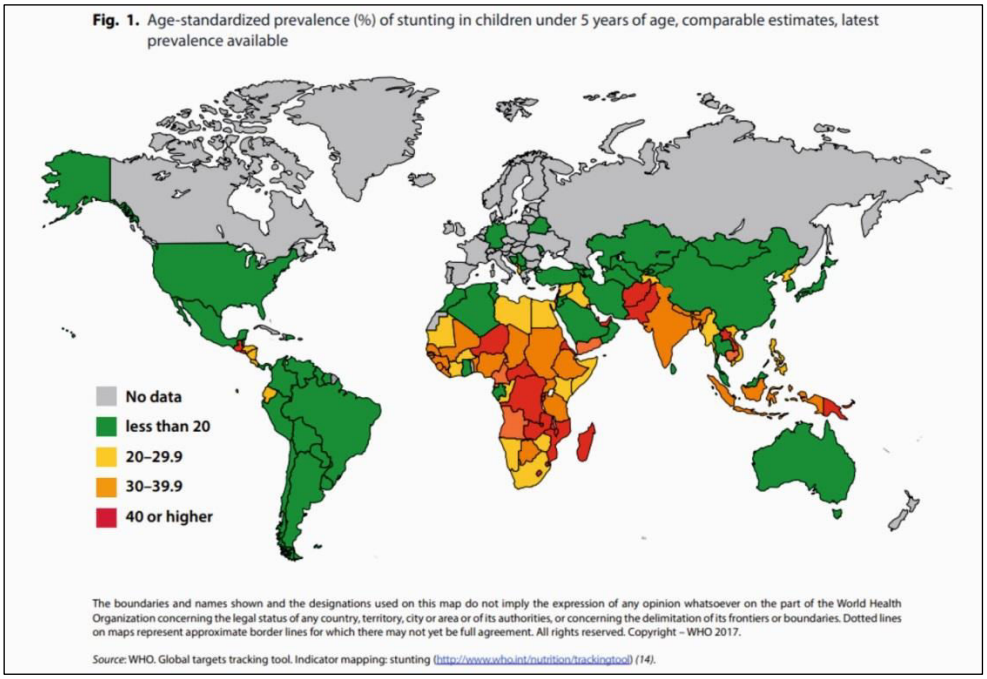


Figure 1 Prevalence of Stunting in children below 5 years of age

The above figure 1 indicates the performance of different countries with respect to stunting in children under 5 years of age. India ranked among the nations with the worst performance on child health pointers in the first National Family Health Survey (NFHS), which was conducted between 1992 and 1993. More than half of the children under the age of four, according to the survey, were stunted and underweight. One child out of every six was excessively thin[12]. While our situation regarding malnutrition is improving, our performance on a global scale remains alarming.

Table – 1 Stunting Children below 5 years of age

| Rank | State/UT | Stunting (%) | |
|---|---|---|---|
| | | NHFS 4 (2015-16) | NHFS 5 (2019-21) |
| 1 | Kerala | 19.7 | 23.4 |
| 2 | Goa | 20.1 | 25.8 |
| 3 | Andaman & Nicobar Islands | 23.3 | 22.5 |
| 4 | Puducherry | 23.7 | 20.0 |
| 5 | Tripura | 24.3 | 32.3 |
| 6 | Punjab | 25.7 | 24.5 |
| 7 | Lakshadweep | 26.8 | 32.0 |
| 8 | Himachal Pradesh | 26.3 | 30.8 |
| 9 | Tamil Nadu | 27.1 | 25.0 |
| 10 | Jammu & Kashmir | 27.4 | 26.9 |
| 11 | Telangana | 28.0 | 33.1 |
| 12 | Mizoram | 28.1 | 28.9 |
| 13 | Nagaland | 28.6 | 32.7 |
| 14 | Chandigarh | 28.7 | 25.3 |
| 15 | Manipur | 28.9 | 23.4 |
| 16 | Sikkim | 29.6 | 22.3 |

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| | | | |
|---|---|---|---|
| 17 | Arunachal Pradesh | 29.4 | 28 |
| 18 | Ladakh | 30.9 | 30.5 |
| 19 | Andhra Pradesh | 31.4 | 31.2 |
| 20 | Delhi | 31.9 | 30.9 |
| 21 | West Bengal | 32.5 | 33.8 |
| 22 | Uttara Khand | 33.5 | 27.0 |
| 23 | Haryana | 34.0 | 27.5 |
| 24 | Orissa | 34.1 | 31.0 |
| 25 | Maharashtra | 34.4 | 35.2 |
| 26 | Karnataka | 36.2 | 35.4 |
| 27 | Assam | 36.4 | 35.3 |
| 28 | Dadra & Nagar Haveli & Daman & Diu | 37.2 | 39.4 |
| 29 | Chhattisgarh | 37.6 | 34.6 |
| 30 | Gujarat | 38.5 | 39.0 |
| 31 | Rajasthan | 39.1 | 31.8 |
| 32 | Madhya Pradesh | 42.0 | 35.7 |
| 33 | Meghalaya | 43.8 | 46.5 |
| 34 | Jharkhand | 45.3 | 39.6 |
| 35 | Uttar Pradesh | 46.3 | 39.7 |
| 36 | Bihar | 48.3 | 42.9 |
| | **India** | **32.2** | **31.22** |

Source: National Family Health Survey (NHFS-4 & 5)

The percentage of stunting children under the age of 5 was 32.20 percent in Report 4 of the National Family Health Survey (NHFS-4), but it dropped to 31.22 percent in Report 5 of the National Family Health Survey (NHFS-5), representing a drop of almost 1 percent. During 2015-16, States such as Uttarakhand (33.5), Haryana (34.0), Orissa (34.1), Maharashtra, (34.4) Karnataka (36.2), Assam (36.4), Dadra & Nagar Haveli & Daman & Diu (37.2), Chhattisgarh (37.6), Gujarat (38.5), Rajasthan (39.1), Madhya Pradesh (42.0), Meghalaya (43.8), Meghalaya (43.8), Jharkhand (45.3), Uttar Pradesh (46.3) and Bihar (48.3) performed very badly in stunting. In Jharkhand, Uttar Pradesh and Bihar almost 50 per cent of population below the age of 5 was stunting children. The performance of the states such as Kerala (19.7), Goa (20.1) Andaman & Nicobar Islands (23.3) Puducherry (23.7) Tripura (24.3) and Punjab (25.7) was exceptionally good. It is remarkable that states with poor results in the NHFS-4 performed admirably well in the National Family Health Survey (NHFS-5). In Bihar, the proportion of children under the age of 5 who are stunted has decreased from 48.3 per cent to 42.9 per cent. Similarly, the percentage of stunted children in Uttar Pradesh fell from 46.3 to 39.7 per cent. Additionally, it is interesting to note that states that performed well in the NHFS-4 performed badly in NHFS-5. The number of stunted children under the age of 5 increased from 19.7 per cent in Kerala increased to 23.4 per cent. Similar trends were observed in Goa, where the proportion of children with stunting children rose from 20.1 percent to 25.8%.

Table – 2 Wasting Children below 5 years of age

| **Rank** | **State/UT** | **Wasting (%)** | |
|---|---|---|---|
| | | **NHFS 4** | **NHFS 5** |
| | | **(2015-16)** | **(2019-21)** |

ISSN PRINT 2319 1775 Online 2320 7876

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| | | | |
|---|---|---|---|
| 1 | Mizoram | 6.1 | 9.8 |
| 2 | Manipur | 6.8 | 9.9 |
| 3 | Ladakh | 9.3 | 17.5 |
| 4 | Chandigarh | 10.9 | 8.4 |
| 5 | Nagaland | 11.3 | 19.1 |
| 6 | Jammu & Kashmir | 12.1 | 19 |
| 7 | Himachal Pradesh | 13.7 | 17.4 |
| 8 | Lakshadweep | 13.7 | 17.4 |
| 9 | Sikkim | 14.2 | 13.7 |
| 10 | Meghalaya | 15.3 | 12.1 |
| 11 | Punjab | 15.6 | 10.6 |
| 12 | Kerala | 15.7 | 15.8 |
| 13 | Delhi | 15.9 | 11.2 |
| 14 | Tripura | 16.8 | 18.2 |
| 15 | Assam | 17.0 | 21.7 |
| 16 | Andhra Pradesh | 17.2 | 16.1 |
| 17 | Arunachal Pradesh | 17.3 | 13.1 |
| 18 | Uttar Pradesh | 17.9 | 17.3 |
| 19 | Telangana | 18.1 | 21.7 |
| 20 | Andaman & Nicobar Island | 18.9 | 16.0 |
| 21 | Uttarakhand | 19.5 | 13.2 |
| 22 | Tamil Nadu | 19.7 | 14.6 |
| 23 | West Bengal | 20.3 | 20.3 |
| 24 | Orissa | 20.4 | 18.1 |
| 25 | Bihar | 20.8 | 22.9 |
| 26 | Haryana | 21.2 | 11.5 |
| 27 | Goa | 21.9 | 19.1 |
| 28 | Rajasthan | 23.0 | 16.8 |
| 29 | Chhattisgarh | 23.1 | 18.9 |
| 30 | Puducherry | 23.6 | 12.4 |
| 31 | Maharashtra | 25.6 | 25.6 |
| 32 | Madhya Pradesh | 25.8 | 19.0 |
| 33 | Karnataka | 26.1 | 19.5 |
| 34 | Gujarat | 26.4 | 25.1 |
| 35 | Dadra & Nagar Haveli and Daman & Diu | 26.7 | 21.6 |
| 36 | Jharkhand | 29 | 22.4 |
| | India | **18.25** | **16.86** |

Source: National Family Health Survey (NHFS-4 & 5)

It is evident from table 2 that the percentage of wasting children below the age of 5 years at national level declined from 18.25 to 16.86 over the course of six years, from 2015-16 to 2019-21. 19 of the 36 States and Union Territories have performed better than the national average, while 17 have performed poorly. States that performed well from 2015 to 2016 have performed poorly from 2019 to 21 and vice versa, just like children who are stunted.

Table – 3 Underweight Children below 5 years of age

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| Rank | State/UT | Underweight (%) | |
|---|---|---|---|
| | | NHFS 4 (2015-16) | NHFS 5 (2019-21) |
| 1 | Mizoram | 12.0 | 12.7 |
| 2 | Manipur | 13.8 | 13.3 |
| 3 | Sikkim | 14.2 | 13.1 |
| 4 | Kerala | 16.1 | 19.7 |
| 5 | Jammu & Kashmir | 16.6 | 21.0 |
| 6 | Nagaland | 16.7 | 26.9 |
| 7 | Ladakh | 18.7 | 20.4 |
| 8 | Arunachal Pradesh | 19.4 | 15.4 |
| 9 | Himachal Pradesh | 21.2 | 25.5 |
| 10 | Andaman & Nicobar Islands | 21.6 | 23.7 |
| 11 | Punjab | 21.6 | 16.9 |
| 12 | Puducherry | 22.0 | 15.3 |
| 13 | Lakshadweep | 23.6 | 25.8 |
| 14 | Goa | 23.8 | 24.0 |
| 15 | Tamil Nadu | 23.8 | 22.0 |
| 16 | Tripura | 24.1 | 25.6 |
| 17 | Chandigarh | 24.5 | 20.6 |
| 18 | Uttara Khand | 26.6 | 21.0 |
| 19 | Delhi | 27.0 | 21.8 |
| 20 | Telangana | 28.4 | 31.8 |
| 21 | Haryana | 29.4 | 21.5 |
| 22 | Assam | 29.8 | 32.8 |
| 23 | Meghalaya | 28.9 | 26.6 |
| 24 | West Bengal | 31.6 | 32.2 |
| 25 | Andhra Pradesh | 31.9 | 29.6 |
| 26 | Orissa | 34.4 | 29.7 |
| 27 | Karnataka | 35.2 | 32.9 |
| 28 | Dadra & Nagar Haveli and Daman & Diu | 35.8 | 38.7 |
| 29 | Maharashtra | 36.0 | 36.1 |
| 30 | Rajasthan | 36.7 | 27.6 |
| 31 | Chhattisgarh | 37.7 | 31.3 |
| 32 | Gujarat | 39.3 | 39.7 |
| 33 | Uttar Pradesh | 39.5 | 32.1 |
| 34 | Madhya Pradesh | 42.8 | 33.0 |
| 35 | Bihar | 43.9 | 41.0 |
| 36 | Jharkhand | 47.8 | 39.4 |
| | India | **27.67** | **36.13** |

Source: National Family Health Survey (NHFS-4 & 5)

Infants will be underweight regardless of whether they are stunted, wasted, or both because underweight is a cumulative index of stunting and wasting. According to NHFS 4 and NHFS 5, children under the age of 5 are shown in Table 3 as being underweight. In the years 2015–16, 27.67 percent of children under the age of five were underweight, and this percentage

ISSN PRINT 2319 1775 Online 2320 7876

*Research paper*  UGC CARE Listed ( Group -I) Journal Volume 11, Iss 11, Dec 2022

rose to 36.13 percent in the years 2019–21, representing an increase of 8.46 percent. While states ranked high in the table have shown mixed trends, some of the states at the bottom of the table have done exceptionally well in controlling underweight among children.

## CONCLUSION

With a score of 29.1 on the 2022 Global Hunger Index, India ranks 107th out of 121 countries, indicating a serious hunger level. India's Hunger Index score was 38.8 in 2000, but it dropped to 36.3 in 2007 and 28.2 in 2014, respectively.

India has implemented a number of nutrition interventions over the past half century with the goal of reducing malnutrition. Under the umbrella Integrated Child Development Services (ICDS) Scheme, the government is implementing a number of programs, including Anganwadi Services, Scheme for Adolescent Girls, and Pradhan Mantri Matru Vandana Yojana (PMMVY), as direct, targeted interventions, to address the nation's malnutrition problem.

The Anganwadi Services Scheme aims to reduce mortality, morbidity, and malnutrition. POSHAN Abhiyaan employs a synergistic and result-oriented strategy with the goal of achieving a time-bound improvement in the nutritional status of adolescent girls, pregnant women, and lactating mothers.

An integrated nutrition support program called Mission Poshan 2.0 aims to improve nutrition content, delivery, outreach, and outcomes by focusing on the creation of practices that promote health, wellness, and immunity against disease and malnutrition.

The largest school meal program in the world, the Midday meal scheme, was started in 1995 and is sponsored by the Government of India. Its goal is to make primary education available to everyone. Every child between the ages of six and fourteen who enrols and attends the school receives cooked meals as part of the scheme.

To completely eradicate malnutrition in our nation would require a significant effort. State and federal governments must collaborate on the coordination and implementation of various programs and schemes in order to combat malnutrition.

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