CHILD MALNUTRITION IN UTTAR PRADESH: CHALLENGES AND OPPORTUNITIES

Dr Ram Gopal & S.K. Upadhyay,

Population Research Centre, Department of Economics, University of Lucknow

ABSTRACT

Malnutrition negatively impacts children's health, reducing development and opportunities. In Uttar Pradesh, the IMR has decreased, and the under-five mortality rate has improved. However, 380,000 children die before five due to malnutrition and other causes. The National Health Policy aims to achieve 23 under-5MRs by 2025 in Uttar Pradesh, but due to challenges like poverty, child labour, unemployment, and nutrition, this target cannot be achieved. Thus, Uttar Pradesh has a high head count ratio of multidimensional poor, with 44.47 percent malnourished in each district. The highest malnutrition rates are in Baharich, Budaun, and Sambhal, with Shravasti being the poorest. Uttar Pradesh, India, has a high rate of malnutrition, with Shravasti being the poorest district. In Bahraich, 52 percent of children under five have stunting, 38 percent are underweight, and 14.30 percent are "wasted." In Shravasti, 20 percent of stunted children are underweight, while 24 percent are "wasted." The country's overall malnutrition rate is 35.50 percent. In Uttar Pradesh, under-five children are more obese in certain districts, with 3,55,314 severely malnourished children. The U5MR has decreased, but still lower than India. SCs and STs Groups have the highest levels of malnutrition, with underweight, wasting, and stunting being the most common issues. Objectives: To understand the challenges of child malnutrition, the status of child malnutrition in Uttar Pradesh, and the status of poverty and malnutrition among the social groups in Uttar Pradesh. Malnutrition has been analysed in children with reference to the three indicators of malnutrition, such as being underweight, wasting, and stunting. This study's research methodology is based on secondary data, including MHRD, MoHFW, NFHS-3, NFHS-4, NFHS-5, UNICEF and WHO etc. Thus, percentage, average, and correlation are used as tools and techniques in this study. Improvements in women's literacy rates, household food security, and socio-economic conditions contribute to children's nutrition.

Keyword: *Malnutrition, Underweight, Stunting, Poverty and Social Groups*

INTRODUCTION

Malnutrition is a leading cause of child mortality and is widely acknowledged as a public health issue in developing countries in India. Globally, nearly 165 million children under the age of five were stunted (height for age) and 52 million were wasted (weight for height). Between 1990 and 2015, the prevalence of underweight fell from 26.5 percent to 17.6 Percent. India has a very high burden of childhood stunting, accounting for 61 million (37%) of the 165 million stunted children under the age of five worldwide. According to Horton (1999), malnutrition is a major development concern with enormous human and economic consequences. Poverty's vicious cycle has exacerbated malnutrition and disease burden. A large number of studies on the short- and long-term effects of childhood malnutrition in developing countries have been published.

Child malnutrition is characterized by deficiency, excess, or imbalance in the energy and

nutrient intake of a child. Widespread socioeconomic disparities exist, which have resulted in uneven and sluggish child nutritional development. According to the World Bank, India has one of the highest levels of malnutrition in the world. In India, the proportion of underweight children is nearly double that of Sub-Saharan Africa, posing serious challenges to mobility, mortality, productivity, and economic growth. Malnutrition among children is one of India's most serious public health issues. Malnutrition has a negative impact on future human performance. According to a recent study, being underweight is responsible for approximately 53% of all deaths in young children. Children belonging to lower castes and scheduled tribes in India have worse nutrition, health and mortality indicators and poorer access to health and nutrition schemes compared with children from higher castes. In India, it is recognized that although the overall level of malnutrition is relatively high, some groups suffer more from malnutrition.

Stunting affects more than half of all children under the age of five in Bahraich district, and the figures are similar in neighbouring districts Shravasti and Balrampur; all three are among India's four poorest districts, according to the NITI Aayog Multidimensional Poverty Index (MPI), 2021. Thus, 1.86 lakh of India's 33 lakh malnourished children live in Uttar Pradesh.Together, Uttar Pradesh and Bihar account for nearly 75% of the country's severely malnourished children. There are 3, 55,314 severely malnourished children in Uttar Pradesh. In 2021, this accounts for 39.50 percent of the country's total number of malnourished children in Uttar Pradesh. Whereas, the country has 8, 99,831 severely malnourished children. Thus, Uttar Pradesh is India's most populous state, with a population of nearly 200 million people. According to the 2011 census, Uttar Pradesh accounts for 16.50% of India's total population. As a result, our state's poor performance in health indicators can have a significant impact on our country. That is why it is of concern to the country. According to the Niti Aayog (2019) Health Indicators Report, Uttar Pradesh's overall health score fell from 33.69 in 2015-16 to 28.61 in 2017-18. The infant mortality rate (IMR) is the number of deaths per 1,000 live births of children under the age of one. In Uttar Pradesh, the IMR dropped from 73 (NFHS-3, 2005–06) to 64 (NFHS-4, 2015–2016) and to 50 (NFHS-5, 2019–2021). The under-five mortality rate (U5MR) in Uttar Pradesh has shown an improvement from 96 in 2005–06, 78 in 2015–16, and 59 in 2019–21. The U5MR has decreased, but it is still lower than in India. Thus, malnutrition is a clinical condition caused by a diet that is deficient or excessive in one or more nutrients. Malnutrition can manifest itself in a variety of ways, including stunting, wasting, and obesity in children. Child malnutrition levels are higher in economically poor and socially backward communities in these areas, according to government data.

Uttar Pradesh has 3, 55,314 severely malnourished children. This accounts to 39.5 per cent of the total number of malnourished children in the country. In this context, the main objectives of the present paper are (i) To analyse the emerging trends of child malnutrition in Uttar Pradesh. (ii) To analyse the status of poverty and malnutrition among the social groups in Uttar Pradesh (iii) To suggest an effective programmes and policies in Uttar Pradesh.

METHODOLOGY

In this paper, malnutrition has been analysed in children in reference to the three indicators of malnutrition such as being underweight, wasting, and stunting. With the help of secondary data, this study will have an analysis of the condition of child malnutrition in Uttar Pradesh. Thus, improvements in women's literacy rates, household food security, and improvement in socio-economic conditions contribute to children's nutrition. This study is based on secondary data including from Ministry of Human Resource Development (MHRD), Ministry of Health and Family Welfare (MoHFW), National Family Health Survey (NFHS-3), National Family Health Survey (NFHS-4), National Family Health Survey (NFHS-5), United Nations International

Children's Emergency Fund (UNICEF) and World Health Organisation (WHO). We have estimated percentage, average and correlation as tools and techniques to analyse the study.

CHILD MALNUTRITION

Malnutrition in all of its forms includes under - nutrition (wasting, stunting, and being underweight), insufficient vitamins and minerals, being overweight or obese, and developing diet-related non-communicable diseases. In developing nations like India, malnutrition particularly that affecting young children is one of the major public health issues. It is a significant source of morbidity in children and accounts for nearly half of child fatalities. Its medical and social disorders have their roots in racism and poverty. Early childhood malnutrition can have serious and long-lasting effects.

Poverty: Due to their limited purchasing power, the poor are unable to provide their family with the quantity and quality of food they would like. This sets off a vicious cycle of undernourishment, decreased ability to work, poor wages, and poverty.

Feeding practises: Poor child upbringing, illogical food beliefs, ignorance of the nutritional value of food, and poor feeding practises all contribute to under nutrition in the family.

Infections: Malaria, measles, or frequent diarrheal episodes can cause acute malnutrition and exacerbate the current nutritional deficiency.

Socio-cultural factors: In Uttar Pradesh, variables such as low socioeconomic status, nutritional deficiencies and food insecurity, mother's age at birth, birth interval, large family size, illiteracy, poor sanitation, and hygiene contribute to high levels of child malnutrition. All these socio-cultural factors are to blame for Uttar Pradesh's high prevalence of child malnutrition.

Unfair food distribution: In the majority of low-income families, girls and women in preschool receive less food than the economically active male members. Poor housing, sanitation, and water supply all lead to illnesses and infections, which in turn cause malnutrition.

Large families: The mother's nutritional status is negatively impacted by the frequent pregnancies. Food availability per capita is also reduced in large families.

Table-1: Cut-off values for Public Health significance

Indicators	Prevalence cut-off values for public health significance
Stunting	<2.5%: very low 2.5 to <10%: low 10 to <20%: medium 20 to <30%: high ≥30%: very high
Wasting	<2.5%: very low 2.5 to <5%: low 5 to <10%: medium 10 to <15%: high ≥15%: very high

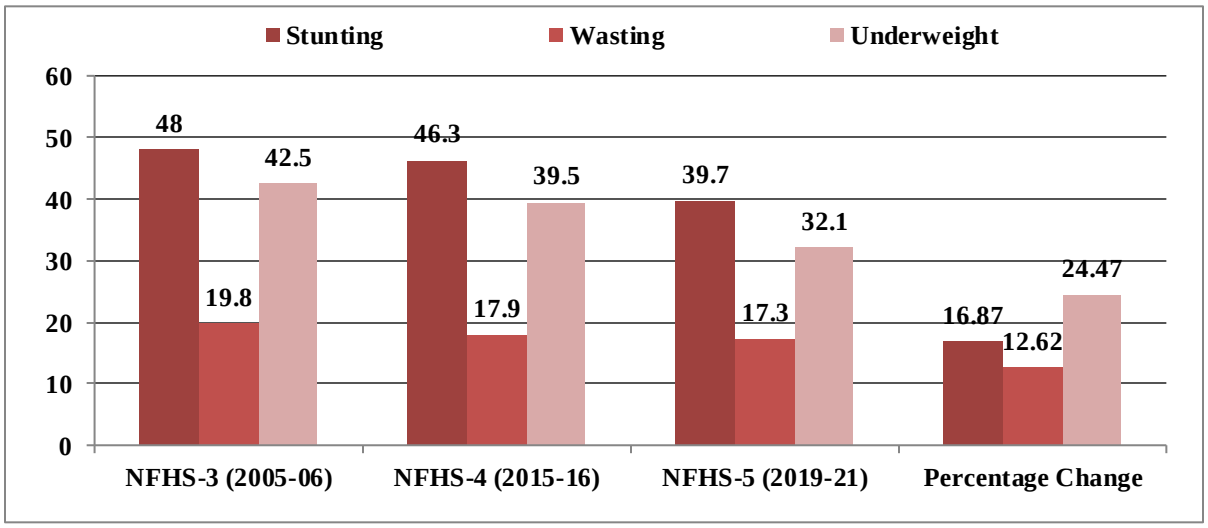
Overweight	<2.5%: very low 2.5 to <5%: low 5 to <10%: medium 10 to <15%: high ≥15%: very high

Source: W.H.O

STATUS OF MALNUTRITION IN UTTAR PRADESH

The percentage of malnutrition of stunting, wasting and underweight in Uttar Pradesh during 2005-06 to 2019-21 are shown in Figure 1. Malnutrition is reducing continuously, but malnutrition is not fully reduced. But, highest percentage change in underweight.

Figure 1: Percentage of Malnutrition in Uttar Pradesh



Source: *Press Information Bureau (pib.gov.in)*

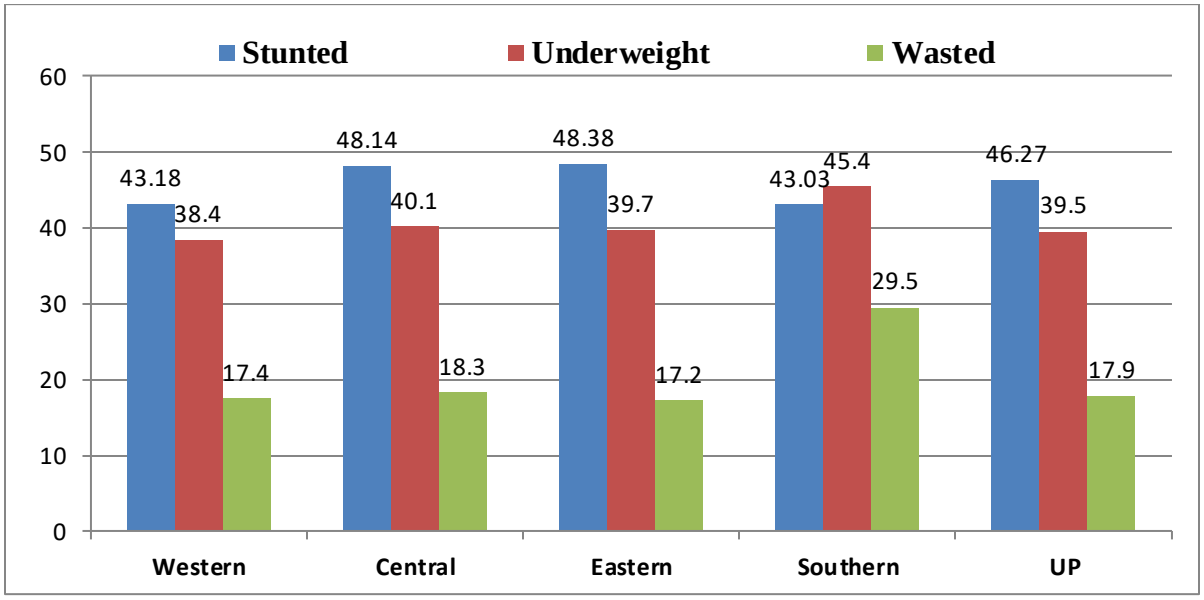
Table 2 depicts that region-wise percentage of under-5 malnutrition is highest through stunting in the eastern region, and through underweight and wasted malnutrition, and it is highest in the southern region of Uttar Pradesh during 2015-16. It is also shown by Figure 2.

Table-2: Region wise percentage of under-5 Malnutrition in Uttar Pradesh (NFHS-4, 2015-16)

Region wise percentage of under-5 malnutrition in Uttar Pradesh			
Region	**Stunted**	**Underweight**	**Wasted**
Western	43.18	38.4	17.4
Central	48.14	40.1	18.3
Eastern	**48.38**	39.7	17.2
Southern	43.03	**45.4**	**29.5**
UP	46.27	39.5	17.9

Source: NFHS-4

Figure 2: Region wise percentage of under-5 Malnutrition in Uttar Pradesh



Source: NFHS-4

Table 3 shows that chronic death among under-5 children through stunting is the highest percentage in Deoria, and death through underweight is the highest percentage in Maharajganj. All over, the result depicts chronic death in four districts such as Gorakhpur, Mahrajganj, Kushinagar, and Deoria during 2015–16.

Table 3: Chronic death under-5 children in Uttar Pradesh during 2015-16

District	Stunted (%)	Underweight (%)
Gorakhpur	42	35
Mahrajganj	53	37
Kushinagar	45	35
Deoria	59	32

Source: NFHS 2015-16

Table 4 shows that the number of severely malnourished children under 5 was highest in Sitapur, Barabanki, Shahjahanpur Badaun, Mirzapur, and Unnao in 2016–17. Moderate acute and severe acute malnutrition are highest in two districts like Mirzapur and Sitapur.

Table 4: All severely malnourished under-5 in major districts of Uttar Pradesh

Malnourished under-5			
Districts	**Total under-5 malnourished**	**Moderate Acute Malnutrition**	**Severe Acute Malnourished**
Sitapur	543241	44610	8229
Barabanki	325965	5436	1310
Shahjahanpur	299797	9161	2474
Badaun	288706	14846	4574
Mirzapur	281065	30225	5977
Unnao	176784	1129	508

Source: The Comprehensive Nutrition National Survey (CNNS) of 2016-17

According to NFHS-5, in Bahraich, 52 percent of children under the age of five have stunting, 38 percent are underweight, and 14.3 percent are "wasted" in terms of weight. Similar statistics may be found in Shravasti, where over 20 percent of children under the age of five are considered "wasted" and over 40 percent of stunted children suffer from underweight. Children in Balrampur are stunted in 40 percent of cases, underweight in 37 percent of cases, and "wasted" in 24 percent of cases. In contrast, the percentages for the entire country of India are 35.5 percent stunted, 32.1 percent underweight, and 19.3 percent "wasted". It is depicted in Table 5.

Table 5: Under-5 Malnutrition in three districts of Uttar Pradesh, 2019-2021

District	Stunted	Underweight	Wasted
Bahraich	52.1	38	14.3
Shravasti	50.9	40.8	20.3
Balrampur	41.1	37.2	24.9
Uttar Pradesh	39.7	32.2	17.3
All India	35.5	32.1	19.3

Source: National Family Health Survey – 2019-2021

Table 6 shows that, during 2019- 21, the prevalence of under-five children who are obese is higher in Banda Chitrakoot, Mohoba, Hamirpur, and Jhansi district.

Table 6: The Prevalence wasting among children below five year 2020-21 is higher in districts level.

The Prevalence wasting among children below five year 2020-21	
Districts	**Percentage (in %)**
Banda	13
Chitrakoot	12
Hamirpur	10.7
Jalaun	8.5
Jhansi	10.4
Lalitpur	7.5
Mohoba	11.7

Source: *NFHS-5*

Although there is a decline in IMR in UP as compared to NFHS 4 data, but looking at the India average, UP severely underperforms. It is a matter of serious concern that in UP, nearly 50 children die per 1000 live births. For India, on an average, this figure is 35. The National Health Policy (NHP) brought out in 2017 had targeted to nationally reduce IMR to 28 by 2019. The latest data shows that not only has India missed the target, but UP fares much poorly. Similarly, U5MR is much higher in UP as compared to India. In UP, nearly 60 children per 1000 live births die below five years of age; for India this figure is about 42. The NHP targets reducing U5MR to 23 by 2025, but clearly the current levels are discouraging. The indicators of malnutrition are alarming in Uttar Pradesh. There are about two stunted children in every five children (under five years of age) in UP (40%). The share of wasted children (under five years of age) in UP stands at 17 percent.

Table 7 depicts that all-over IMR and under-5MR are continuously reducing in Uttar Pradesh and India. The National Health Policy targets achieving 23 under-5MRs until 2025. But, in the case of Uttar Pradesh, this target possibility cannot be achieved until 2025. Because Uttar Pradesh is faced with various types of challenges like poverty, child labour, unemployment, and a lack of nutrition, Consumption inequality is also available between rural and urban poor and rich people in Uttar Pradesh.

Table 7: Infant and Child Mortality in Uttar Pradesh

	NFHS-2	NFHS-3	NFHS-4	NFHS-5
Neo-Natal Mortality Rate (NNMR)	NA	NA	45.1	35.7
Infant Mortality Rate (IMR)	89	73	63.5	50.4
Under Five Mortality Rate (U5MR)	122.5	96	78.1	59.8

Source: *National Family Heath Survey*

Table 8 shows that Uttar Pradesh has Head Count Ratio percentage of population who are multidimensional poor in each district. Thus, 44.47 percent population is malnourished in Uttar Pradesh. In the case of Stunting, then fund that malnutrition is highest Baharich (52.1), Budaun (51.8) and Sambal (51.6) during 2019 to 2021. Shravasti is the poorest district of Uttar Pradesh, Where 74.38 percent of population poor, while Baharich 71.88, Balrampur 69.45, Lakhimpur Kheri 59.95 and Gonda 59.26 percent are the poorest district in state, but, Lucknow is the least poor district in state.

Table 8: Multidimensional Poverty in Uttar Pradesh in 2022

Districts	Multidimensional Poverty (in %)
Shravasti	74.38
Bahraich	71.88
Balrampur	69.45
Lakhimpur Kheri	59.95
Gonda	59.26
Siddharth Nagar	57.24
Budaun	57.10
Sitapur	56.83
Kaushambi	56.06

Source: Niti Aayog, Government of India, 2022

Uttar Pradesh has Head Count Ratio percentage of population who are multidimensional poor in each district. Thus, 44.47 percent population is malnourished in Uttar Pradesh. In the case of Stunting, then fund that malnutrition is highest Baharich (52.1), Budaun (51.8) and Sambhal (51.6) during 2019 to 2021. Shrawasti is the poorest district of Uttar Pradesh, Where 74.38 percent of population poor, while Baharich 71.88, Balrampur 69.45, Lakhimpur Kheri 59.95 and Gonda 59.26 percent are the poorest district in state, but Lucknow is the least poor district in state.

MALNUTRITION AMONG SOCIAL GROUPS IN UTTAR PRADESH:

Child malnutrition levels are higher in economically poor and socially backward communities. States poor performance in health indicators can have a significant impact on our country. India is home to one-third of the world's malnourished children. More than two thirds of baby deaths occur within the first month. About 90% of these fatalities can be avoided by taking simple precautions like avoiding pneumonia and diarrhoea. Malnutrition can be measured using infant mortality and the mortality rate for children under the age of five. People in lower economic categories tend to have higher rates of it. A child's chance of dying within the first five years of life increases if they are from a SC or ST family. In comparison to other caste groupings, it is especially high in rural areas. Although the rate of death across the board is high in urban regions as well, it is lower than in rural ones. An excellent indicator of malnutrition is the infant death rate and the under-5 mortality ratio.

Table 9 shows the highest malnutrition among the SCs and STs groups in comparison to the OBCs and Other groups. Thus, various types of malnutrition were highest in SC/ST groups in the form of underweight, wasting, and stunting. All over finning indicates the highest malnutrition in SCs and STs Groups in Uttar Pradesh.

Table 9: Percentage of malnutrition status among the SCs/STs, OBCs and Others in Uttar Pradesh, 2005-06

Under Weight (weight-for-age), 2005-06			
Category	**Mid**	**Moderate**	**Sever**
SCs/STs	32.9	28.7	20.2
OBCs	34.3	26.8	16.7
Others	33.7	21.0	11.3
Wasting (Weight-for-height), 2005-06			
SCs/STs	29.0	11.6	5.2
OBCs	25.1	9.6	5.3
Others	20.8	8.0	5.0
Stunting (height-for-age), 2005-06			
SCs/STs	20.7	24.1	36.0
OBCs	20.5	24.0	34.5
Others	22.6	24.8	23.2

Source: NFHS, 2005-06

According to the National Family Health Survey's (NFHS, 2005–06) findings, both are more prevalent among low-income groups. Table 10 demonstrates that in Uttar Pradesh, SCs groups have the highest rates of under-5 infant maternal death. However, the national infant mortality rate under the age of five is lower than it is in Uttar Pradesh. Overall results indicate that both SCs and STs Groups had the highest levels of malnutrition.

Table 10: IMR in Social Groups in Uttar Pradesh

	SCs	STs	Others
IMR-Under-5 in UP	85.5	58.5	76
IMR-Under-5 in India	55.8	57.2	46.6

Source: NFHS-4, 2015-16

Table 11 shows that the infant mortality rate is highest in Schedule castes after STs. All over results depicted that malnutrition was highest in SCs and ST groups during 2001–2015.

Table-11: Under-5 IMR in SCs/STs and Others in Uttar Pradesh and India, 2015-16

UP	2001	2011	2015
SCs	99.9	84.5	85.5
STs	89.2	82	85.5
Other	85	76	76

Source: National Institution of Nutrition

CONCLUSION AND POLICY IMPLICATIONS

Malnutrition has a direct impact on the health of children. Therefore, malnutrition reduces child development and opportunity. In Uttar Pradesh, IMR dropped from 73 (NFHS-3, 2005-06) to 64 (NFHS-4, 2015-2016) and to 50 (NFHS-5, 2019–2021). The under-five mortality rate (U5MR) in Uttar Pradesh has shown an improvement from 96 in 2005-06, 78 in 2015-16, and 59 in 2019-21. UNICEF says, "Every year, approximately 380,000 children in Uttar Pradesh die before the age of five due to malnutrition, diarrhoea, and other causes". The percentage of malnutrition in the form of stunting, wasting, and underweight in Uttar Pradesh during 2005–06 to 2019–21. Malnutrition is reducing continuously, but malnutrition is not fully reduced. But, highest percentage change in underweight. Region-wise, under-5 malnutrition percentage is highest through stunting in the eastern region, and through underweight and wasted malnutrition, it is highest in the southern region of Uttar Pradesh during 2015-16. Moderate acute and severe acute malnutrition is highest in two district like as Mirzapur and Sitapur. According to NFHS-5, in Bahraich, 52 percent of children under the age of five have stunting, 38 percent are underweight, and 14.3 percent are "wasted" in terms of weight. Similar statistics may be found in Shravasti, where over 20 percent of children under the age of five are considered "wasted" and over 40 percent of stunted children suffer from underweight. Children in Berhampur are stunted in 40 percent of cases, underweight in 37 percent of cases, and "wasted" in 24 percent of cases. In contrast, the percentages for the entire country of India are 35.5 percent stunted, 32.1 percent underweight, and 19.3 percent "wasted". Thus, Uttar Pradesh has a high rate of malnutrition, with Shrawasti being the poorest district, followed by Baharich, Balrampur, Lakhimpur Kheri, and Gonda. During 2019- 21, the prevalence of under-five children who are obese is higher in Banda Chitrakoot, Mohoba, Hamirpur, and Jhansi district. There are 3, 55,314 severely malnourished children in Uttar Pradesh. The U5MR has decreased, but it is still lower than in India. Overall results indicate that both SCs and STs Groups had the highest levels of malnutrition. The infant mortality rate is highest in Schedule castes after STs. All over results depicted that malnutrition was highest in SCs and ST groups during 2001–2015. It shows the highest malnutrition among the SCs and STs groups in comparison to the OBCs and Other groups. Thus, various types of malnutrition were highest in SC/ST

groups in the form of underweight, wasting, and stunting. All over finning indicates the highest malnutrition in SCs and STs Groups in Uttar Pradesh.

Uttar Pradesh's nutrition condition identifies obstacles and opportunities to reduce maternal and child malnutrition. Childhood stunting remains high, despite improvements in severe underweight. Nutritional interventions are most effective during the first two years of life. The study highlights disparities in nutrition access, poor Infant and young child feeding (IYCF) practices, maternal nutrition, limited ANC services, women's status, household poverty, and food insecurity as responsible for child under nutrition in Uttar Pradesh. Child malnutrition levels are higher in economically poor and socially backward communities. All over the country, all types of malnutrition are reduced in Uttar Pradesh and at the national level, but now, whole malnutrition is not finished in Uttar Pradesh. States poor performance in health indicators can have a significant impact on our country. Thus, malnutrition has a negative impact on future human performance. So, we need to have access to nutritious food, and improvements in education and health help reduce malnutrition. Therefore, expenditure on health and education is beneficial for present and future generations.

REFERENCES

1- Barker DJ, Osmond C (1986), "Infant mortality, childhood nutrition, and ischaemic heart disease in England and Wales," *Lancet*, 327(8489), pp 1077–1081.

2- Horton S. (1999), "Opportunities for investments in nutrition in low-income Asia", Google Scholar *https://www.edexlive.com/news/2021/dec/20/almost-75-per-cent-of-indias-severely-malnourished-children*

3- M. Rammohan et al. (2005), "Megestrol acetate in a moderate dose for the treatment of malnutrition-inflammation complex in maintenance dialysis patients," *J Ren Nutr*, 2005

4- Malnutrition in Uttar Pradesh, Press Information Bureau (pib.gov.in)

5- Manju Rani, Atvir Singh (2021): "Social Inequalities in Child Nutrition in Uttar Pradesh, India" *Indian Journal of Public Health Research & Development*, July-September 2021, Vol. 12, No. 3

6- Ministry of Women and Child Development, Government of India, 2021

7- Ministry of Women and Child Development, Government of India,2021

8- Mishra, Dubey and Others (2021), "Assessing the Risk Factors of Malnutrition in Uttar Pradesh", *International Journal of Current Research and Review Original Research*, Vol 13, Issue 22, November 2021.

9- Bharati S, Pal M and Bharati P. (2008), "Determinants of Nutritional Status of Pre-School Children in India,"*J Biosoc Sci*, 40(6):801-14, 2008.

10- National Family Health Survey – 2017-2018

11- National Family Health Survey – 2019-2021

12- Nidhi Sadana Sabharwal (2011), "Caste, Religion and Malnutrition Linkages", *Economic & Political Weekly,* Vol xlvi no 50, 2011

13- NITI Aayog Government of India's Multidimensional Poverty Index (MPI), 2021

14- NITI Aayog, Government of India, The World Bank M of H& FW. Healthy States, Progressive India: Report on the Ranks of States and Union Territories. Heal States, Progress India Rep Rank States/UT, 2019.

15- Paul VK, Sachdev HS and Others (2011), "Reproductive health, and child health and nutrition in India", *The Lancet*, 377(9762):332-49, 2011

16- Santhya KG, Acharya R and Others (2017), "Understanding the lives of adolescents and young adults (UDAYA) in Bihar, India, 2017.

17- Sukhadeo Thorat and Nidhi Sadana (2009): "Discrimination and Children's Nutritional Status in India", *IDS Bulletin*, Volume 40 Number 4 July 2009.

18- Wagstaff et al. "On the measurement of inequalities in health'', *Soc Sci Med*, 1991