

# **The Problem of Child Wasting in Jhajjar District, Haryana: A Spatial Analysis**

**Jyoti<sup>1</sup>, Dr. Sudhir Malik<sup>2</sup>**

<sup>1</sup>Research Scholar, Geography Department, Baba Mastnath University, Asthal Bohar, Rohtak, Haryana

<sup>2</sup>Professor, Geography Department, Baba Mastnath University, Asthal Bohar, Rohtak, Haryana

## **ABSTRACT**

Undernutrition refers to the insufficient intake of essential nutrients due to inadequate food quality or the consumption of inappropriate food lacking necessary macro and micronutrients vital for healthy growth and development. A child may still experience undernutrition even if their food intake meets energy requirements, as a larger quantity of food does not guarantee a rich supply of these nutrients. This condition can result in children being underweight, having a shorter stature, and exhibiting lower weight relative to their age. The objective of this study is to investigate the issue of child undernutrition in the peripheral National Capital Region (NCR) district of Haryana, specifically in Jhajjar, from a geographical perspective. Additionally, the study aims to uncover the spatial distribution of child wasting, providing valuable insights for policymakers to develop targeted government strategies addressing specific regional challenges. Data for this research has been gathered from secondary sources, with an analysis of child wasting conducted at the community development block level. The spatial patterns of child wasting have been examined using data from the Department of Child and Women Development under the Ministry of Women and Child Development for Jhajjar for the year 2023-24. The assessment of child undernutrition is based on the proportion of stunted children among the total number of active children enrolled in Aanganwadi centers.

**Keywords: Undernutrition, Wasting, Nutrients, Child, Food Security**

## **INTRODUCTION**

The problem of undernutrition is worldwide. But in developing countries, it is widely prevalent and very common due to food insecurity in many part of these countries. In order to deal with this problem and improve the food security level in these countries, the role of Green Revolution Programme was played significant role. In India is also a major problem of hunger and undernutrition among each age group of population. As a result of implementation and adaptation of new technology, agricultural production at national and state level increased rapidly and Haryana started producing surplus foodgrains. Although the Green Revolution technologies was extended to other part of the country as well Haryana became the biggest beneficiary of this revolution. In this background, Haryana as well as its regions are generally assumed to be very low prevalence of undernutrition with food secure state. However, the reports of 4<sup>th</sup> round of NFHS reveals very shocking scene of child undernutrition under five years of age in the state. According the survey report of 2016-16, 21.4% of under five children are underweight, 34% are stunted and 21.2% are wasted. These percentage of different indicators of child undernutrition is less than the national average, but it is very serious in food secure state. This present study analysis the problem of child undernutrition under five age group for Jhajjar district of Haryana state. The figure of NFHS (4), 2015-16 reveals that there is 21% children are underweight, 22.3% are stunted and 15.5% are wasted. This district is lies in food surplus state of India and located in peripheral belt of NCR. The problem of undernutrition of children in this district is concerned. The latest data of NFHS 5<sup>th</sup> round of 2019-20, there is 9.7% children are underweight, 15.6% are stunted and only 8.8% are wasted. The percentage of underweight and wasting children has dropped 50% form 4<sup>th</sup> round of NFHS but the problem of stunted children is same.

## **Research Problem**

The study aim to understand the problem of child stunting in a food secure and peripheral NCR region district of Haryana namely Jhajjar in geographical point of view. The present study will also reveal the spatial pattern of child undernutrition problem in form of stunting and finding of the study provide useful inputs to policy makers for formulating area and problem specific government policies. By the results of the present study, Government pursue the food related programmes to solve the problem of the child undernutrition in Jhajjar district and other region of Haryana as well as India.

### **Objective of Study**

The main objective of this study is to analysis the spatial patterns of undernutrition in form of wasting among child population under five in Jhajjar district of Haryana and also check out the responsible factor of child wasting in different blocks of Jhajjar district.

### **METHODOLOGY**

This study also analyzed the spatial pattern of child stunting of 0-5 age group at block level of Jhajjar district. For block level analysis, data have been taken from the department of Women and Child Welfare of Jhajjar district. This department collected and compiled data from Aanganwadi centers.

The department provide data for 7 circles of Jhajjar district. But there are 5 blocks in Jhajjar district. So firstly data categorized from circles to block wise. The data provided in terms of total no. of child in 0-5 years age group, number and percentage of stunted children. The data report from the department is for March 2024. Spatial pattern at block level has been showed through the choropleth map prepared by using ARC GIS 10.4 software.

### **Study Area**

The present study has taken district Jhajjar of Haryana as study area. Jhajjar district is one out of the 22 districts of Haryana state in Northern India. It carved out of Rohtak district on 15 July 1997 and with it's headquarter in Jhajjar city. It far away only 29 kilometers from Delhi. It is peripheral region of National capital of India and developed into an important industrial Centre.

Other towns in the district are Bahadurgarh, Badli and Beri. Geographically, it spread in 1834 sq. kilometers. It lies in 29°21'30" to 29°51'30" North latitude and 76°16'30" to 76°58'30" East longitude. It surrounded by Rohtak and Sonapat in north; Rewari and Gurugram in south; national capital Delhi in the east and Bhiwani in west. It has 3 tehsils, 1 sub-tehsil, 5 blocks and 247 inhabited villages.

### **RESULTS AND DISCUSSION**

The child undernutrition data of all block is collected on parameter like wasting (low weight for height). The department of Women and Child Welfare has been provided data in total number of children who actively participated in Aanganwadi centers, total number and percentage of children affected by stunting, wasting, underweighting and overweighting. The overweighting is form of overnutrition. So it does not be carried in present study.

#### **Wasting (Low weight for height)**

Wasting is low weight for height in children under the age of five years. It is a symptom of acute under nutrition, which occurs due to insufficient food intake or high incidence of infection disease like vomiting and diarrhoea. It impairs the functioning of child immune system whole stop wasting can lead to increase susceptibility to infection diseases with their heightened duration and severity.

Severe wasting can also result in an increased risk of death. In Jhajjar district wasting is prevalent among 0.34 % (SAM) and 1.38 % (MAM) o children under the age of 5 years. The wasted children are categorised into 2 standards, first SAM and another one is MAM. SAM stand for severally acute malnutrition. It means that child have very low weight according to their height.

They considered very weak and undernourished. Another one MAM is stand for moderately acute malnutrition and child. They are lighter than the required weight according to their height, but they can move into normal child in very short time spend with healthy rich dietary or nearest food habit and other healthy practices at household level.

#### **Wasting –SAM (Severe Acute Malnutrition)**

It is denoted in the percentage and number of children under the five years age, whose weight according to height for age is below -3 standard deviations (severe) from median child growth standards of the World Health Organization. SAM wasted children are high chance of death and other chronically disease.

**Table 1: CD Block-wise Child Wasting-SAM in Jhajjar District, 2023-24**

Block	Total Child <sup>1</sup> (0-5)	Wasting-SAM	
		Number	%
Bahadurgarh	20908	55	.31
Beri	7596	8	.10
Jhajjar	12196	61	.50
Matainhel	6846	38	.56
Salhawas	5340	16	.30
<b>Total</b>	<b>52286</b>	<b>178</b>	<b>.34</b>

<sup>1</sup> = total active children measured (height & weight) for the month march 2024.

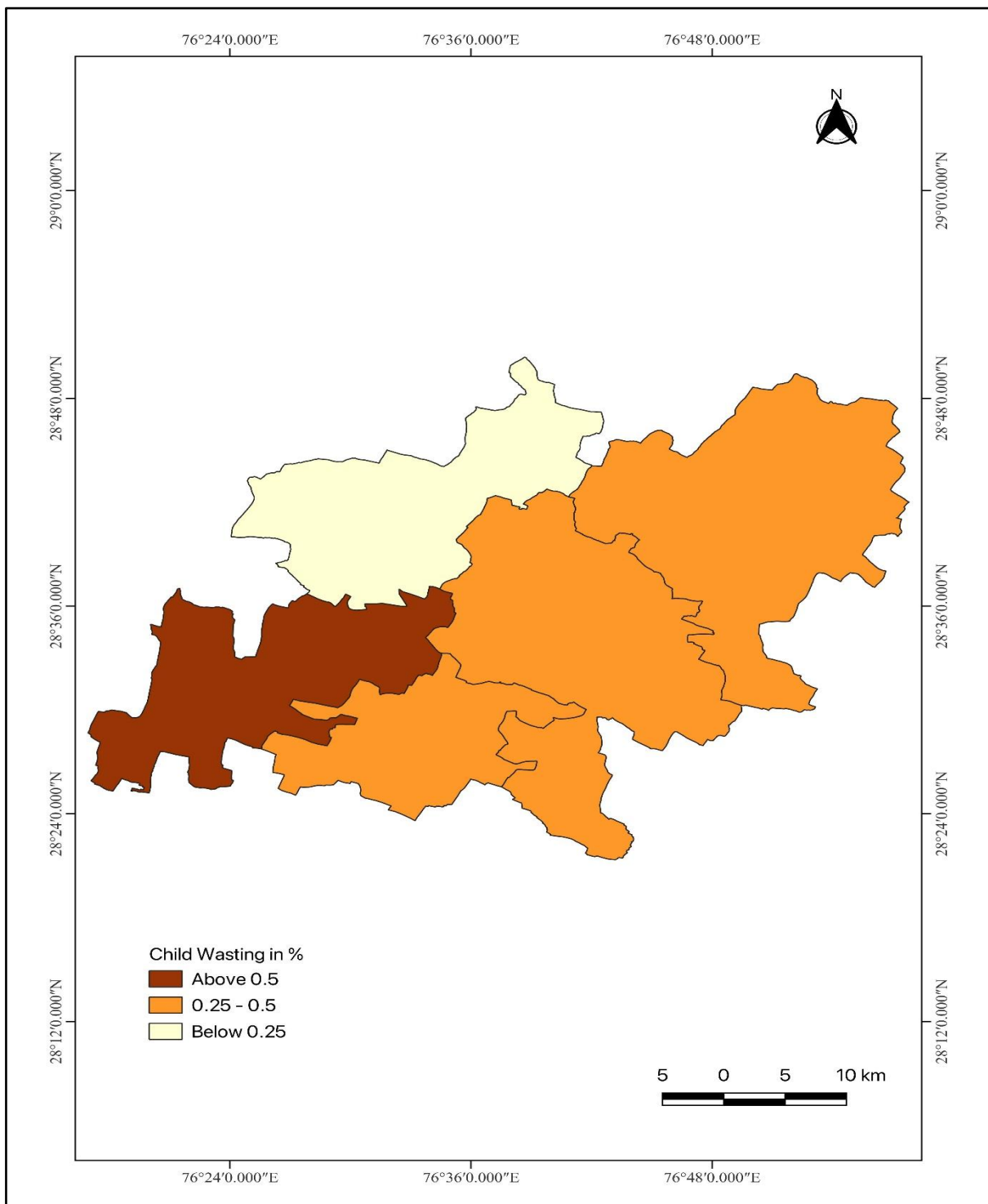
Source: Department of Women & Child Welfare, Jhajjar, March 2024

Table 1 shows the numbers of severely wasted children and their percentage out of total active children under the age of five years. The data has been taken from department of Women and Child welfare at Jhajjar city. The data is according to community development block of Jhajjar district. In Jhajjar district, there are only 178 children having problem of severe wasting out of total 52286 children. The percentage of severe wasting is less than half percentage (.34%). The highest number (61) of severely acute malnutrition of wasting is in Jhajjar block and the lowest (8) in Beri block. The percentage of severely wasted children is in Matainhel block with .56 % and the lowest in Beri block with .1 % . The number of wasted children in Bahadurgarh block is next to Jhajjar block, but percentage is comparatively low. This score (.31%) is less in the Jhajjar district. Here the reason of lower percentage of severely wasting is economic development due to locate in peripheral in National Capital Delhi. The level of urbanization, industrialization and employment is higher than other blocks of this district. Beri and Salhawas is also not recorded very high prevalence in severe wasting. Beri block recorded lowest (.1%). Salhawas block recorded higher (.3%) prevalence of severe wasted children.

Map 1 shows the spatial pattern of percentage of severely wasted children under the age of five years. The map shows the prevalent area into three categories. It shows the area of high, moderate and low prevalence of severe wasted in Jhajjar district.

- i. **The Area of High Prevalence of Severe Wasting (above 0.5%)** - The areas of severe wasting are prevalent in Matainhel and Jhajjar block. These blocks have .56 and .5 percent severely wasted children. Jhajjar block is main and important because this headquarter city of this district. This is rural as well as urban block, but it is not well developed urban center. It is only day active city. Here is no major industrialization so, it does not provide job or generate income. Surrounding rural areas are also not very rich or produce access agricultural production. Block Matainhel is rural completely. In this block, reason behind the high prevalence is low literacy rate, most of population engage in agricultural activity which generate income seasonally. Here treated safe drinking water and latrine facility also not very well. That became a cause of infection among the children under the age of five years.
- ii. **The Area of Moderate Prevalence of Severe Wasting (.25-.5%)** - In this category, there are two blocks, name Bahadurgarh and Salhawas block of this district. Salhawas block recorded .30 % and Bahadurgarh recorded .31 % severely wasted children. Salhawas is totally rural block but Bahadurgarh is rural as well as urban. The reason of less number of severe wasted children in Bahadurgarh block is high level of urbanization, literacy rate and employment rate.
- iii. **The Area of Low Prevalence of Severe Wasting (below .25%)** – Only Beri block has low prevalence of severe wasting. Beri has .1% severe wasted children. In Jhajjar district, Beri recorded the lowest proportion of severe wasted children. Here the reason of low wasting in Beri is urbanization, literacy rate and employment rate. On the other hand, this block has better food utility sources like safe drinking water and latrine facility. These better facilities reduce the chance of infection among the children.

**Map 1: CD Block-wise Child Wasting-SAM of Jhajjar District, March 2024**



Source: Based on Table 1

**Wasting –MAM (Moderate Acute Malnutrition)**

It is denoted in the percentage and number of children under the five years age, whose weight for height of their age is below -2 standard deviations (moderate) from median child growth standards of the World Health Organization. MAM is stand for moderately acute malnutrition and child. They are lighter than the required weight according to their height, but they can move into normal child in very short time spend with healthy rich dietary or nearest food habit and other healthy practices at household level.

Table 2 shows the numbers of moderately wasted children and their percentage out of total active children under the age of five years. The data has been taken from department of

**Table 2: Block-wise Wasted Child –MAM in Jhajjar District, 2023-24**

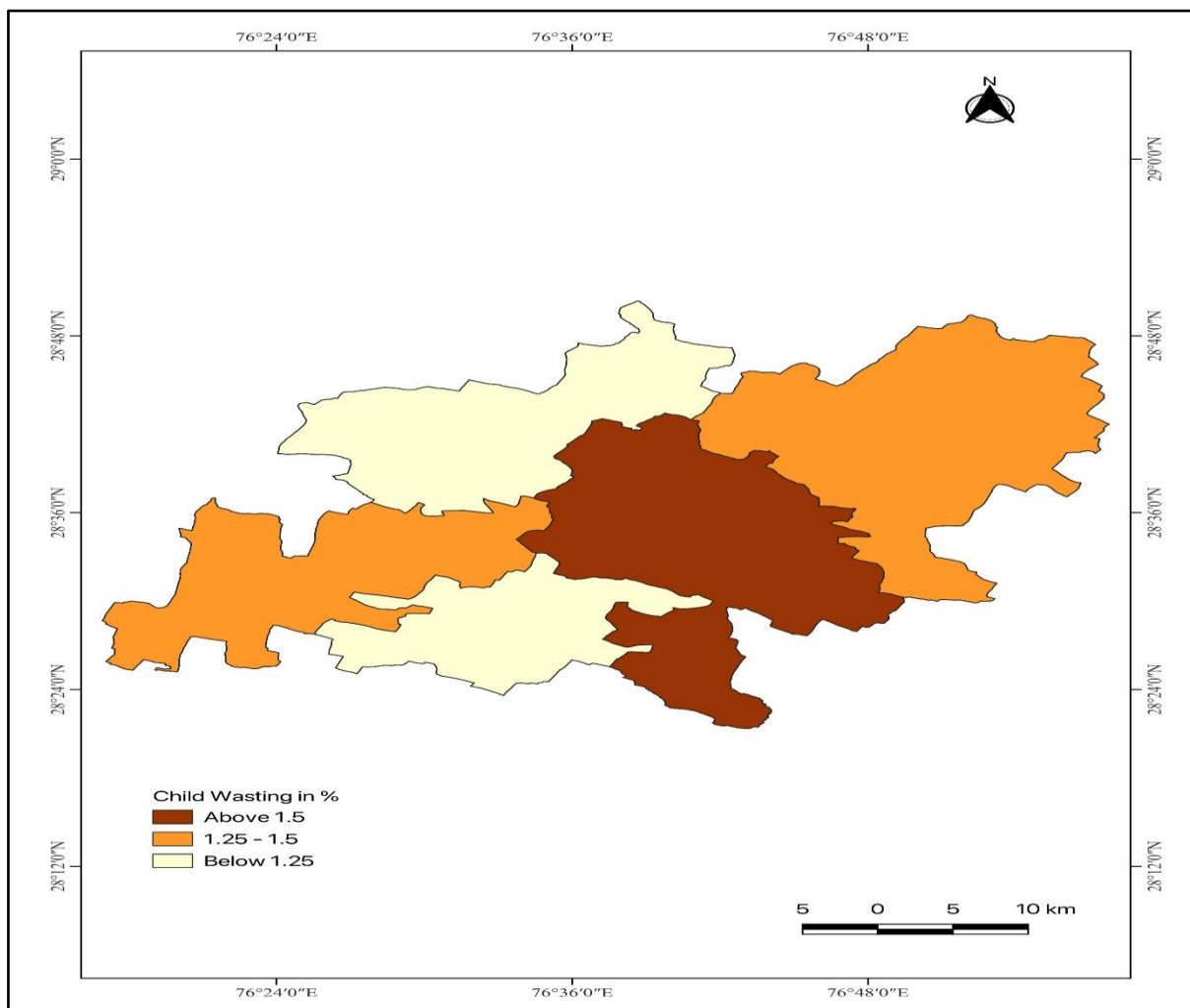
Block	Total Child <sup>1</sup> (0-5)	Wasting-MAM	
		Number	%
<b>Bahadurgarh</b>	20908	287	1.34
<b>Beri</b>	7596	70	.90
<b>Jhajjar</b>	12196	200	1.64
<b>Matainhel</b>	6846	102	1.49
<b>Salhawas</b>	5340	61	1.14
<b>Total</b>	52286	720	1.38

<sup>1</sup> = total active children measured (height & weight) for the month march 2024.

Source: Department of Women & Child Welfare, Jhajjar, March 2024

Women and Child welfare at Jhajjar city. The data is according to community development block of Jhajjar district. In Jhajjar district, there are only 720 children having problem of moderate wasting out of total 52286 children. The percentage of moderate wasting is 1.38%. The highest number (287) of moderately acute malnutrition of wasting is in Bahadurgarh block and the lowest (61) in Salhawas block. The highest percentage of moderate wasted children is in Jhajjar block with 1.64 % and the lowest in Beri block with .90 %. The number of wasted children in Matainhel block is next to Jhajjar block, its percentage is 1.49%. This score (1.49%) is more than average of district. Bahadurgarh recorded the median percentage. Here the reason of lower percentage of severely wasting is economic development due to locate in peripheral in National Capital Delhi. The level of urbanization, industrialization and employment is higher than other blocks of this district.

**Map 2: CD Block-wise Child Wasting –MAM in Jhajjar District, March 2024**



Source: Based on Table 2

Beri and Salhawas is also not recorded very high prevalence in severe wasting. Beri block recorded lowest (.9%). Salhawas block recorded higher (1.14%) prevalence of severe wasted children.

Map 2 shows the spatial pattern of percentage of moderately wasted children under the age of five years. The map shows the prevalent area into three categories. It shows the area of high, moderate and low prevalence of moderately wasting in Jhajjar district.

- i. **The Area of High Prevalence of Moderately wasting (above 1.5 %) -** The area of wasting are prevalent in Jhajjar block. this block has 1.64 percent moderately wasted children. This block is main and important because this headquarter city of this district. This is rural as well as urban block. But it is not well developed urban center. It is only day active. Here is no major industrialization so, it does not provide job or generate income. Surrounding rural areas are also not very rich or produce access agricultural production.
- ii. **The Area of Moderate Prevalence of Moderately wasting (1.25- 1.5 %) -** In this category, there are two blocks, name Bahadurgarh and Matainhel block of this district. Matainhel block recorded 1.49 % and Bahadurgarh recorded 1.34 % moderately wasted children. Matainhel is totally rural block but Bahadurgarh is rural as well as urban. The reason of less number of severe stunted children in Bahadurgarh block is urban facility and employment. Here the reason of low stunted children in Bahadurgarh is high level of urbanization, literacy rate and employment rate etc. On the other hand, the second highest prevalence of moderate wasting is in Matainhel block. The reason of high prevalence in this block, there is lack of treated safe drinking water and latrine facility. It became a cause of infection among the children under the age of five years.
- iii. **The Area of Low Prevalence of Moderately Wasting (below .25 %) –** Beri and Salhawas block have low prevalence of Moderate wasting. Beri has .90 % moderately wasted and Salhawas has 1.14 % wasted children. In Jhajjar district, Beri recorded the lowest proportion of moderately wasted children. Here the reason of the lowest wasted children in Beri is high level of urbanization, literacy rate and employment rate than Salhawas block. On the other hand, in Salhawas block, the reason is not so clear.

#### **Wasting- Total (SAM+MAM)**

Here the total denoted the severe and moderate wasting of children under the age of five years together. In Jhajjar, total 1.17 percent children under the age of five years are stunted. In term of wasting, Jhajjar perform better than stunting and underweight. According to NFHS-5 survey, there is only 9 % children are severely wasted and 4% are moderately wasted in Jhajjar district. But from data of Aanganwadi that compiled by the department of Women and Child Development, Jhajjar has only 1.71(SAM+MAM) percent wasted children under the age of five years. The problem of wasting in Jhajjar is not a major problem of child undernutrition of 0-5 years.

Table 3 shows the numbers of total wasted children and their percentage out of total active children under the age of five years.

**Table 3: CD Block-wise Child Wasting-Total (SAM+MAM) in Jhajjar District, 2023-24**

Block	Total Child <sup>1</sup> (0-5)	Total Wasted child	
		Number	%
<b>Bahadurgarh</b>	20908	342	1.63
<b>Beri</b>	7596	78	1
<b>Jhajjar</b>	12196	261	2.14
<b>Matainhel</b>	6846	140	2.04
<b>Salhawas</b>	5340	70	1.44
<b>Total</b>	52286	898	1.71

<sup>1</sup> = total active children measured (height & weight) for the month march 2024.

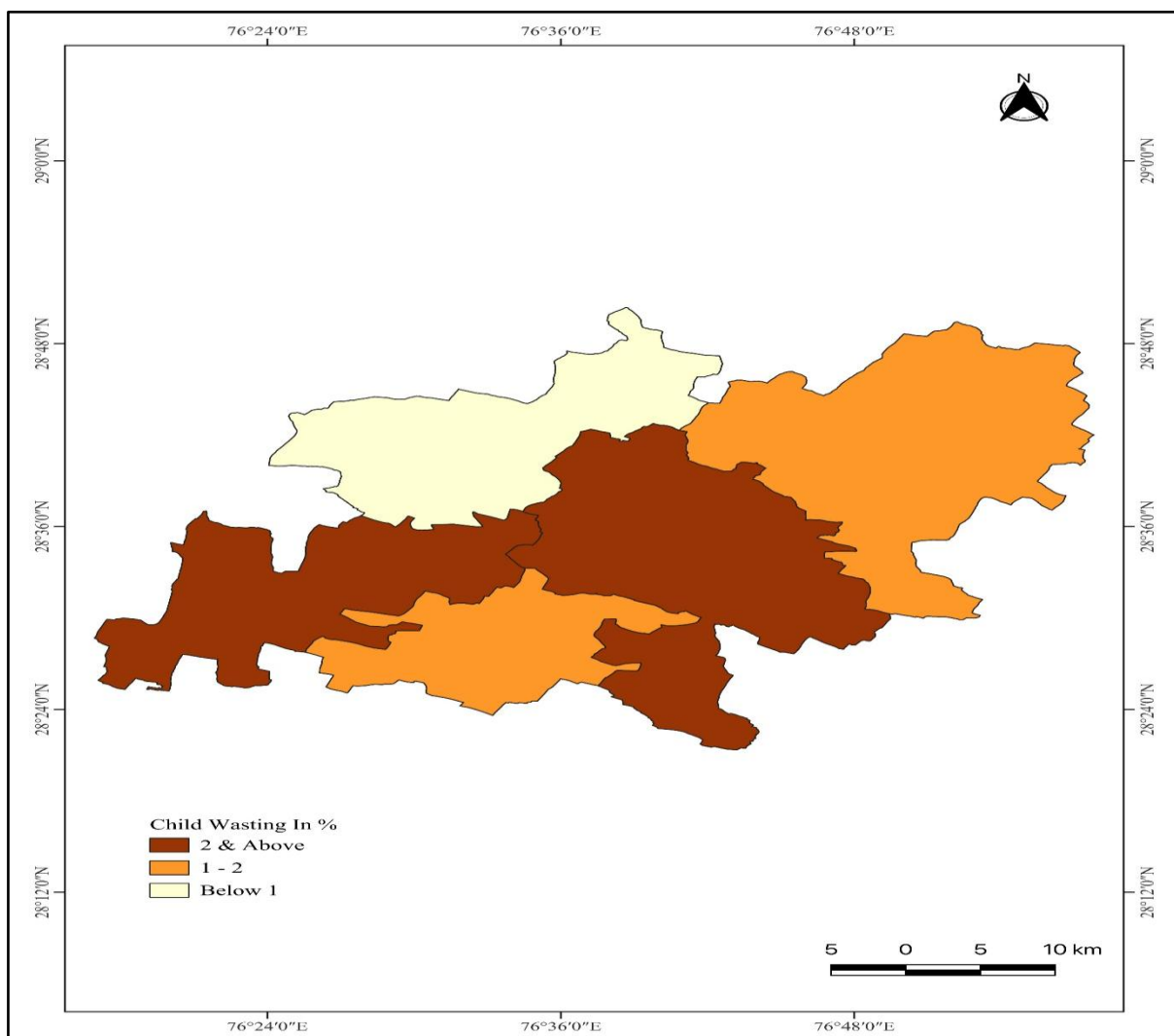
Source: Department of Women & Child Welfare, Jhajjar, March 2024

The data has been taken from department of Women and Child welfare at Jhajjar city. The data is according to community development block of Jhajjar district. In Jhajjar district, there are total 898 children having problem of wasting out of total 52286 children. The percentage of total wasting is 1.71%. The highest number (342) total wasting is in Bahadurgarh block and the lowest (70) in Salhawas block. The highest percentage of total wasted children is in Jhajjar block with 2.14 % and the lowest in Beri block with 1 %. The number of wasted children in Matainhel block is next to Jhajjar block, its percentage is 2.04 %. This score (2.04 %) is more than average of district. Bahadurgarh recorded the median percentage. Here the reason of lower percentage of total wasting is economic development due to locate in peripheral in National Capital Delhi. The level of urbanization, industrialization and employment is higher than other blocks of this district. Beri and Salhawas is also not recorded very high prevalence in severe wasting. Beri block recorded lowest (1%). Salhawas block recorded higher (1.44%) prevalence of severe wasted children.

Map 3 shows the spatial pattern of percentage of total (SAM+MAM) wasted children under the age of five years. The map shows the prevalent area into three categories. It shows the area of high, moderate and low prevalence of total wasting in Jhajjar district.

- i. **The Area of High Prevalence of total wasting (above 2 %) -** The areas of high wasting are prevalent in Jhajjar and Matainhel block. These blocks have 2.14 percent and 2.04 percent wasted children. Jhajjar block is main and important because this headquarter city of this district. This is rural as well as urban block. But it is not well developed urban center. It is only day active. Here is no major industrialization so, it does not provide job or generate income. Surrounding rural areas are also not very rich or produce access agricultural production. On the other hand, the second highest prevalence of total wasting is in Matainhel block. The reason of high prevalence in this block, there is lack of treated safe drinking water and latrine facility. It became a cause of infection among the children under the age of five years. Jhajjar and Matainhel block required these food utility facilities like treated water facilities and toilet facilities.
- ii. **The Area of Moderate Prevalence of total wasting (1-2 %) -** In this category, there are two blocks, name Bahadurgarh and Salhawas block of this district. Salhawas block recorded 1.44 % and Bahadurgarh recorded 1.63 % wasted children. Salhawas is totally rural block but Bahadurgarh is rural as well as urban. The reason of median number of wasted children in Bahadurgarh block is high level of urbanization, literacy rate and employment rate etc. On the other hand, in Salhawas block, the reason is rural and agricultural economy.
- iii. **The Area of Low Prevalence of total Wasting (below 1 %) –** Beri and Salhawas block have low prevalence of wasting. Beri has 1 % total wasted. In Jhajjar district, Beri recorded the lowest proportion of moderately wasted children. Here the reason of the lowest wasted children in Beri is high level of urbanization, literacy rate and employment rate. This block has good food utility that reduce the chance of infection among the children under the age of five years.

**Map 3: CD Block-wise Child Wasting-Total (SAM+MAM) in Jhajjar District, March 2024**



Source: Based on Table 3

## CONCLUSION

The problem of child undernutrition is a major problem in developing countries like India. There is many form of child undernutrition. Among these the problem of wasting is taken to analysis in this present study. Wasting means child is too lighter or has less weight according to height. The problem of wasting is also categorized into two category. One denote by SAM and another by MAM. SAM is stand for severely acute malnourished and MAM is for moderately acute malnourished. The data has been analyzed at block level. Among the SAM wasted children, the highest proportion of severely wasted children are recorded in Jhajjar block and the lowest in Beri block. On the other hand, moderately wasted children, the highest also found in Jhajjar block and lowest in Beri block. If we see the spatial pattern of total wasted children in Jhajjar district, there is the high (2% and above) recorded in Jhajjar and Matainhel block, moderate (1-2%) in Salhawas and Bahadurgarh block and the lowest (below 1%) in beri block. The reason of median number of wasted children in Bahadurgarh block is high level of urbanization, literacy rate and employment rate etc. On the other hand, in Salhawas block, the reason is rural and agricultural economy. Here the reason of the lowest wasted children in Beri is high level of urbanization, literacy rate and employment rate. This block has good food utility that reduce the chance of infection among the children under the age of five years.

## REFERENCES

- [1]. FAO. (2012). *The State of the food insecurity in the World*. Food and Agriculture Organization of the United Nation, Rome, Italy.
- [2]. GoI. (2011). *District Census Handbook Jhajjar, Village and Town Directory*. Directorate of Census Operations, Haryana.
- [3]. Jose, Sunny, Bheemeshwar, Reddy A. & Aggarwal, Mayank (2018). Child Undernutrition in India: Assessment of Prevalence, Decline and Disparities. *Economic Political Weekly*, Vol.48. pp. 63-78.
- [4]. Khan, J. & Mohanty, S.K. (2018). Spatial Heterogeneity and Correlates of Child Malnutrition Industries of India, *BMC Public Health*, Vol. 18(1). pp.1027.
- [5]. MoWCD. (2022). *Malnutrition among Children*. PIB, New Delhi.
- [6]. Mishra, V.K.& Rutherford, R.D. (2000). *Women's education can improve child nutrition in India*. Retrieved from <https://scholarspace.manoa.hawaii.edu/handle/10125/3468> on February 2024.
- [7]. Sud, Hari (2006). *India-Food Security and Its Future*. Retrieved from <http://www.southasiananalysis.org/%5cpapers20%5cpaper1999.html>.
- [8]. Swaminath, M. S. (2001). Food Security and Sustainable Development, *Current Science*, Vol. 81, pp. 8.
- [9]. UNICEF. (2005). *The state of the world's children: excluded and invisible*. UNICEF Policy Review, New York
- [10]. UNICEF (2006). *Undernutrition*. Retrieved on April 2023, from <http://www.unicef.org/progressforchildren/2006n4/undernutritiondefinition.html>
- [11]. UNICEF. (2012). *The situation of women and children*. Retrieved from <http://www.unicef.org/malawi/children.html>
- [12]. UNICEF. (2014). *Multiple Indicator Cluster Survey (MICS)*, New York
- [13]. Vassilakakou, Tania. (2021). *Childhood Malnutrition: Time for Action*. MDPC, Basel, Switzerland.
- [14]. WHO (2012). *Trade, Foreign Policy, Diplomacy and Health: Glossary of Globalization, Trade and Health Terms*. WHO Available from: <http://www.who.int/trade/glossary/story028/en/>.