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### Role of food habits in causing malnutrition in primary children (3-7 years)

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#### Abstract

For a healthy body, it is necessary to consume a nutritious and balanced diet, which not only nourishes the body but also keeps it healthy by preventing various diseases, because nutritious and balanced food contains all those nutrients which protect our body from becoming malnourished. When we talk about the health of children, it becomes necessary to take special care of their eating habits. It is true that poverty is a major cause of malnutrition, but lack of awareness about nutrition and the eating habits of children are also considered to be the cause of malnutrition. Many times the family has sufficient capacity to provide food, but despite availability of resources, children become victims of malnutrition due to their eating habits, it is very important to take care of this. The economic condition of the family also completely affects the level of malnutrition. Through the presented paper, an attempt has been made to explain that the eating habits of children and the economic condition of the family are related to malnutrition.

**Keywords:** Malnutrition, malnourished, nutrition, nutrients, poverty

#### Introduction

At present, the problem of malnutrition in India is increasing day by day. Due to the change in the current lifestyle and food habits, the problem of malnutrition is being seen in abundance among the people. The main reason for malnutrition is considered to be poverty, illiteracy and less awareness about nutrition. If we understand the meaning of malnutrition, then disordered eating which is due to taking nutrients more than required or less than required. Malnutrition is a Pathological condition that arises due to deficiency or excess of one or more essential nutrients in any proportion or in absolute terms. The World Health Organization defines "malnutrition as the cellular imbalance between the supply of nutrients and energy and the body's demand for them to ensure growth, maintenance and specific function." <https://www.who.int/news-room/questions-and-answers/item/malnutrition>.

According to IFPRA, 2014 a low intake of vitamins, proteins, carbs and minerals causes about 2 billion people all over the world to suffer from micronutrients malnutrition. (<http://www.ikl.org.essay/literat>). A person of any age group can suffer from malnutrition but the most vulnerable group are, young children, lactating and pregnant women, older people those who are with illness and have a conciliare immune system as well as poverty stricken people. Today, even though the rate of malnutrition is decreasing in India, still young children are the most victims of this disease. Even though the problem has reduced in the upper class, but still the children of lower class families are affected by the problem of malnutrition, because nutrients such as, proteins, minerals, salt, calcium, phosphorous and vitamins are required for the proper development of children. But children whose foods have lack of essential nutrients become victims of malnutrition. Dr. Seema Yadav MD. Physician, care Institute of Life Science, explaining the work of malnutrition in children, said that the change in the life style of children is also the reason for malnutrition today. Consuming Junk food, fast food, waking up late at night, eating while watching T.V, not eating without looking at mobile, preferring preserved food etc. are many reasons that children are suffering from diabetes, thyroid etc., problem at an early age and children are becoming victims of malnutrition at an early age. This problem has increased further after the Corona epidemic compared to the whole world. India has the largest numbers of stunted children whose no is 4.6C car ore and there are 2.55 crores children who are weak. There is a serious problem in low income household. In such families, 51% children are stunted and 49% children are very weak.

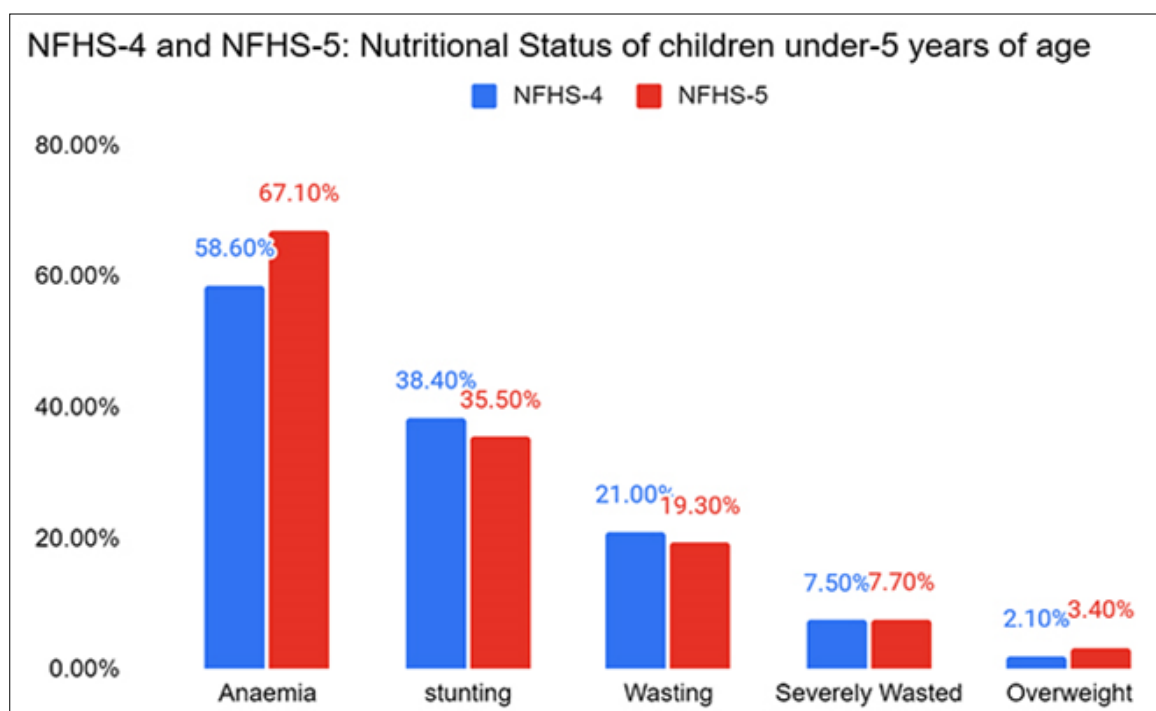
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On asking Suraj Kumar, a driver working in the University of Gaya, he told that he has 4 children in his family. Due to less earning, things like milk, fruits, dry fruits & all essential food items are not available to the children. This is to say, low income & high number of children in the family is also a major cause of malnutrition. If we look at the figures of the Government of India, at present more than 33 Lakhs children are malnourished in India, while 17.7 Lakhs of these children are severely malnourished.

India ranks 101 out of 116 countries in the Global Hunger Index 2021 published jointly by concern worldwide and well hunger life, which expresses that a large population of India does not even get meal for two times. In this situation, if we talk about the state of Bihar alone, then according to the National Family Health Survey for 2015-2016, maximum cases of malnutrition have been seen in the state of Bihar. There were 48.3% children in Bihar who were of the age of 5 years. His physical development was not commensurate with the age, which is the main reason, non-availability of proper nutritional food. We often consider poverty to be the cause of malnutrition, whereas the reality is that the problem of malnutrition is seen seriously in the children of homes where children are properly cared for and that family background is rich. Today everyone's lifestyle has changed. Even children are not untouched by them, often children going to secondary school also become victims of malnutrition due to bad eating habits like not taking the meal properly, when children do not eat complete or not able to take enough food, then their body does not get essential nutrients like protein, calcium, iodine and phosphorous. Children prefer magi, chips, chow mein, noodles and cold drinks to eat, while the harmful chemical element found in them reduces the appetite. Along with this it also causes many types of problems in the stomach. It is often seen that children's school is held in the morning time due to

which children are not able to take balanced or proper diet. Also in Tiffin they like such food items which are not beneficial for their health. Along with this another problem is also seen that children of this age have many stomach related problems. Like getting worms in the stomach, stomach infection which affects the digestion of food. In which the child consumes food but the essential nutrients are not absorbed by the body and the child becomes malnourished. A mother living in Vastu Vihar in Gaya city told that when the child comes from school, he does not want to eat because he will not get time to play games on mobile, either he does not eat or eats quickly. Along with these reasons, if seen children who do not have physical activity and who like to sit at home play watch TV and use mobile. This problem is also seen in them. The food taken by the children gets digested late and they do not feel hungry due to which they also become a victim of obesity. Studies have shown the absence of micro-nutrients like Vitamin A among primary children increases the risk of diarrhoea and morbidity for infection in respiratory tract (Sommer *et al.* 1984, Dibley *et al.* 1992). Role of hand hygiene is quite important in prevention of infection and there by malnutrition. According to the National Family Health Survey (NFHS) 2019-21, the 5<sup>th</sup> in the series India has seen no significant improvement in health and nutritional status among her population. The latest data shows, 7.7% of children are severely wasted, 19.3% are wasted and 35.5% are stunted. At the same time, 3.4% children are overweight which was 2.1% in NFHS-4 (fig 2). Anemia among children under-5 has become significantly worse with the current prevalence as 67.1% compared to 58.6% according to NFHS-4. 57% of women of reproductive age are anemic in the country.

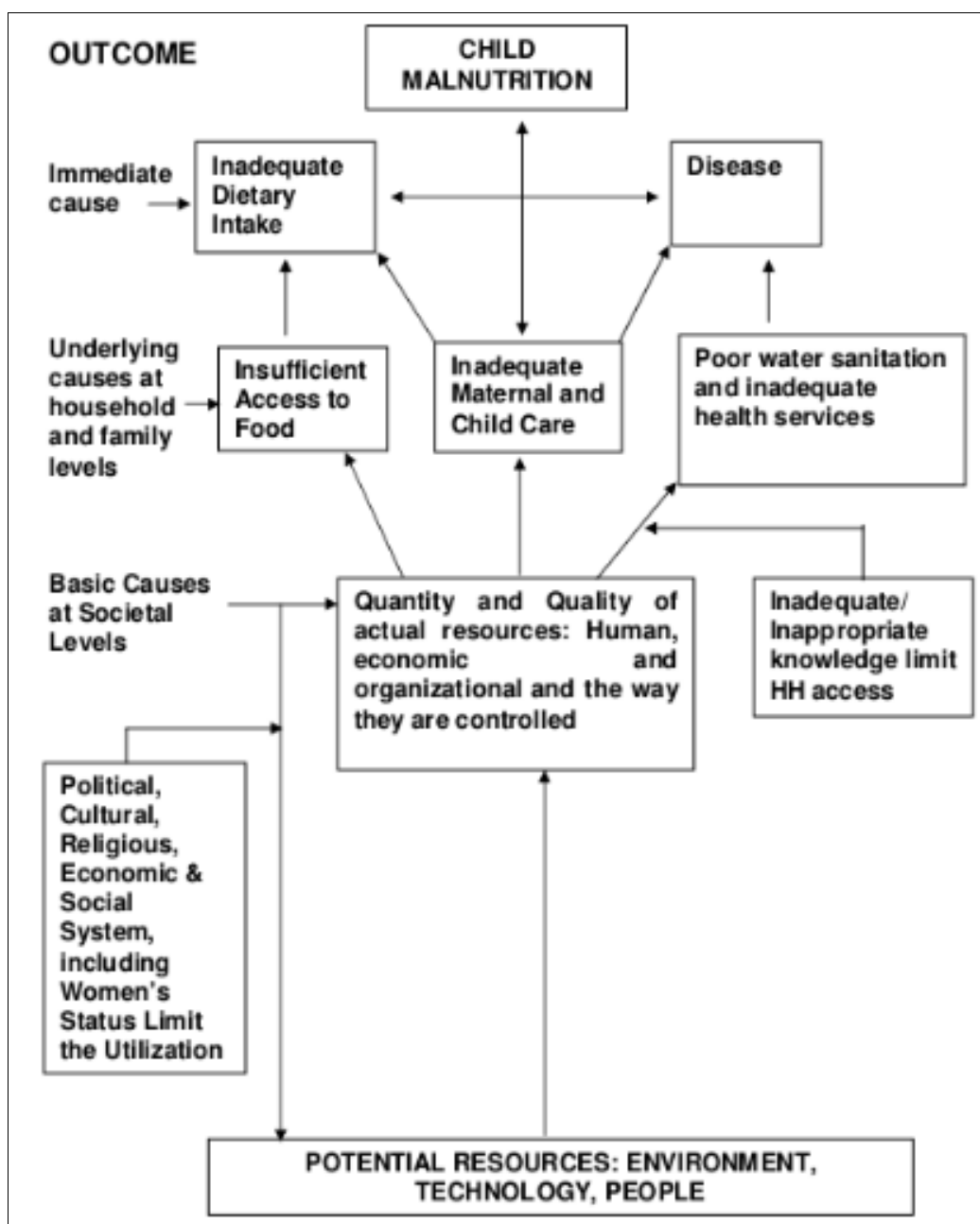
<https://www.orfonline.org/expert-speak/global-nutrition-report-2021/>



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**Fig 1:** Nutritional status of children under-5 years of age

## Causes of malnutrition



Source <https://vikaspedia.in/health/nutrition/malnutrition/malnutrition-causes-and-types>

Fig 2: Causes of child malnutrition can be summarised as below.

### Aim of the study

- To study the effect of economic status of the family on height and weight of 3-7 years old children.
- To study the effect of good habits on malnutrition among children.

### Hypothesis

- Malnutrition would be related to family income.
- Positive co-relation between income and Height-Weight of 3-7 years children.
- Malnutrition would be related to food habits and food like & dislike.

### Methodology

70 Primary children selected from Kharrati village in Gaya District, Bihar. Purposive sampling was used for sampling technique. Primary and secondary sources used for data collection.

### Primary sources

Self-made questionnaire schedule used for data collection. Schedule was prepared consisting two parts

- General Information.
- Specific Information regarding food habits and food like & dislike.

Anthropometric measurement was used for height-weight measurement for children. Weight of subject was recorded with help of weighting machine and height was measured with the help of measuring tape.

### Physical Examination

Each child in the study was subjected to a physical examination to identify and significant deficiency the eye and nail were examined to note any pal even test. Chi Square, Percentage method, Mean and SD were used for data analysis.

**Results and Discussion**

**Table 1:** Regarding General Information, N=70

Sr. No.	Variables	N	%
1	<b>Age</b>		
	* 3-5 years	30	40%
	*5-7 years	40	60%
2	<b>Sex</b>		
	*Boys	46	61.3%
	* Girls	24	34.6%
3	<b>Family structure</b>		
	* Single	10	20%
	* Joint	20	26.6%
	*Nuclear	40	53.5%
4	<b>Family Income</b>		
	*5000-15000	50	66.6%
	15000 above	20	69.3%
5	<b>Disease (Child)</b>		
	* Diabetic	2	2.66%
	* Other	68	97.33%
	6	Single Child	10
1-2 child		35	46.66%
2-3 child		20	26.66%
3-4 child		03	9.33%
4-5 child		02	4%

**Discussion**

Table No: 1.1 shows that out of 70 children, 30 children are in the age group of 3-5 years, while 40 children are in the age group of 5-7 years 46 children are boys while 24 children are girls. 10 children come from single family, 20 children come from Joint family and 40 children come from nuclear family. It seen the term of family income, there are 50 families with children whose monthly income is Rs. 5000/- 15000/ while the family monthly income of 25 children is above Rs 15000/. On the basis of data, it was seen that there were 2 children who were suffering from diabetes whereas other types of diseases were also found in 68 children. There were 10 children who were single children in their families. There were families of 35 children who had 1-2 children in their family. The number of children in a family of 20 children was 2-3. The number of children in a family of 7 children was 3-4, whereas there were only 3 children whose number of children in the family was 4-5.

**Specific information**

**Table 5:** (3-7 years) Questions related to food habits (Food Like and Dislike)

S.N.	Statements	Yes	No	Total	X2	DF	P
<b>A</b>	<b>I go to school taking breakfast</b>						
Income group	0-5000	30	40	70	6.62	DF=1	p<.01
	15000-above	50	20	70			
S.N.	Statements	Yes	No	Total	X2	DF	P
<b>B</b>	<b>Every day I drink milk.</b>						
Income group	0-5000	29	41	70	7.13	DF=1	p<.01
	15000-above	49	21	70			
S.N.	Statements	Yes	No	Total	X2	DF	P
<b>C</b>	<b>I carry my Tiffin</b>						
Income group	0-5000	10	60	70	7.62	DF=1	p<.01
	15000-above	50	20	70			
S.N.	Statements	Yes	No	Total	X2	DF	P
<b>D</b>	<b>I do not eat my Tiffin in the school</b>						
Income group	0-5000	60	10	70	8.61	DF=1	P<.01
	15000-above	29	41	70			
S.N.	Statements	Yes	No	Total	X2	DF	P
<b>E</b>	<b>I take meals after coming from the school</b>						
Income group	0-5000	40	30	70	9.12	DF=1	

**Table 2:** 3-5 years

Variable	Income	No	Mean	S.D		DF
Height	5000 IG	70	120.1	6.2	+4.12	148
	15000-above	70	123.2	6.7		p<.01

Table number 1.2 shows that in a family with an income of Rs. 5000/- the mean score of height is 120.1 and SD = 6.2 while Rs 15000 income group Mean (M) = 123.8, SD = 6.7 + value 4.12 and DF = 148<.01. It indicates that Rs. 15000/- income group had shown more height than Rs. 5000/- income group. So table 1.2 shows that income group of Rs 5000/- Rs. 15000/- above differ significantly on height in cm (+4.12), DF = 148, p<.01).

**Table 3:** (3-5 years)

Variable	Income	N	Mean	S.D		DF
Weight	5000 IG	70	22.2	2.3	+	
	15000- above	70	25.1	2.1		3.1 148
P Value						p<.01

Table number 1.3 shows that Rs 5000/- and Rs 15000/- income group differ significantly with respect to their sources of Mean weight (+3.1, DF =148, p<.01). The Mean of Rs15000/- IG (25.1) is more than Rs 5000/- IG (22.2) respectively. The result supports hypothesis.

**Table 4:** (5-7 years) Height & Weight

Variable	Income	N	Mean	S.D		DF
Height	5000	70	120.3	3.9	+	148
	15000 Above	70	125.0	2.95	2.73	P<.01
Weight	5000	70	24.1	3.21	3.42	148
	15000 Above	70	28.2	7.31		P<.01

Table number 1.4 shows that Rs 5000/- & Rs 15000/- above income group differ significantly with respect to their sources of Mean height 5-7 years (+273, DF =148, p<.01). The Mean of Rs 15000/-IG (125) is more than Rs 5000/-IG (120.3) respectively. The result support hypothesis. If seen in term of weight, Rs 5000/- & Rs 15000/- income group differ significantly with respect of their sources of mean weight (+3.42, DF =148, p<.01). The Mean of Rs 15000/ IG (28.2) are more than Rs 5000/ IG (24.1) respectively. The result supports hypothesis.

	15000-above	10	60	70		$p<.01$
S.N.	Statements	Yes	No	Total	X2	DF P
<b>F</b>	<b>Sleep with heaving milk</b>					
Income group	0-5000	08	62	70	10.00	DF=1 $p<.01$
	15000-above	50	20	70		
S.N.	Statements	Yes	No	Total	X2	DF P
<b>g</b>	<b>Consumption of eggs meat, fish, chocolate &amp; sweets daily</b>					
Income group	0-5000	17	53	70	10.11	DF=1 $p<.01$
	15000-above	40	30	70		
S.N.	Statements	Yes	No	Total	X2	DF P
<b>H</b>	<b>Consumption of pulses in food</b>					
Income group	0-5000	35	35	70	8.63	DF=1 $p<.01$
	15000-above	60	10	70		
<b>I</b>	<b>Consumption of fruits and green vegetables in food</b>					
Income group	0-5000	43	27	70	4.78	DF=1 $p<.01$
	15000-above	30	40	70		
S.N.	Statements	Yes	No	Total	X2	DF P
<b>J</b>	<b>Consumption of chips, magi &amp; cold drinks</b>					
Income group	0-5000	20	50	70	10.93	DF=1 $p<.01$
	15000-above	50	20	70		

## Discussion

- **I go to school taking breakfast:** On the basis of table no 2.1 (a) it was concluded that when children in the age group of 3-7 years asked about taking breakfast while going to school, it was found that only 30 children (Rs 5000/ income group) answered 'yes', while 40 children from the Rs 15000/ & above income group above agreed that they go to school in the morning after having breakfast. The  $x^2$  (6.62, DF = 1,  $p<.01$ ) obtained between the result of both found which shows that there is a significant differences between the result obtained in both income groups. The result is supported hypothesis.
- **Every day I drink milk:** On the basis of table no 2.b, it was concluded that children in the age group of 3-7 years were asked whether they consume milk daily, it was found that 29 children in Rs 5000/ income group answered 'yes', while 50 children in income group above Rs 15000/ admit that they consume milk daily. The X2 (7.13, DF = 1,  $p<.01$ ) obtained between the result of both found which shows that there is a significant differences between the results obtained in both income groups. The result is supported hypothesis.
- **I carry my Tiffin:** On the basis of table no 2(c), it was concluded that children in the age group of 3-7 years were asked whether they carried Tiffin every day, it was found that only 10 in Rs. 5000/ income group answered 'yes', while 60 children income group above Rs. 15000/ admit that they carried their Tiffin every day. The X2 (7.62, DF = 1,  $p<.01$ ) obtained between the result of both found which shows that, there is a significant differences between the result obtained in both income groups. The result is supported hypothesis.
- **I do not eat my Tiffin in the school:** On the basis of table no 2(d), it was concluded that children in the age group of 3-7 years were asked about they do not eat their Tiffin in the school every day, it was found that 60 children in Rs. 5000/ income group accepted 'yes', while 10 children income group above Rs 15000/ admit that they eat their Tiffin in the school every day. The X2 (8.61, DF = 1  $p<.01$ ) obtained between the result of both found which shows that there is a significant differences between the results obtained in both income groups. The result is supported hypothesis.
- **I take meals after coming from the school:** On the basis of table no 2 (e), it was concluded that children in

the age group of 3-7 years were asked about they take meals after coming from the school. The  $x^2$  (9.12, DF =1,  $p<.01$ ) obtain between the result of both found which shows that there is a significant differences between the results obtained in both income groups. The result is supported hypothesis.

- **Sleep with heaving milk:** On the basis of table no 2 (f), it was concluded that children in the age group of 3-7 years were asked about they Sleep with heaving milk The  $x^2$  (10.00, DF =1,  $p<.01$ ) obtain between the result of both found which shows that there is a significant differences between the results obtained in both income groups. The result is supported hypothesis.
- **Consumption of eggs meat, fish, chocolate & sweets daily:** On the basis of table no 2 (g), it was concluded that children in the age group of 3-7 years were asked about Consumption of eggs meat, fish, chocolate & sweets daily The X2 (10.11, DF =1,  $p<.01$ ) obtain between the result of both found which shows that there is a significant differences between the results obtained in both income groups. The result is supported hypothesis.
- **Consumption of pulses in food:** On the basis of table no 2 (h), it was concluded that children in the age group of 3-7 years were asked about Consumption of pulses in food. The  $x^2$  (8.63, DF =1,  $p<.01$ ) obtain between the result of both found which shows that there is a significant differences between the results obtained in both income groups. The result is supported hypothesis.
- **Consumption of fruits and green vegetables in food** On the basis of table no 2 (i), it was concluded that children in the age group of 3-7 years were asked **Consumption of fruits and green vegetables in food** The X2 (4.78, DF =1,  $p<.01$ ) obtain between the result of both found which shows that there is a significant differences between the results obtained in both income groups. The result is supported hypothesis.
- **Consumption of chips, magi & cold drinks:** On the basis of table no 2 (j), it was concluded that children in the age group of 3-7 years were asked about **Consumption of chips, magi & cold drinks:** The X2 (10.93, DF =1,  $p<.01$ ) obtain between the result of both found which shows that there is a significant differences between the results obtained in both income groups. The result is supported hypothesis.



### Conclusion

On the basis of the result, it was concluded that the result of malnutrition can be seen more in the group of low income group than in the higher income group correlation is found in the height, weight and food related behaviour of children of all income groups. In the cause of malnutrition in children is seen than food habits also have a significantly related. That is a positive correlation is found between food interest and food habits and malnutrition, which supports the hypothesis formulated in this research paper.

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