



Research Paper

## The Determinants of Malnutrition Among Children: Some Observations from Rural Kolhapur

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**ABSTRACT:** A number of factors affect child nutrition, either directly or indirectly. The most commonly cited factors are food availability and dietary intake, breastfeeding, prevalence of infectious and parasitic diseases, vitamin A supplementation, maternal care during pregnancy, water supply and sanitation, socio-economic status, and health-seeking behavior. Demographic characteristics such as the child's age and sex, birth intervals and mother's age at child-birth are also associated with child nutrition. Over half ( 54%) of all childhood deaths in India are related to malnutrition. Malnourished children are more likely to grow into malnourished adults who face increased risks of disease and death. Thus present research article intends to understand the socio-economic condition and factors associated with the malnutrition among the children.

**KEY WORDS:** Malnutrition, Nutrition, Undernutrition, Stunting

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### I. INTRODUCTION

A number of factors affect child nutrition, either directly or indirectly. The most commonly cited factors are food availability and dietary intake, breastfeeding, prevalence of infectious and parasitic diseases, vitamin A supplementation, maternal care during pregnancy, water supply and sanitation, socio-economic status, and health-seeking behavior. Demographic characteristics such as the child's age and sex, birth intervals, and mother's age at child-birth are also associated with child nutrition.

Malnutrition is a serious problem, especially for infants and young children. It reflects an imbalance of both macro and micro-nutrients that may be due to inappropriate intake and/or inefficient biological utilization due to the internal and external environment. Poor feeding practices during infancy and early childhood, resulting in malnutrition, contribute to impaired cognitive and social development, poor school performance, and reduced productivity in later life. Malnutrition, therefore, is a major threat to social and economic development as it is among the most serious obstacles to attaining and maintaining the health of this important age group. According to the United Nations Standing Committee on nutrition, 2006, undernutrition is the main threat to health and well-being not only in middle and low-income countries but also globally [ Global Hunger Index, GHI, 2010 ]. Akram: 155.

While commonly associated with poverty and a deprived environment, not all malnutrition results from a shortage of money. Children of middle and upper-income families may also be malnourished because of unwise food selections. Frequent fast food meals, snacking habits, concern over weight control, and skipped meals can seriously limit the variety of food choices, which, in turn, limit the nutrients ingested. [ibid: 155].

Over half ( 54%) of all childhood deaths in India are related to malnutrition. Nearly 30 per cent of the global childhood deaths attributed to stunting, severe wasting, and intrauterine growth restriction- low birth weight occur in India. In 2005-06, about 44 per cent of Indian children under 5 were underweight, and 48 per cent were stunted due to chronic malnutrition. Due to country's size, this means India is home to 42 per cent of the world's underweight children and 31 per cent of the world's stunted children. The proportion of stunted and undernourished children is 19-21 times higher than expected for a healthy, well-nourished population according to international child growth standards. ( ibid ).

High levels of child undernutrition are driven by the low nutritional and social status of women. Forty percent of women in India have low body mass, a factor in low-birth weight, Twenty eight per cent of children born in India are low-birth weight, indicating intrauterine undernutrition. Nearly half of low-birth weight babies

are currently stunted or underweight, compared to one-third of normal birth weight babies. Nearly 40 per cent of all low-birth weight babies in the world are born in India. Undernutrition indicators in India also follow lines of inequity- undernutrition is substantially higher in rural areas than in urban areas, and children from scheduled tribes have the poorest nutritional status on nearly every measure and the highest prevalence of wasting (28%) among under-five. (ibid 156).

## II. CONCEPT OF MALNUTRITION

According to WHO, Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients. The term malnutrition covers two broad groups of condition. One is 'undernutrition' - Which includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies or insufficiencies (a lack of important vitamins and minerals). The other is overweight, obesity and diet-related noncommunicable diseases (such as heart disease, stroke, diabetes, and cancer).

## III. METHODOLOGY

The present empirical study intends to understand the socio-economic condition of the family of malnourished children of ShahuwadiTahasil of Kolhapur district. The study deals with malnutrition among children under the age of five. To understand the nutritional status among children, three categories of anthropometric measurements are generally used. These categories are i) Height for age - Stunting, Weight for Height-Wasting and Weight for age- underweight. In the present study of malnutrition only one category/indicator of malnutrition has been used.

The universe for the present study constituted all malnourished children under the age of five of ShahuwadiTahasil. The list of malnourished children were collected from ICDP department of Shahuwadi Tahasil and the category of malnourished children was received from ICDP section, i.e., Wasting. Among Wasting Category the children were divided into two categories, they are Moderate acute malnutrition ( MAM), and Severe acute malnutrition ( SAM). For the present study, out of 210 respondents, researcher has selected 44 respondents from both the MAM and SAM category. These 44 respondents were selected from 12 beats of Shahuwadi Tahasil. The list of 210 respondents are based on 12 Beats in Tahasil. Out of these 12 beats total 24 respondents from 04 beats and seven ( 7) villages who were having moderate acute malnutrition ( MAM) have been selected by using purposive sampling method a form of non probability sampling method. Another 20 respondents from 8 beats and 16 villages, who were having severe acute malnutrition ( SAM) have been selected by using purposive sampling method. Thus out of 210 respondents, 24 respondents from MAM category and 20 respondents from SAM category, total 44 sampled respondents were selected for the present study.

## IV. REVIEW OF LITERATURE

**VijayashreeMathad and Shivprasad S [ 2013]** have analysed various studies conducted in India. It is revealed from their study that faulty feeding practices were common and most of the children's diet was not adequate for calories and proteins as per ICMR guidelines. No child was found to be overweight or obese. It is also observed that lower socio-economic condition, higher birth order, lower birth interval and faulty feeding habits were found to have adverse effect on nutritional status of children.

Among micronutrient deficiencies, nearly one-third of children were detected clinically to have anemia. Study have given some recommendations and these recommendations are, mothers should be advised to initiate breastfeeding within one hour of delivery. Socio-economic development among the rural masses needs to be ensured, which is the important factor to tackle malnutrition, mainly undernutrition.

**Ashish Talukdar ( 2014)**from Bangladesh had conducted a study on malnutrition among under five children. The study was conducted to uncover the risk factors associated with malnutrition among under five children in Bangladesh by analysing data from Bangladesh Demographic and Health Survey ( BDHS) I 2014.

It is revealed from the study that the prevalence of child malnutrition in Bangladesh is still high. Potential factors associated with child malnutrition are several, including parent's education level, wealth index, mother's BMI, antenatal care service during pregnancy and birth interval of children. The study strongly highlight the necessity of increasing parent's education level, improving mother's nutritional status and increasing antenatal care facilities during pregnancy in order to achieve better nutritional status among under five children in Bangladesh.

**Edward Olodara Ole Tankoi, Stephen AmoloAsito and Samson Adoka [2016]** have conducted a study of children aged 6-59 month in Trans- Mara East Sub County, Narok County, Kenya. A cross sectional descriptive Survey was conducted using a semi structured questionnaire.

It is revealed in the present study that 31%,22% and 8% of the children were stunted, underweight and wasted respectively. The study has demonstrated that poor livelihoods and low socio-economic status, high

levels of food insecurity and consumption of high energy dense food, poor access to water and environmental sanitation and health care services and poor child feeding practices in this settings are key determinants of malnutrition.

**Mohammad Mohseni, Aidin Aryankhesal, and Naser Kalantri [ 2017]** had conducted a systematic review of malnutrition and its associated factors among under five year old children of Iran. Total 36 articles were selected for the purpose. The study revealed that mother's education, fathers education, gender, birth weight were mentioned as the most important factors resulting in stunting. The study suggested that policies and programmes should focus on improvement of households living conditions such as mother and child nutrition.

## V. OBJECTIVES

The present study is based on the following objectives

- 1) To understand the socio-economic condition of the family of malnourished children.
- 2) To understand the determinants of malnutrition among children.
- 3)

## VI. SOCIO-ECONOMIC CONDITION OF THE FAMILY OF MALNOURISHED CHILDREN:

Socio-economic characteristics of the family of malnourished children has been analysed in terms of type of family of malnourished children, caste, religion, yearly family income, type of ration card.

**6.1 Type of Family:** Family background constitutes one of the most important social variables that influences on various aspects of overall health of a family. Therefore, the data regarding the type of respondents family were taken and it is presented in the table no.6.1 below.

**Table no.6.1**  
Distribution of Respondents According to Type of Family

No	Type of Family	Frequency	Percentage
1	Joint Family	27	61.36%
2	Nuclear Family	17	38.64%
	<b>Total</b>	<b>44</b>	<b>100.0</b>

The data presented in the table no.6.1 indicate that, an overwhelming majority ( 61 percent ) of the respondents were found to have hailed from joint family background and ( 39 percent ) of the respondents were found to have hailed from nuclear family background.

It is clearly revealed from the present study that majority of the respondents ( 61 percent ) hails from joint family.

**6.2 Caste Category:** It is important to understand the caste background of the respondents under the study. So the data regarding the caste category of the respondents were collected and presented in the table no.6.2 below.

**Table no.6.2**  
Distribution of Respondents According to Their Caste Category

No.	Caste Category	Frequency	Percentage
1	Maratha	18	40.90 %
2	Dhangar	07	15.90 %
3	Mahar	06	13.63 %
4	Mang	06	13.63 %
5	Lingayat	03	6.81 %
6	Other	04	9.09 %
	<b>Total</b>	<b>44</b>	<b>100.0</b>

The data presented in the table no.6.2 indicate that, a majority of the respondents ( 41 percent ) were found to belong to Maratha caste, another 16 percent of the respondents were found to belong to Dhangar category, still another 13 percent of the respondents were found to belong to Mahar and another 13 percent of the respondent were found to belong to Mang category, 7 percent of the respondents were found to belong to Lingayat caste and 9 percent of the respondent were found to belong to other caste category such as Ramoshi, Korvi, Parit, Kaikadi etc.

It is revealed from the present study that, a majority of the respondents (41 percent) belongs maratha caste category which is one of the dominant castes in Maharashtra. It also indicates that Maratha peoples representation in the population is higher in numbers, also majority of them are economically backward.

**6.3 Religion:** Let us now look at the religious background of the respondents of the present study. The data regarding the religious background of the respondents are presented in the table no.6.3 below.

**Table no.6.3**  
Distribution of Respondents According to Their Religion

No	Religion	Frequency	Percentage
1	Hindu	38	86.36 %
2	Bouddha	06	13.64 %
	<b>Total</b>	<b>92</b>	<b>100.0</b>

The data presented in the table no.6.3 indicate that, an overwhelming majority of the respondents (86 percent) were found to belong to Hindu religion, and (14 percent) of the respondents were found to belong to Bouddha religion.

It is revealed from the above table no.03 that, an overwhelming majority of the respondents were found to belong to Hindu religion in the context of the present study.

**6.4 Yearly Family Income:** While studying malnutrition among children, it is important to understand the income level of the family of the child. The data regarding the income level of the respondent family is presented in the table no.6.4 below.

**Table no.6.4**  
Distribution of Respondents According to Yearly Family Income

No.	Yearly Family Income	Frequency	Percentage
1.	20 Thousand	25	56.81 %
2.	50 Thousand	15	34.09 %
3.	51 thousand to 1 Lakh	02	4.54 %
4.	100001 to 200000	02	4.54 %
	<b>Total</b>	<b>44</b>	<b>100.0</b>

The data presented in the table no.6.4 indicate that, an overwhelming majority of the respondents (57 percent) were found to be having only 20 thousand yearly family income, another 34 percent of the respondents were found to be having 50 thousand yearly family income, other 4 percent of the respondents were found to be having yearly family income between 51 thousand to 1 lakh, and again another 4 percent of the respondents were found to be having yearly family income between 100001 lakh to 200000 lakh.

It is clearly revealed from the study that majority of the respondents were found to be having a very very low level of family income. Most of them seems to be economically poor which can not afford to keep good diet for their family members as well as children.

**6.5 Type of Ration Card:** To understand the economic status of the respondent's family the data about their ration card were collected and it was presented in the table no.6.5 below.

**Table no.6.5**  
Distribution of respondents according to their Ration Card

No.	Type of Ration Card	Frequency	Percentage
1	Orange	18	40.90 %
2	Yellow	24	54.54 %
3	White	02	4.54 %
	<b>Total</b>	<b>44</b>	<b>100.0</b>

The data presented in the table no.6.5 indicate that, majority of the respondents ( 55percent ) were found to have yellow ration card and ( 41 percent ) of the respondents were found to have orange ration card and only ( 4 percent ) of the respondents were found to have white ration card.

It is clearly revealed from the present study that an overwhelming majority of the respondents( 55percent) were having the ration cards which represent their lower economic status.

## **VII. DETERMINANTS OF MALNUTRITION AMONG CHILDREN.**

Number of determinants play important role as far as the health of a new born is considered. The present section deals with the factors associated with the malnourished child such as age of the child, sex of the respondent Child, age distance between two Children, quality of food intake by child, inadequate food intake by child etc. These determinants were assessed to understand the factors associated with the malnutrition among child.

**7.1 Age of the Child in Months:** Let us now look at the age of the malnourished child in months. The data regarding the age of the respondent child have been presented in the table no.7.1 below.

**Table no.7.1**  
Distribution of Respondents According to Age in Months

No.	Age group of the Respondent Child in Months	MAM Frequency	MAM Percentage	SAM Frequency	SAM Percentage
1	1 <sup>st</sup> month to 6 <sup>th</sup> month	11	25 %	02	4.54 %
2	7 <sup>th</sup> month to 12 <sup>th</sup> month	02	4.54 %	02	4.54 %
3	13 <sup>th</sup> month to 24 <sup>th</sup> month	03	6.81 %	05	11.36 %
4	25 <sup>th</sup> month to 60 <sup>th</sup> month	08	18.18 %	11	25 %
	<b>Total</b>	<b>24</b>	<b>100.0</b>	<b>20</b>	<b>100.0</b>

MAM- Moderate acute malnutrition, SAM- Severe acute malnutrition

The data presented in the table no.7.1 highlights that an overwhelming majority ( 25 percent in Sam Category and 18 percent in Mam category) of the respondents were found to be in the age group of 25<sup>th</sup> month to 60<sup>th</sup> month, another ( 5 percent in Sam category and 25 percent in Mam category ) of the respondents were found to be in the age group of 1<sup>st</sup> month to 6<sup>th</sup> month , while another ( 11 percent in Sam Category and 7 percent in Mam category ) were found to be in the age group of 13<sup>th</sup> month to 24<sup>th</sup> month, only ( 5 percent each from Sam and Mam category ) of the respondents were found to be in the age group of 7<sup>th</sup> month to 12<sup>th</sup> month.

It is revealed from the study that majority of respondents ( 25% and 18.18% = 43 percent) were found to be in the age group of 25<sup>th</sup> month to 60<sup>th</sup> month. It indicates that moderate and severe malnutrition is phenomenon which is mostly related with dietary and nutritional feeding immediately after the birth of a child and several socio-economic factors are responsible for the low nutritional diet resulting in malnutrition among the child.

**7.2 Sex of the Respondent Child:** Let us now look at the sex of the respondent child of the present study. The data regarding the sex of the respondent child is collected and it is presented in the table no.7.2 below.

**Table no.7.2**  
Distribution of Respondents According to their Sex

No	Sex of Respondents	MAM Frequency	MAM Percentage	SAM Frequency	SAM Percentage
1	Male	18	40.90 %	10	22.72 %
2	Female	06	13.63 %	10	22.72 %
	<b>Total</b>	<b>24</b>	<b>54.53 %</b>	<b>20</b>	<b>45.44 %</b>

MAM- Moderate acute malnutrition, SAM- Severe acute malnutrition

The above table no.7.2 indicates that majority of the respondents ( 41 percent from MAM category and 23 percent from SAM Category) were found to be male and remaining ( 14 percent from MAM category and 23 percent from SAM category ) were found to be female.

It is revealed from the present study that, majority 64 percent of the respondent children are found to be male child below the age of five as compared to female child.

**7.3 Age distance between two Children:** Age distance between the two children is also important which affects the overall health of a child at time of birth. Therefore, the data regarding the age gap between the two children were collected and it is presented in the table no.7.3 below.

**Table no.7.3**  
Age Distance between two Children

No	Age Distance Between Two Child	MAM	MAM	SAM	SAM	Total
1	Having only one Child	5	11.36	3	6.81	18.17
2	One Year	4	9.09	3	6.81	16.0
3	Two Years	10	22.7	10	22.7	45.4
4	Three Years	2	4.54	2	4.54	9.08
5	Four Years	2	4.54	2	4.54	9.08
6	14 Years	1	2.27	0	00	2.27
	<b>Total</b>	<b>24</b>	<b>54.5</b>	<b>20</b>	<b>45.5</b>	<b>100.00</b>

MAM- Moderate acute malnutrition, SAM- Severe acute malnutrition

The data presented in the table no.7.3 indicate that, in case of majority of the respondents both MAM and SAM (45.4 percent), the distance between the two children were found to be two years, in case of (18 percent) of the respondents ( 11 percent from MAM category and 7 percent from SAM Category), it was found that respondent was the only child for the parents, In case of 16 percent of the respondents ( 9 percent from MAM category and 7 percent from SAM category) the distance between the two child were found to be only

one year. In case of 9 percent of the respondents from both MAM and SAM Category the distance between the two children were found to be three and four years respectively. In case of 2 percent of the respondent from MAM category, the distance between the two children were found to be 14 years.

It is revealed from the study that in case of overwhelming majority of the respondents ( 45 + 16 percent ) the distance between the two children is less than three years. Proper age distance between two children is very important factor for the nourishment of a new born baby. In rural part of India we do not find the proper age distance between the two children which further leads to malnourishment of a child.

**7.4 The Quality of food Intake by Child:** While understanding the malnutrition among children, it is important to understand the quality of food intake child has. Therefore, a question was asked to a malnourished child i.e., What is the quality of food intake the child has? And the mothers opinion regarding it were collected and it is presented in the table no.7.4 below.

**Table no.7.4**  
The Quality of Food Intake by Child

No	Quality of food intake by child	MAM	MAM	SAM	SAM	Total
1	Good	14	31.81	05	11.36	43.17
2	Satisfactory	06	13.63	10	22.72	36.35
3	Bad	04	9.09	05	11.36	20.45
	<b>Total</b>	<b>24</b>	<b>54.53</b>	<b>20</b>	<b>45.44</b>	<b>100.00</b>

MAM- Moderate acute malnutrition, SAM- Severe acute malnutrition

The data presented in the table no.7.4 indicate that, majority of the respondents mother ( 43 percent ) opined that the quality of the food intake of their child was good, another 36 percent of the respondents mother opined that the quality of the food intake of their child was satisfactory, and still 21 percent of the respondents mother opined that the quality of the food intake of their child was very bad.

It is revealed from the present study that both the satisfactory kind of food intake and bad kind of food intake responsible for the condition of malnutrition among children.

**7.5 Inadequate Food Intake by Child:** To understand weather the child takes inadequate food intake or not, respondents' mothers opinion were collected and it is presented in the table no.7.5 below.

**Table no.7.5**  
Inadequate Food Intake by Child

No	Inadequate food intake by Child	MAM	MAM	SAM	SAM	Total
1	Yes	16	36.36	14	31.81	68.17
2	No	06	13.63	04	9.09	22.72
3	Sometimes	02	4.54	02	4.54	9.08
	<b>Total</b>	<b>24</b>	<b>54.63</b>	<b>20</b>	<b>45.44</b>	<b>100.00</b>

MAM- Moderate acute malnutrition, SAM- Severe acute malnutrition

The data presented in the table no.7.5 indicates that, an overwhelming majority of the respondents mother 68 percent (from both MAM and SAM category) were opined that their child takes inadequate food intake, in case of 23 percent of respondents mother (from both MAM and SAM category) were opined that their child do not take inadequate food intake, while in case of 9 percent of the respondents mother opined that their child sometimes take inadequate food intake.

It is clearly revealed from the study that in case of overwhelming majority of the respondents (68 percent) inadequate food intake found to be the reason for the malnutrition of the child.

## VIII CONCLUSION:

It is revealed from the study that socio-economic condition such as type of family, Yearly family income, type of ration card etc influences over the nutritional status of the malnourished children. Some reviews also reveals that parents education, faulty feeding habits, low birth weight were the factors responsible for the malnutrition among children. Low level of family income, lower economic status, absence of quality food intake, absence of ideal birth interval, inadequate food intake were found to be responsible for the malnutrition among children in the present study.

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