

Nutritional and Health Status of Preschool Children

By

Dr. Anita Awasthi

Assistant Professor, Department of Social Work, CSJM University, Kanpur

Mr. Satyendra S. Chauhan

Assistant Professor, Department of Social Work, CSJM University, Kanpur

Dr. Sandeep K. Singh

Corresponding Author: Director, School of Arts, Humanities and Social Sciences, CSJM University, Kanpur

Abstract

The purpose of this study is to determine the nutritional and health status of pre-school children aged two to five years who attend a range of preparatory schools in KANPUR's CHAUBEPUR neighborhood. The study was undertaken in a small number of selective preparatory institutions. A random sample of 150 children was chosen. The parents' information data was acquired via an interview and a questionnaire. The nutritional examination included anthropometric measures and clinical assessment. According to the study's findings, children given a sample ingest fewer calories than their recommended daily allowance. Protein consumption of pre-school children is above the recommended daily allowance, whereas fat intake of 2-3 year old children is beyond the recommended daily allowance. Children aged 2-3, 3-4, and 4-5 years receive less calcium than their daily recommended amount, whereas children at 4-5 years receive more calcium than their recommended daily allowance. Children in this sample ingest less iron than the daily recommended requirement.

Keywords: Nutritional status, weight, and height, as well as anthropometric measurements, dietary evaluation, and malnutrition, are all factors to consider.

Introduction

Early childhood development is crucial because it establishes the foundation for cognitive, social, emotional, physical, and motor development, as well as lifetime learning. Children's development is a national priority because they are our most valuable assets and future human resources, not because they are the most vulnerable. Our eleventh five-year plan (2002-2007) highlights the critical role of children in India's future.

Any country's future depends on its children. About a third of India's baby population lives in villages. It is critical to preserve their health and enhance their well-being by exercising and taking the utmost care in order to keep them healthy and prevent them from contracting deadly diseases. Regardless of education, status, or social class distinctions, mothers have always been the primary caregivers for their children. Malnutrition is becoming more widely recognized as a serious health issue in many underdeveloped countries. This has long-term negative implications for the youngster and has a negative impact on their development. Malnutrition renders a child more prone to infection, slows healing, and increases death.

Over the previous two decades, India's infant and child mortality rates have declined dramatically and persistently. The prevalence of dietary deficiency diseases has dramatically decreased. As a result, it is critical to pay more attention to catastrophe survivors' nutritional state. Certain international organization, alarming reports, which place India at the bottom of an arbitrary world development scale, have raised fears that India's children's nutritional status is deteriorating. Professionals that work with children must have an understanding of their eating habits and nutritional status. According to the NFHS, malnutrition is most prevalent in children between the ages of six and twelve months, with poor feeding practises throughout the first year of life being a significant predictor. Appropriate supplementary feeding comprises a series of techniques aimed at protecting breast milk consumption while also enhancing the quality and quantity of meals taken by youngsters. Infants between the ages of six and eleven months are especially vulnerable, as they are still learning to walk and require frequent and cautious feedings of soft foods. It is crucial to remember that these foods should be used in conjunction with breast milk, not in instead of it. Including fruits, vegetables, and animal products in your diet, as well as fortified foods and supplements, can help you consume more micronutrients. Food preferences and consumption patterns alter and shift over time. Because appetite is irregular during these sensitive years, we should maintain healthy nutrition and eating habits while taking these aspects in mind.

While the word "malnutrition" encompasses both undernutrition and overnutrition, India has focused on undernutrition. India has a high proportion of malnutrition children, according to international criteria [1–5]. India has the largest proportion of stunted children in the world. Preschoolers, in particular, require greater care because they not only have unique needs, but they also establish the foundation for a child's future growth and development. Preschool malnutrition is caused by a number of factors, including birth weight, family food access, safe drinking water, sanitation, and child and mother care.

Nearly 30% of children in India are born with a low birthweight [6]. Due to the increased risk of underweight mothers giving birth to low birthweight children, undernutrition during pregnancy has been highlighted as a major cause of low birthweight [7, 8]. Aside from poverty, which exacerbates maternal malnutrition, other sociocultural factors that contribute to low-birthweight children include early female marriage, adolescent pregnancy, beliefs, and taboos [5]. Growth and development are hampered through malnutrition, which frequently results in stunted growth and lasting physical damage [9].

1.1. Preschooler Nutrition

Preschool-age children (ages 0 to 6) are still in the process of building their eating habits and require encouragement to consume nutritious foods at meal and snack times. These children are enthusiastic in learning. The majority of the time, they will imitate the eating habits of grownups. They require close monitoring at lunch because they are still developing their chewing and swallowing abilities.

1. Maintain a consistent schedule for meals and snacks, and keep snacking to a minimum.
2. During lunch, poor eating habits should be avoided. Put eating at the dinner table ahead of playing video games. Switch off the television and put away cell phones and other electrical gadgets during mealtime. A child is more prone to choke if he or she is running around or playing while eating. Request that your child sit while he or she eats.
3. Continue to offer an array of dishes prepared in a number of ways. Keep in mind that your child will eventually be able to eat practically all of the things you serve.

4. Ensure that mealtimes are as enjoyable as possible for your family. Make no attempt to coerce your youngster into eating. Ensure that your youngster does not feel obligated to "clear" their plate after each meal. This may result in overeating, resulting in your youngster gaining an abnormal amount of weight. On some days, children will consume all of their meals, while on others, they may consume only a fraction of their meals. This is natural and typically results in a more uniform distribution over time.
 5. Allow your youngster to take only little amounts of liquids throughout the day, such as milk and juice. As a result, their hunger levels will drop during meals and snacks.
- Indicate someone who adheres to a healthy dietary plan. Preschoolers imitate their parents' actions. You cannot teach your child to eat healthfully if your own eating habits are unhealthy.

1.2. Healthy food choices

The MyPlate logo and other dietary recommendations are designed to help you and your baby eat healthy, nutritious meals. MyPlate can help you and your baby eat a variety of foods while living below the recommended calorie and fat intake of the age group. The MyPlate brand represents each of the five food groups, focusing on the nutritional value of the following foods:

- Grain.** Grain supplies are whole grain cereals such as wheat, rice, oats, corn, barley, or other grains. Wheat, brown rice, and oats are examples of whole grains. Make an effort to eat more grains.
- Vegetables.** When it comes to vegetables, variety is important. Vegetables are available in different colors. Dark green, red, and orange vegetables, legumes (such as peas and beans), and starchy vegetables are examples of this diet.
- Fruits.** All types of fruit, including 100% fruit juice, are included in the fruit category. Fresh, canned, frozen and dried fruits, as well as whole, chopped, and sorted, are all available. Children aged 1 to 3 should not drink more than four ounces of juice a day, and children ages four to six should not drink four to six ounces a day, according to the American Academy of Pediatrics.
- Milk.** Dairy products, as well as a wide variety of dairy-based dishes, are included in this diet. Low-fat or low-fat diets, as well as low-fat diets, should be given priority.
- Protein.** Protein should only be ingested in little amounts. Lean or low-fat meats and poultry should be preferred. On a regular basis, vary the amount of protein you consume. Increase your seafood, nuts, seeds, peas, and bean consumption.

1.3. Nutrition and activity tips

Here are some helpful hints:

1. By maintaining consistent daily meal and snack times, you can exert some control over when and where your children eat. Incorporate social engagement and healthy eating habits into your programme.
 2. Involve children in choosing and preparing food. By aiding kids in picking nutritious foods, you may educate them to make good choices.
- Choose foods which high in calcium, magnesium, potassium, and fibre wherever feasible.
3. Preschoolers do not require substantial amounts of food to thrive. At meals and snacks, small portions should be served. If you need assistance determining the proper serving size for your child, visit MyPlate.gov.in
 4. To maximize benefits, parents should limit their children's screen time to no more than one hour each day. Active activities should come before the game and action-based activities.

5. It takes at least 60 minutes of moderate to vigorous exercise for several days to stay healthy, as well as children and teens to maintain a healthy weight during puberty. Make work fun and enjoyable rather than hard work.
6. To avoid dehydration, motivate youngsters to drink fluids regularly and while doing activity, as well as numerous glasses of water or the other fluid afterwards.

1.4. Programs aimed at reducing the rising rate of malnourished children

The Indian government has launched a range of initiatives targeted at reducing the number of malnourished children in the country. Among these are the ICDS, the NCF, and the National Health Mission. [29] [30] Nutritional experts have recommended strategies for India to work towards nutritional security in order to address nutritional needs, particularly in the aftermath of the COVID-19 pandemic. [31] These measures include the establishment of community kitchens, the installation of pulses and breasts in the Community Distribution Program, and the continuation of the school lunch program.

1.4.1. The Midday meal scheme in Indian schools

On August 15, 1995, the Indian government introduced the Lunch Scheme, which has been in existence ever since. It provides freshly made food to millions of children in almost all government-run and government-supported schools.

In addition, the International Society for Krishna Consciousness (ISKCON) The International Food Relief Foundation, the Nalabothu Foundation, and the AkshayaPatra Foundation each run one of the world's largest NGO-run lunch programs, providing freshly prepared plant-based food. more than 1.3 million school children in the United States. government and government-assisted schools throughout India. Government funds pay for about half of the funding for these programs, and the rest comes from individual donations. Healthy Foods Annamrita and AkshayaPatra provide food that meets Indian food standards to combat malnutrition in Indian children. Food for Life Annamrita (FFLA) is a major affiliate of Food for Life Global, the world's largest nonprofit nutrition program with programs in more than 60 countries.

1.4.2. Scheme for the holistic development of children

The Indian government introduced the Integrated Child Development Services (ICDS) program in 1975, and it is still in operation today. The International Child Development Service (ICDS) has made a significant contribution to improving the health of mothers and children under the age of six by providing health and nutrition education, health services, extra food, and child education. The Indian Child Development Services (ICDS), which serves rural, urban, and international communities, is overseen by the Department of Women and Child Development. It has helped more than 70 million young children and 16 million pregnant and nursing women since its inception. [33]

The National Midday Meal Scheme, the National Rural Health Mission, and the Public Distribution System are some of the programs that help eliminate malnutrition (PDS). The biggest problem these programs and schemes are currently facing is finding out how they can improve their efficiency, effectiveness and accessibility. [23]

The Bihar Government's Department of Social Welfare established the Bal KuposhanMukta Bihar (BKMB) programme in 2014 with the goal of eradicating poverty in the state.

The advertising revolves around five "Cs":

- Collaboration, creativity, and communication are all important aspects of community.
- Changing behaviour requires communication.
- Increasing capacity.
- Access to material and intangible resources for the community.
- Participation in the community

The multilateral approach demonstrates how behavioral change (BCC) interactions with other segments of society can be used to address health conditions such as malnutrition. [34]

1.5. The National Children's Fund

The National Children's Fund was formed in 1979, following the United Kingdom's Charitable Endowment Fund Act of 1890, during International Year of the Child. This fund helps non-profit organisations that work to improve the lives of children.

1.6. National Plan of Action for Children

India has signed the International Conference on the Survival and Development of the Goals of the Child, which was established during the 1990 World Summit for Children. To assist in achieving these goals, the Department of Women and Children Development has established a National Children's Program. (NPAC). All government services / relevant departments, district governments / government units, and non-governmental organizations (NGOs) working with women and children have been requested to implement the Program of Action as soon as possible. These objectives are included in the International Development Plan. The Monitoring Committee, headed by the Secretary for Women and Children Development, is monitoring progress on the objectives of the National Program of Action. Representatives of each key minister and relevant departments form a party. In accordance with the National Plan of Action, over 15 state governments have established State Plans of Action, which include targets for 1995 and 2000, as well as activities for the holistic development of children and adolescents.

1.7. National Rural Health Mission

The National Rural Health Objective was established in India between 2005 and 2012 with the aim of "increasing access to and access to quality health care for all, especially the rural population and the poor, women, and children."

The following is a partial list of the mission's objectives:

- Reduce infant and maternal mortality rates (IMR and MMR), and infant mortality rates (NMR) (NMR)
- Identify, prevent, and control infectious and non-infectious diseases, as well as diseases that are endemic to a particular geographical area.
- Ensure that primary healthcare is integrated and coordinated.
- It is vital to ensure population stability, as well as gender and demographic balance, in order to accomplish sustainable development.
- Integrate indigenous health practises back into the AYUSH curriculum.

Finally, to encourage people to live healthy lifestyles. In order to achieve all of its goals, the mission has devised tactics and an action plan.

Review Of Related Literature

Deaton Angus and Dreze Jean (2008) investigate Indian cuisine, looking at both facts and how they are interpreted. Despite India's rapid economic growth, calorie consumption per capita has been declining for the past twenty-five years.

While the reduction has been more pronounced among the wealthiest households, it has affected households across the board in terms of total expenditure per capita. This paper summarises key facts concerning India's growth, poverty, and nutrition, considers puzzles, and constructs a preliminary storey that is compatible with the data. A loss in real income, an increase in the relative price of food, or a decrease in real income have no effect on calorie consumption.

When it comes to nutritional use, calorie intake is strictly prohibited; while calories are important, there are many sources of variation in the normal, flexible calorie requirements that should be used sparingly for important human segments. Following the findings of the study, the authors recommend a regular monitoring of India's healthy diet.

'Health Reform, People Policy, and Child Nutrition in China,' according to BredenKamp Caryn (2008). The research was published in the journal Pediatrics. It examines the factors that affect children's nutritional status in seven Chinese provinces throughout the 1990s, with an emphasis on the impact of two policy areas in particular.

The recommended model examines the real relationship between wealth and the state of healthy eating, and the extent to which the organization mediates through access to higher health care and having an older child, using basic squares and random features. In the selected model, access to high quality health care, as well as income, has been found to be highly correlated with nutritional status.

In 2007, Mukherjee Maj R. et al. Conduct a variety of research to assess the nutritional health of students at the Military Military School in Pune. Healthy eating habits are linked to many factors, including socioeconomic status, parental education, maternal status, and family size. The nutritional status of students was found to be closely related to their mothers' level of education, social status, and family size.

Sharma and colleagues (2006) are investigating the nutritional status of pre-school children in Raj Gond. In the waratola village of Madhya Pradesh, the healthy eating environment of 123 Raj Gond (Central Indian community) for preschool children (62 boys and 61 girls aged 1 to 5 years) was assessed as part of a separate health study. of healthy eating. . In addition to the WHO issue, the level of NCHs was used to assess the status of healthy anthropometric diets. The study included MUAC measurements, age weight, height of height indicators, and weight of height indicators. Compared to Gond and other non-national kindergarten children in Madhya Pradesh, Raj Gond 25 PreSchool children were malnourished, according to the results.

The nutritional quality of pre-school children from varied socioeconomic situations is investigated in relation to the impact of various diseases, according to Akhtar Muhammad S. and colleagues (2005). The researchers studied 100 pre-schoolers (85 of whom were malnourished and 15 of whom appeared to be healthy) (0-4 years). Participants were divided into four age groups (up to 23-12 months, 13-23 months, 24-35 months, and 36-48 months), with the youngest group being the youngest. Lower class (minimum monthly wages of Rs.

5000–15000), gender, and location of residence are three social economic status groups to pick from (either industrial or non-industrial). Children that were malnourished had a small mid-arm circumference and a low BMI %. They were also at an all-time low in extremely malnourished children.

Bhattacharya Jayanta and colleagues (2004) investigate the relationship between healthy eating status, poverty, and food insecurity among family members of different ages in a study in India. Although poverty predicts malnutrition in children under the age of five, food insecurity has little to do with predictability in this age group. The negative effects of malnutrition on school-age children are not related to poverty or malnutrition. Food insecurity and poverty have been associated with an increased risk of death in children and adolescents, but not in adults or the elderly. Researchers should continue to monitor the effects of nutrition on children and adolescents, based on these findings.

In the year 2001, BharyanaAlok commissioned a study on nutrition, health, and economic development. According to the policy, most developing countries have a variety of resources and infrastructure that hinders economic progress. Bhattacharya Jayanta and colleagues (2004) investigate the relationship between healthy eating conditions, poverty, and food insecurity among family members of different ages in Indian research. While poverty is a predictor of malnutrition in children under the age of 5, food insecurity had no extra predictive ability for this age group. Better hygiene and the use of infection-prevention vaccinations can help prevent nutritional loss. Investments in educational infrastructure, such as adult literacy programmes, help children's cognitive development. Long-term food and health policies will result in a well-trained workforce, allowing developing countries with limited natural resources to escape poverty.

Materials And Methods

The majority of current information on children's nutritional status in India focuses on aggregate age categories, like as preschool, school-age, and adolescence. While preschool children, defined as those aged 0 to 35 months, are the primary focus of our study, we believe that aggregative metrics obscure rather than expose more knowledge about their development. This is particularly true for this age range, as the factors affecting nutritional outcome measures vary dramatically throughout infancy and early childhood. Various factors including as mother health, nursing habits, weaning practises, and solid nutrition patterns all have a crucial impact at various periods of the early life cycle.

Only a more disaggregated analysis that examines the trends of relevant age groups can establish the possible impact of such factors. A questionnaire and an interview were created expressly to collect data. The study was carried out in Kanpur with 150 preschool children aged two to five who were enrolled in various Rajbagh Srinagar preparatory schools. There were 150 children in total, divided into 3 age groups: 2 to 3 years, 3 to 4 years, and 4 to 5 years (50 each). Everything was thoroughly checked and counted after acquiring the appropriate information.

Result

The health and nutritional status of pre-school children aged two to five was assessed at four preparatory schools in the Kanpur district of CHAUBEPUR as part of a

comprehensive research project. When it came to gathering information, the interview and questionnaire methods were used.

The findings revealed that:

Table 1 (a): Height Distribution on the Basis of Age and Sex (2-3 Years)

Height (cms)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
70-80	-	-	6	20	6	12
80-90	8	40	-	-	4	16
90-100	12	60	12	40	24	48
100-110	-	-	-	-	-	-
110-120	-	-	12	40	12	24
Total	20	100	30	100	50	100

Standard Height data from Swaminathan, Food and Nutrition vol.2, P.530 Table 3 An (ICMR)

Standard Height: 98 cm	Standard Height: 96 cm
Average Height: 90.5 cm	Average Height: 73.93 cm

Table 1(a) reveals that, when looking at males and females separately, I discovered that the majority of males are between 90 and 100 cms in height, and the majority of females are between 90 and 120 cms in height. When all of the data was combined, it was discovered that the majority of children are between the heights of 90 and 100 centimeters. When standard heights of males and females were compared, it was discovered that there was a difference between standard and average heights of both males and females.

Table 1 (b): Height Distribution on the basis of age and sex (3-4 years)

Height (cms)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
70-80	-	-	-	-	-	-
80-90	4	20	24	80	28	56
90-100	8	40	6	20	14	28
100-110	8	40	-	-	8	16
110-120	-	-	-	-	-	-
Total	20	100	30	100	50	100

Standard Height data from Swaminathan, Food and Nutrition vol.2, P.530 Table 3 An (ICMR)

Standard Height: 98.36 cm	Standard Height: 96.21 cm
Average Height: 96.2cm	Average Height: 86.8 cm

Separately, it was discovered that the majority of males are between 90 and 110 centimeters in height, while the majority of females are between 80 and 90 centimeters in height. When all of the data was combined, it was discovered that the majority of children are between the heights of 80 and 9 cms. When standard heights of males and females were compared, it was discovered that the difference between standard and average heights was greater in females.

Table 1 (c): Height Distribution on the Basis of Age and Sex (4-5 Years)

Height (cms)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
70-80	-	-	-	-	-	-
80-90	-	-	-	-	-	-
90-100	2	10	6	20	8	16
100-110	10	50	12	40	22	44
110-120	8	41	12	40	20	40
Total	20	100	30	100	50	100

Standard Height data from Swami Nathan, Food and Nutrition vol.2, P.530 Table 3 An (ICMR)

Standard Height: 104.7 cm	Standard Height: 104.1 cm
Average Height: 104.6 cm	Average Height: 103.6 cm

When looking at males and females separately, it was discovered that the majority of males occur in the height range of 100-110 cms and the majority of females occur in the height range of 110-120 cms. When all of the data was combined, it was discovered that the majority of children are between the heights of 100 and 110 cms. When the standard height of males and females were compared, it was discovered that there was a slight/not much difference between the standard and average height of both males and females.

Table 2 (a): Weight Distribution on the basis of Age and Sex (2-3 Years)

Height (cms)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
10-15	20	100	24	80	44	80
15-20	-	-	6	20	6	12
20-25	-	-	-	-	-	-
25-30	-	-	-	-	-	-
30-35	-	-	-	-	-	-
Total	20	100	30	100	50	100

Standard Height data from Swami Nathan, Food and Nutrition vol.2, P.530 Table 3 An (ICMR)

MALE	FEMALE
Standard Weight: 14 kg	Standard Weight: 13 kg
Average Weight: 13.3 kg	Average Weight: 12.46 kg

When separated into males and females, the sample population of children in the age range of 2-3 years is calculated. In my research, I discovered that the majority of males weigh between 10-15 kgs, and the majority of female children weigh between 10-15 kgs. When all of the data was combined, it was discovered that the majority of children fall into the 10-15 kg weight range. When standard weights of both males and females were compared, it was discovered that there was a slight / no difference between standard and average weights of both males and females.

Table 2 (b): Weight Distribution on the basis of age and sex (3-4 years)

Height (cms)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
10-15	-	-	6	40	6	24
15-20	12	60	6	40	12	48
20-25	8	40	3	20	7	28
25-30	-	-	-	-	-	-
30-35	-	-	-	-	-	-
Total	20	100	30	100	50	100

Standard Height data from Swami Nathan, Food and Nutrition vol.2, P.530 Table 3 An (ICMR)

MALE	FEMALE
Standard Weight: 14.78 kg	Standard Weight: 13.79 kg
Average Weight: 17.4 kg	Average Weight: 15.4 kg

When 3-4 year old children are separated into men and females, the following results are obtained: I noticed that the majority of male children weigh between 15-20 kilogrammes and the majority of female youngsters weigh between 10 and 20 kilogrammes during my investigation. When all of the data was compiled, it was shown that the majority of kids weigh between 15-20 kg. When the average weight of men and women is compared to normal weight, it is found that the normal weight of men and women is more than normal weight.

Table 2 (c): Weight Distribution on the Basis of Age and Sex (4-5 Years)

Height (cms)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
10-15	1	10	3	20	4	16
15-20	6	60	6	40	12	48
20-25	3	30	3	20	6	24
25-30	-	-	-	-	-	-
30-35	-	-	3	20	3	12
Total	20	100	30	100	50	100

Standard Height data from Swami Nathan, Food and Nutrition vol.2, P.530 Table 3 An (ICMR)

MALE	FEMALE
Standard Weight: 16.18 kg	Standard Weight: 15.85 kg
Average Weight: 16.5 kg	Average Weight: 18.6 kg

Sample if you separate out the population of 4-5 year old children by gender, you'll find that the majority of males weigh 15-20 kg and the majority of females weigh 15-20 kg. When all of the data was put together, it was discovered that the bulk of the children weigh between 15-20 kg. When standard weights of males and females were compared, it was discovered that there was a slight difference between standard and average weights of both males. Weight differences between males and females were discovered to be greater than those found among males.

Table 4 (a): Mid Term Circumstances Distribution on the Basis of Age and Sex 2-3 Years

Mid Arm Circumference (in cm)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
10-12	-	-	-	-	-	-
12-14	-	-	-	-	-	-
14-16	-	-	6	20	6	12
16-18	18	90	12	40	30	60
18-20	2	10	6	20	8	16
20-22	-	-	6	20	6	12
Total	20	100	30	100	50	100

According to the data presented in the table, the entire sample population, which includes both males and females, is healthy and does not suffer from any malnutrition.

Classification by Shakir and Morely

MUAC (cms)	Subjects	Category of malnutrition
14-16	12	Normal
16-18	60	Normal
18-20	16	Normal
20-22	12	Normal

Standard Mid Arm, Circumstance, data from Shant Ghosh (ICMR), Shakir & Morley

Mid Arm Circumference (in cm)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
10-12	-	-	6	20	6	12
12-14	4	20	-	-	4	8
14-16	2	10	12	40	14	28
16-18	14	70	12	40	26	52
18-20	-	-	-	-	-	-
20-22	-	-	-	-	-	-
Total	20	100	30	100	50	100

According to the data in the table, 20 percent of male children suffer from moderate malnourishment, while 20 percent of female children suffer from severe malnourishment. Aside from that, it was discovered that 12 percent of all children in this age group suffer from severe malnutrition, while 8 percent suffer from moderate malnutrition, according to Table 1.

Mid Arm Circumference Distribution on the Basis of Age and Sex (4-5 Years)

Mid Arm Circumference (in cm)	Age in Years				Total	
	Male		Female		No.	% age
	No.	% age	No.	% age		
10-12	-	-	6	20	6	12
12-14	-	-	6	20	6	12
14-16	2	10	12	40	14	28
16-18	12	60	6	20	18	36
18-20	6	30	-	-	6	12
20-22	-	-	-	-	-	-
Total	20	100	30	100	50	100

According to the data in the table, 20 percent of male children are malnourished on a moderate level, and 20 percent are malnourished on an extreme level. According to the data in Table 1, 12 percent of all children in this age group suffer from severe malnutrition, while another 12 percent suffer from moderate malnutrition.

MUAC (cms)	Subjects	Category of malnutrition
10-12	12	Severe malnourishment
12-14	12	Moderate malnourishment
14-16	28	Normal
16-18	36	Normal
18-20	12	Normal

*Standard mid , arm , circumference data from Shant Ghosh (ICMR), Shakir& Morley
Classification by Shakir and Morely*

MUAC (cms)	Subjects	Category of malnutrition
10-12	12	Severe malnourishment
12-14	8	Moderate malnourishment
14-16	28	Normal
16-18	52	Normal

Conclusion

The purpose of this study was to assess the health and nutritional status of Pre-school children 0 to 6 years old who attend various preparatory schools in the Kanpur district of CHAUBEPUR. For the study, a small number of preparatory schools were chosen. A random selection procedure was used to pick a group of 150 young people. The parents' information was gathered through an interview or a questionnaire. Anthropometric data and clinical examination were used to complete the nutritional evaluation approach. The children in the study consume fewer calories than the daily calorie need, according to the study's findings. Protein consumption exceeds the daily allowance for preschool children/sample, while fat consumption exceeds the daily allowance for children aged 2-3 years. Children between the ages of 2-3, 3-4, and 4-5 years receive less calcium than they require, whereas children between the ages of 4-5 years receive more calcium. A group of kids consumes less iron than is suggested for them on a regular basis.

We also noted that the weight and length / height of the dispersion in central India was much higher than in other countries. Moreover, for up to two years, the average Indian weight and height / height levels were much lower than world standards; however, growth rates reached, and even exceeded, international standards thereafter. This could mean that breastfeeding and breastfeeding are more important than solid foods in a baby's development. Because of the constant fluctuations in distribution, such processes, or at least their effects, are far more widespread than the social and economic divisions among the population.

Distribution measurements, on the other hand, may disclose far more information than is used to assess the significance of changes in interpretation. Several theories proposed in the literature on the effects of child malnutrition in India, some of which are noted in the Introduction, emphasize the importance of nutritional quality, as well as the impact of poverty and the distribution of home food. If these ideas are correct, we should expect a scattering of height / length and weight measurements that will increase over time.

According to this finding, India is predicted to have a greater proportion of overweight infants than the global norm, which may explain some of the recent increases in childhood obesity incidence. This study, however, made no mention of it. Nutritional and/or environmental factors begin to take precedence over inherited features, whether genetic or maternal, as one ages, and measures become more important.

References

- "Child Development Website". Source: Child Development programs site (2009). Archived from the original on 6 December 2008. Retrieved 14 March 2009. Programs to address malnutrition in India.
- "Domestic violence associated with chronic malnutrition in women and children in India". News. 22 April 2008. Retrieved 26 April 2018.
- "National Rural Health Mission" (PDF). Source: National Rural Health Mission (2005–2012). Retrieved 26 November 2009.
- Arokiasamy P, Jain K, Goli S, Pradhan J. Health inequalities among urban children in India: A comparative assessment of Empowered Action Group (EAG) and south Indian states. *Journal of Biosocial Science* 2013; 45:167-185
- Balarajan, Yarlini; Reich, Michael R. (1 July 2016). "Political economy of child nutrition policy: A qualitative study of India's Integrated Child Development Services (ICDS) scheme". *Food Policy*. 62: 88–98. doi:10.1016/j.foodpol.2016.05.001. ISSN 0306-9192.
- Bardosono S, Sastroamidjojo S, Lukito W (2007). Determinants of child malnutrition during the 1999 economic crisis in selected poor areas of Indonesia. *Asia Pac J Clin Nutr* 16:512-26.
- Bharati P, Pal M, Bharati S. How parent's education and working status affect the nutrition and immunization status of preschool children in India. *Asia Pac J Trop Med* 2008;1:49–60.
- Bharati S, Pal M, Bharati P. Determinants of nutritional status of pre-school children in India. *J Biosoc Sci* 2008;40:801–14.
- Black, R., Allen, L., Bhutta, Z., Caulfield, L., Onis, M. d., Ezzati, M., et al. (2008). Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences. *Lancet*, 371(9608), 243-260.
- Das S and H. Sahoo (2011). An Investigation into Factors Affecting Child Undernutrition in Madhya Pradesh, *Anthropologist*, 13(3): 227-233.
- Das S. (2013). Patterns of Social and Spatial Inequalities in Child Nutrition in Odisha, India, *Asian Profile*, 41(2):189-206.
- Ferreira, Marcela de Freitas; Moraes, Claudia Leite de; Reichenheim, Michael Eduardo; Verly Junior, Eliseu; Marques, Emanuele Souza; Salles-Costa, Rosana; Ferreira, Marcela de Freitas; Moraes, Claudia Leite de; Reichenheim, Michael Eduardo (January 2015). "Effect of physical intimate partner violence on body mass index in low-income adult women". *Cadernos de Saúde Pública*. 31 (1): 161–172. doi:10.1590/0102-311X00192113. ISSN 0102-311X. PMID 25715300.
- Jayashree, R. Gopinath & B. "Beyond food rations: Six ways India can ensure nutrition security for its most vulnerable people". *Scroll.in*. Retrieved 24 July 2020.
- Kanjilal, Barun; Mazumdar; Mukherjee; Rahman (January 2010). "Nutritional status of children in India: household socio-economic condition as the contextual determinant". *International Journal for Equity in Health*. 9: 19–31. doi:10.1186/1475-9276-9-19. PMC 2931515. PMID 20701758.

- Kulkarni, Vani S.; Kulkarni, Veena S.; Gaiha, Raghav (2017). "Double Burden of Malnutrition". *International Journal of Health Services*. 47 (1): 108–133. doi:10.1177/0020731416664666. PMID 27638762. S2CID 10303158.
- Meenakshi, J. V. (1 November 2016). "Trends and patterns in the triple burden of malnutrition in India" (PDF). *Agricultural Economics*. 47 (S1): 115–134. doi:10.1111/agec.12304. ISSN 1574-0862.
- National Family Health Survey- 3, 2005-06, International Institute for Population Sciences, Mumbai, Ministry of Health and Family Welfare, Government of India. Available at: http://rchiips.org/NFHS/factsheet_NFHS-3.shtml
- National Family Health Survey- 4, 2015-16, International Institute for Population Sciences, Mumbai, Ministry of Health and Family Welfare, Government of India. Available at: http://rchiips.org/NFHS/factsheet_NFHS-4.shtml. Accessed on 4 January 2018.
- Park K. Park's Textbook of preventive and social medicine. 22nd ed. Jabalpur: M/s BanarsidasBhanot publishers; 2013: 508-10, 528-30.
- Patil CR, Thakre SS, Khamgaonkar MB, Thakre S. Prevalence of stunting and wasting among Anganwadi school children of rural and urban area of Central India: A cross-sectional study. *Int J Med Sci Public Health*. 2017;6(2):413-7.
- Paul VK, Bagga A. Ghai Essential Pediatrics. 8th ed. New Delhi: CBS Publishers & Distributors Pvt Ltd; 2013: 11-34.
- Prajapati B et al., (2013). A study on availability of basic civic facilities in urban slum area of Bhuj, Gujart, India. *National Journal of Community Medicine*. 2 (3): 383-387.
- Prusty R.K. and Keshri K. (2013). Migration and Child Health: Exploring Nutrition and Immunization Gap among Migrants and Non-migrants in Urban India. 27th IUSSP International Population Conference, 2013, Busan, South Korea.
- Purohit L, Sahu P, Godale LB. Nutritional status of under- five children in a city of Maharashtra: a community based study. *Int J Community Med Public Health*. 2017;4(4):1171-8.
- Rao VG, Yadav R, Dolla CK, Kumar S, Bhondeley MK, Ukey M. Undernutrition and childhood morbidities among tribal preschool children. *Indian J Med Res*. 2005: 43-47.
- Sharma U, Yadav N, Mishra R, Mishra S, Tiwari P. Status of undernutrition among preschool children (4-6 years) of Allahabad district. *Indian J Prev Soc Med*. 2013;44(3-4):196-9.
- Shrutha SP, Vinit GBG, Giri KY and Alam S (2013). Feeding practices and early childhood caries: A CrossSectional Study of Preschool Children in Kanpur District, India. Hindwai Publishing Corporation.
- Somanwar BN, Phuljhale S. Assessment of nutritional status amongst bihor tribe childrens residing in Dharamjaigarh block of Raigarh district (C.G.), India. *Int J Res Med Sci*. 2015;3(10):2820-25.
- Srinivasa SB, Dnyaneshwar B, Ajay U. Anthropometric Measurement of Weight for Assessment of Nutritional Status of Anganwadi Children in Urban Mangalore - A Cross Sectional Study. *Anat Physiol*. 2017;7(3):259-63.
- Thow, Anne Marie; Kadiyala, Suneetha; Khandelwal, Shweta; Menon, Purnima; Downs, Shauna; Reddy, K. Srinath (June 2016). "Toward Food Policy for the Dual Burden of Malnutrition: An Exploratory Policy Space Analysis in India" (PDF). *Food and Nutrition Bulletin*. 37 (3): 261–274. doi:10.1177/0379572116653863. PMID 27312356. S2CID 24424765.
- UNICEF- India, Child Development and Nutrition, Women Nutrion. Available at: <http://unicef.in/Whatwedo/6/Women-Nutrition>. Accessed on 4 January 2018.

- Yach, Derek; Hawkes, Corinna; Gould, C. Linn; Hofman, Karen J. (2004). "Journal of the American Medical Association". *JAMA*. 291 (21): 2616–2622. doi:10.1001/jama.291.21.2616. PMID 15173153. The global burden of chronic diseases.
- Yadav SS, Yadav ST, Mishra P, Mittal A, Kumar R, Singh J. An Epidemiological Study of Malnutrition Among Under Five Children of Rural and Urban Haryana. *J ClinDiagnos Res*. 2016;10(2):7-10.
- Yount, Kathryn M.; Digirolamo, Ann M.; Ramakrishnan, Usha (1 May 2011). "Impacts of domestic violence on child growth and nutrition: A conceptual review of the pathways of influence". *Social Science & Medicine*. 72 (9): 1534–1554. doi:10.1016/j.socscimed.2011.02.042. ISSN 0277-9536. PMID 21492979.