Nutritional Deficiencies and their Impact on Child Health at Mirpur Slums in Dhaka

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Abstract

Child malnutrition is one of the most pressing public health problems in the low-income urban settlements. This article describes the magnitude, cause and consequences of this nutritional problem in the children of Mirpur slums of Dhaka in Bangladesh. The issue is made even worse by poverty, food insecurity, maternal illiteracy, poor access to health care, clean water, and sanitation to name a few. Families are resorting to high calorie low nutrient foods and children are now being exposed to protein-energy malnutrition (lack of protein and/or energy) and deficiencies of micronutrients (Iron, Vitamin A, Zinc, and Iodine). These all have strong links to stunting, wasting, poor cognitive development, weakened immunity and illness, perpetuating a cycle of ill health and poverty. This study adopts a mixed-methods approach which encompasses household surveys, parental interviews, focus group discussions, and field observations to assess the nutritional status of children under five and the social, economic and environmental risk factors associated with it. Results indicate alarming prevalence rates of stunting and underweight children, and approximately 88% of the analyzed population was classified as having an unhealthy BMI. Conditions such as diarrhea and respiratory infections impede the absorption of nutrients and worsen the state of malnutrition. The paper highlights the urgent need for an Integrated Program of Actions which goes beyond short-term food aid. There is a need for Community-Based Nutrition (CBN) programs along with maternal and child health services, food fortification, and policies that ensure the availability of safe water and sanitation. Such structural constraints can be lifted, and the intergenerational cycle of malnutrition broken, which would give a chance to children from the Mirpur slums to be healthier, attain superior cognitive abilities and have improved life prospects.

Keywords

Malnutrition, Child Health, Slums, Poverty, Nutrition Deficiency

1. Introduction

In relation to overall health issues across the globe, malnutrition and its effects are most predominantly showcased in the slums of urban settings. In the case of Mirpur Dhaka in Bangladesh, the problem is especially dire. The level of poverty, infrastructural deficits, health care barriers, and food scarcity are the elements of this scenario [1]. The effects of poverty-stricken areas severely impact the mental and physical well-being of the children due to prevalent malnutrition, ignorance, and other forms of poverty in the family [2].

Inadequate nutrition is classified as a lack of sufficient caloric intake and primary macronutrients, proteins, sufficient micronutrients, vitamins, and minerals critical for nutrition in the early stages of life in children, during the growth stages. Within slum areas, having access to food of an adequate, balanced diet is severely restricted. Vast number of people live on scanty, highly caloric and densely populating staple food such as rice, bread, and instant noodles which is shockingly devoid of micronutrients [3]. Challenges like poverty and lack of education, nowadays categorized as socio-economic issues, are among significant contributors of malnutrition during the early stages of life, which in turn aggravate the problem [4]

Thus, short-term nutritional aid requires a comprehensive perspective and a unified strategy to manage effectively the transition between hunger and structural adjustment in the Mirpur slums. To respond successfully, community health efforts, basic foods fortification, access to nutrition education, etc. would be required [5]. Besides care, mother and child health programs and other health services should also contribute to more accessible help in the prevention and treatment of malnutrition at an earlier stage. There should be food security and access, education which will all solve the complex problem of dietary malpractices among the humans that live in slums of Mirpur. The gains would also be welcomed to not only ensure the immediate health benefits of the children but, and perhaps it is more relevant, a better, fairer future of the next generation [3].

1.1 Objectives

To test this research purpose of studying the interactions between undernutrition and cause and effects of child health in the Mirpur localities of Dhaka with the perspective of evaluating key risk determinants, and possible avenues of

effective health and nutrition program interventions among the communities involved.

Specific Objectives

- To look into the prevalence of common diseases including physical growth and recurring infections.
- To determine the dietary and socioeconomic factors that contribute to children's nutritional deficits in the research area.
- To assess the employment status, education level and household income.
- To explore the way in which environmental factors such as overcrowding in housing, contaminated drinking water, and poor sanitation can contribute to health problems and malnutrition.

1.2 Background of the Research

Malnutrition remains a global health issue, particularly among the urban poor who survive in congested urban environments such as the Mirpur slums of Dhaka Bangladesh. These areas are associated with poverty, overcrowding, and; poor access to health services and or poor sanitation that among other factors compound the problem of malnutrition especially among children [6]. It has also become clear that malnutrition in terms of both under nutrition, and nutrient deficiencies in these settings have adverse effects on the health, growth, and development of children.

However, issues to do with cultural practices, knowledge or even knowledge of what constitutes adequacy in the provision of nutrients to children still poses a big challenge. For instance, where families are financially constrained and have a low level of nutrition knowledge, they are likely to choose to buy fill Foods such as rice ahead of nutrients dense foods like fruits and vegetables and foods high in proteins [7]. However, the size and duration of these measures are insufficient to respond to the problem’s scope and extent. The relationships between poverty, poor public amenities, and sociocultural status are well intertwined and stipulated by environmental and cultural Contexts that make it necessary to go for long-term interventions with bargaining aim at improving child’s nutrition and health [8].

Generally, in Bangladesh there has been a gradual shift at the national level in the nutrition scenario, but the situation in the slum area particularly the urban slum is still in an alarming position and Dhaka city is no exception. This makes the slum dwellers easily located around major cities, but yet they cannot easily access some of the basic amenities they need as the wealthy city people whom they are close to. This geography and economy deepen inequality because high density is not matched by quality healthcare, quality food or quality education [9].

The other main factor that has been constantly realized to have made a significant contribution to malnutrition is food insecurity. People living in Mirpur’s slums have little access to appropriate nutrition and a abound on such a restricted diet, a large majority of them consuming staple carbohydrates such as rice throughout the day. They eat what they can afford the bills of and what is easily accessible to them, not the quality of what they eat [10]. Such food is rare especially fresh fruits and vegetables and animal products which supply micronutrients and other compounds. As such, children in such slums are more vulnerable to vitamin A deficiency, iron deficiency anemia and other forms of micronutrient deficiencies. Moreover, there is ignorance in terms of the need to balance the nutrient intake put in by parents and care givers as they may not be aware on the need to introduce new foods or even comprehend that micronutrient supplements are necessary [11].

The purpose of this study is to examine causes, prevalence and outcomes of malnutrition and feasibility of current strategies for children in Mirpur slums. Because the research interests include aspects that have not received due attention by policymakers and practitioners, the study intends to come up with practical guidance for enhancing child health and nutrition in these unpopular slum areas in the future [12]. Consequently, any form of intervention should encompass this quadruple of food security, education, hygiene, health and economic improvement. Meet the needs of the children in the Mirpur slums and there is a chance to change fate of this vulnerable group by use appropriate strategy in order to avoid malnutrition and leading a healthy and wealthy life [13].

1.3 Rationale of the Study

Poor children are most at risk as they are able to access inadequate and poor-quality foods due to their social status living in slum areas within markets. The poverty, food insecurity, and malnutrition are indicators, which have increased in regions affected by increased slum. Children residing in urban slum areas, for instance, Mirpur in Dhaka, Bangladesh, are on the increase due to rapid urban expansion. These long and short-term consequences are commonly seen and affect children more critically since they are vulnerable to malnutrition at any one time [1].

The Mirpur area of Dhaka is particularly occupied by poorer families many of whom lack the basic required nutrients in their diets because of lack of means, inadequate practice of relevant technology, and poor knowledge. Lack of proper nutrition that includes mainly cheap-energy dense food but low nutrient dense foods contribute to the high rate of micronutrient malnutrition including iron, vitamin A, iodine. Such deficiencies lead to a number of health problems in children, most of which remain a neglected problem since areas lack adequate healthcare facilities as well as awareness about the problem [13].

As such, the main objectives of this research are: establishing the nutritional status of children in the Mirpur slum area and determining the common nutritional deficiencies among them. Thus, the discussion of the gaps as developed below will help to highlight areas that need to be addressed urgently in terms of policy and intervention particularly on the health of children. It will also inform health programs locally, dispute the social determinants of a healthy population and nutrition quality, and provide information that may catalyze further specific health care and community health promotion efforts [8].

Since nutrition is one of the determinants of well-being of children, the proposed study is crucial to addressing the needs of vulnerable children in such areas as urban slums in Mirpur and to offer alternatives to combat malnutrition, to support the health status and to get out of the circle of poverty. This study may help open the door to improved nutritional outcomes of young children residing in these slum areas and by implication, positively impact the prospects of these kids [14].

2. Research Methodology

The researchers use the qualitative research technique to examine how the kids in the Slums of Mirpur and families live. The most important research objective in this project is seeking the issues, struggles and ordinary events that negatively affect people residing in marginalized areas. As human experience is a multidimensional phenomenon that is hard to be measured intangibly, qualitative research methodology was chosen as the means of exploring the nature of the experience one has of the world, as well as, the experience a great number of people has of the world. This paper tries to examine qualitative data in order to obtain the whole picture of community life dynamics.

In this methodology, it is described what strategies, procedural methods and resources needed will be employed in collecting and interpreting both the traditional and alternative data sets on nutritional deficiencies in child health systems at Mirpur slums of Dhaka. The overall framework of the research process is determined in figure 1. The framework was done by the Qualitative and Quantitative data analysis, Primary and Secondary data analysis, FGDs, PRA methods, Household surveys and questionnaires, Case studies, KIIs, and Samplings.

Figure 1. Types of research

2.1 Sampling Procedures and Sample Size

Sampling procedures and sample size in this study were to gather a precise image of the nutritional deficiencies and its impact on the child health in Mirpur Slums of Dhaka. The sampling is the foundation of this research effort and the only approach to the sampling that has to be performed. The sampling techniques are employed due to the fact that the authoritatively research will be grounded on correct data. Under this research, precision data was also acquired through the sampling techniques.

In practice, sampling procedures are undertaken on the basis of the selection of subsets of individuals or units of the populations to generalize the results. Sampling comes in different forms, and each sampling has some pros and cons. The general flow of the sampling procedure is presented in Figure 2.

Figure 2. Types of sampling

In this research sampling method will be done in three types. Here are:

- Simple random sampling
- Purposive sampling

Secondly, some people were randomly selected first, then probability and random sampling was used to obtain some data. Secondly, the data was collected by using purposive sampling.

Step-1: Simple Random Sampling

This would be a sampling method that would provide every child of the Mirpur slums with an equal chance to participate in the study. This would mean that all the children in the targeted region would randomly be selected into a direct listing to eliminate selection bias. This sampling is depicted in figure 3.

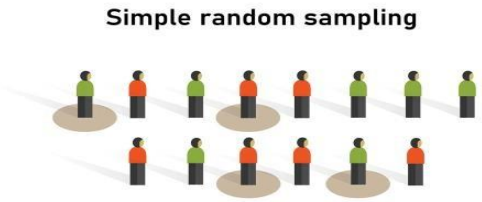

Figure 3. Simple random sampling

Step-2: Purposive Sampling

This method is rather purposive here, since researchers select the subjects that meet some qualification criteria that directly reflects the particularities of focus in the research topic itself, such as in the example of the research of children with nutritional deficiencies. This is a nice strategy to apply in the case of having to be sensitive to specific subgroups of concern. This sampling procedure is described in figure 4.

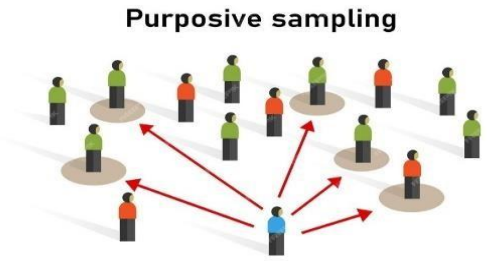

Figure 4. Purposive sampling

2.2 Sample Size

The study used 50 sampling size. Sample size contained already existed Household (Men and Women as well as Children). Simple random sampling will be chosen to select first person. The 2 methods of sampling when mapping all areas of nutrition deficiencies and their impact on the life of children will be Cluster and Purposive.

2.3 Data Collection Method

Systematic procedures used in data collection can help in data collection that are highly instrumental in the derivation of information that will help in addressing specific research questions. In the area of research in the field of public health and nutrition, selection of a suitable method of data collection is of the utmost importance as it enables the scientists to gather actual data on the population being studied. The research approaches that are well established can be categorized as qualitative data collection, quantitative data collection and mixed data collection strategies.

The study titled as Nutritional deficiencies and their effects on child health in Dhaka slums has a complete data collection process that enabled us to comprehend nutritional deficiencies and effects. The study requires a number of primary and secondary data in order to assess the extent of deficiencies and health consequences of the deficiencies to children. Primary data collection and secondary data collection were the two alternative processes of data collection employed in the study. These data collection methods are described in Figure 5.

Primary data were collected at household level. There are main data collection tools used:

- Interview
- Observation
- Household survey
- FGD
- KII

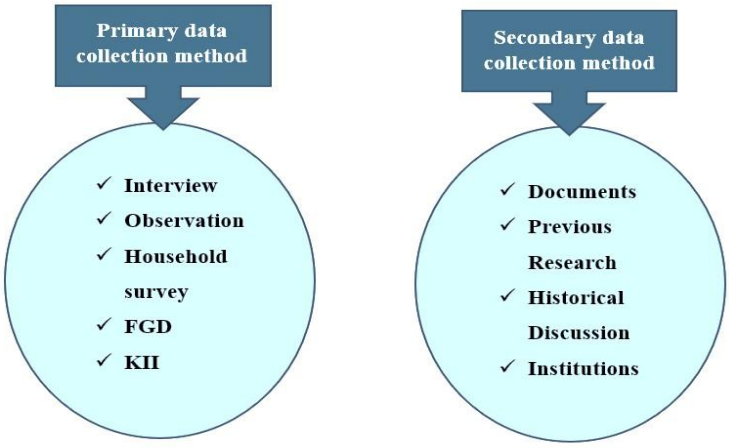

Figure 5. Data collection method

2.4 Interview

In the study "Nutritional Deficiencies and Their Impact on Child Health at Mirpur Slums in Dhaka", a qualitative interview method used to gain details on how people of the community live through their health problems and dimensionally. The semi structured interviews provide researchers the power to explore personal stories to and also ask questions for appropriate number of data collection.

2.5 Observation

In "Nutritional Deficiencies and Their Effect on Child Health in the Mirpur Slums of Dhaka," researchers observed the children in the designated area using observation as a methodology. Research investigator goes in the field to interact with the natural environment at the Mirpur slums and collect both quantitative and qualitative measurements on nutritional routines and health situation and socio-economic conditions. Regarding the exact theme of children nutrition, field researcher observed three values of child nutrition, which are food consumption patterns, kitchen practices, and household food accessibility. A portion of the physical examinations on children conducted during the study will involve the observation of indications of inadequate nutrition including weight loss and growth retardation.

Researchers observed the behavior of caregivers, caregivers feeding the children, and individual hygiene habits, and health, in relation to caregivers, and place cameras in to monitor caregivers and children, as caregivers perform their work. It enables the researchers to identify factors that can explain differences in nutritional status of children in relation

to the ease of access to clean water and the current sanitation and living conditions. Such that data honesty observed through discreet operations that will monitor natural community conditions and activities. The privacy and consent of the participants respected throughout the research activities.

2.6 Household Survey

Therefore, the research article entitled Nutritional Deficiencies and Its Effect on Child Health at Mirpur Slums in Dhaka is conducted using the survey research technique to systematically obtain specific reliable data concerning families residing in the slum regions of Mirpur. These studies will be questions that will be evaluated with respect to child nutrition status and dietary practices alongside the social-economic and environmental factors that affect child health.

In this research, cross-sectional methodology is followed in order to research children below the age of five years, and the aim is to research the age group that is most susceptible to nutritional deficiencies. Households based in all parts of the slum are to be identified through the use of a multistage sampling technique. This study would present these results which would serve as valuable evidence of the method of developing intervention plans to increase child nutrition and wellbeing in slum areas of Mirpur.

2.7 Focused Group Discussion

It is in this regard that the focus group discussion (FGD) is the most central of all the quantitative research methods since it helps an in depth analysis of the nutritional deficiencies and their health implications over children living in Mirpur slums of Dhaka. The focus of these discussions revolves around the subjects of study that encompass fewest direct-impacted individuals and indirect-impacted stakeholders: in other words, mothers, caregivers, and community health workers and other stakeholders of concern to small groups. Members of the community cannot have difficulty accessing the convenient locations where sessions of the social scientists are conducted to offer comfort to the participants and genuine interaction. This kind of research considers a period of time of 1-2 hours together in the presence of each other in the company to elucidate the information towards their testimonies. The work practices are informed by the consideration of the culture with the aim of making spaces where the marginalized groups can engage in to their full. Audio tapes are taped before the discussions are taped and extensive field notes are taken where participant gestures are also noted along with group interactions. Thematization, according to which the identified gaps and the effects they have on child health are presented by their frequency in the transcribing of the research data. Qualitative method was employed to get in-depth data, and such data could be utilized by researchers in coming up with appropriate methods of enhancing nutrition and wellness advice to the children of the slums of Mirpur. This process of focus group discussion is shown in figure 6.

Figure 6. FGD

2.8 Key Informant Interview

The interviews are carried out in the form of an interview guide comprising open ended questions that allow the researchers to explore various dimensions of child health as well as nutritional wellbeing simultaneously. In the interview guide there is also looked into whether professional services have professional services or family habits of dietary family that is including the cultural values and the challenges and health deviations of nutritional access for kids. During the interview process we will maintain the freedom to allow the primary information sources to build on important matters they have in common.

2.9 Secondary Data Collection

Existing data collection methods which are known as secondary data collections used to research on these topics. In the study “Nutritional Deficiencies and Their Impact on Child Health at Mirpur Slums in Dhaka”, much of the data comes from existing sources and provides important understanding of the problem being studied.

It combines disparate sources of data, e.g. institutional records as well as previous research, historical documents etc. Public health departments and local NGOs and international organizations such as the WHO and UNICEF have detailed records of child health and living conditions and nutrition. These sources of data provide data suitable for showing

directional patterns as well for degree and change in the nutritional deficits during particular periods. Foundations to understand solutions used in similar cases are established by research studies from the previous research investigations. From Mirpur slums and Dhaka, development of the systematic factors of dietary concerns is assessed in the set of records of historical.

2.10 Study Area

Mirpur is one of the territorial areas of Dhaka City because it is an administrative unit of the municipalities of Dhaka City. It was founded in 1962 with its northeast borders being the Dhaka city. The total population of the whole allocated to 58.66 square kilometers is 632, 664 people, which equals 58.66 square kilometers. It stretches to the east and west Mirpur boroughs in a fan-shaped format to Mohammadpur, Kafrul; northwards to Pallabi and south-westwards to Saidpur Bazar. It is an area that is considered as a multi-diverse cultural field of interest as well as historical sites. Mirpur is divided into different parts where Mirpur 1, Mirpur 2, Mirpur 10, Mirpur 12, Mirpur DOHS (Dhaka Cantonment) are the parts of Mirpur. Figure 7 describes the map of Greater Mirpur.

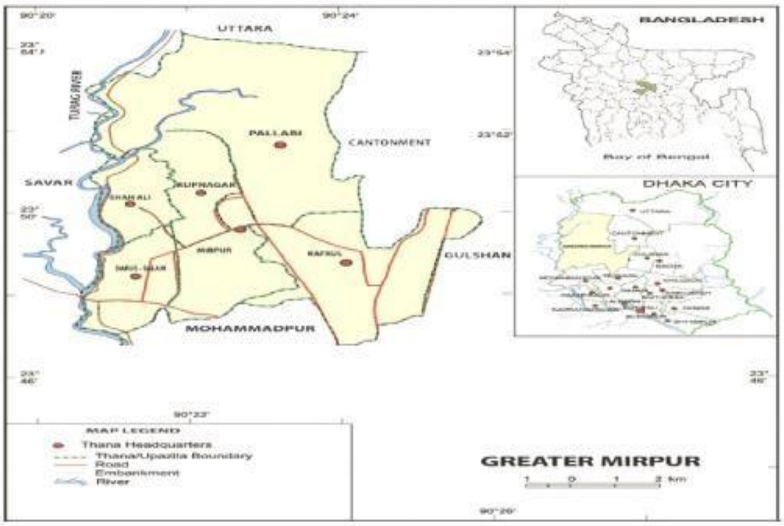

Figure 7. Mirpur area map

Bauniabadh slum as shown in Figure 8 is one of the most crowded and extensive slum settlements within the Mirpur-11 locality in Dhaka city. It is mostly inhabited by rural migrants and is home to tens of thousands of people who employed in clothing industries, rickshaw drivers, street sellers or household workers. It covers several areas like Mirpur-1, Mirpur-2, Mirpur-10, Mirpur-12 and Mirpur DOHS (Dhaka Cantonment) and houses thousands of families with very difficult living conditions. This is one of the old slums in Mirpur-14 of Dhaka, which houses large numbers of low-income families in search of employment. Nonetheless, Figure 8 indicates that Figure 8 severely addresses housing, sanitation, healthcare, and other economic concerns of the slum despite the efforts of the government and NGOs.

Figure 8. Bauniabadh slum

3. Findings and Discussion

3.1 Physical Growth and Recurring Infections

Children who live in the slums of Mirpur Dhaka experience multiple health problems because they do not have adequate clean facilities and sufficient food along with restricted medical care. Researchers studied the number of

commonly occurring diseases together with growth limitations and recurrent infections in these children. The results of research indicate that there is an urgent need to implement collaborative community-based interventions that will address children living in Mirpur slums with nutritional issues. The development of strategic policies along with local programs addressing malnutrition creates significant positive effects on the physical health of children and overall health.

3.2 Common Diseases in Mirpur Slums

Figure 9 depicts various infectious and non-communicable diseases that have not been addressed in the residents of Mirpur slums because the residents live in abject conditions, unhygienic environment, and with poor accessibility to medical services. The latter conditions are disproportionate to the slum children in Mirpur as opposed to their counterparts. Examples of common diseases reported in Mirpur residents are pneumonia, bronchitis and Tuberculosis that occur due to overpopulation, housing and poor quality of air. Poor sanitation, mainly through unclean water, leads to diseases of the gastrointestinal tract in the region. Shortage of fresh water and hygiene also contributes to the transmission of skin diseases like fungus, scabs, and eczematous. Also, there are high rates of malnutrition diseases such as anemia, rickets and stunt growth owing to the lack of nutrients ingested.

Based on the gathered data of field work in Mirpur, Dhaka, the chart shows the prevalence of diseases that are frequent among slum kids.

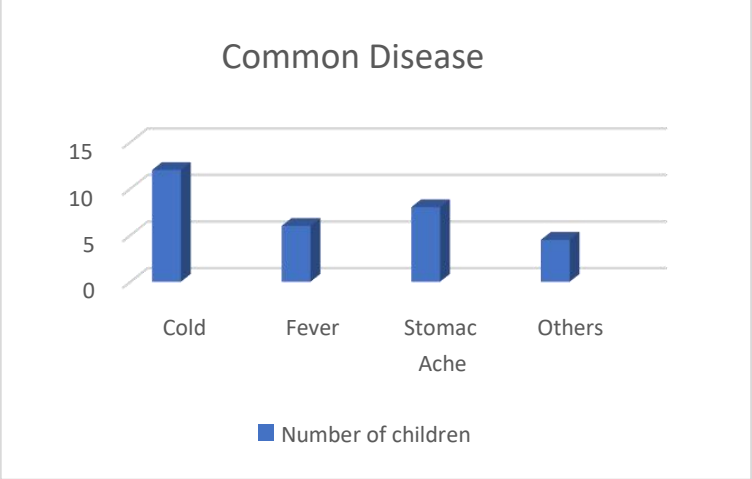

Figure 9. Common disease

3.3 Physical Growth and Malnutrition

The condition of malnutrition creates serious physical growth problems for children who live in Mirpur slums. The physical development of slum children suffers severely from both malnutrition persistently and several economic and social influence factors. Children who suffer from stunted growth demonstrate the effects of long-term deprivation in nutrition as well as inadequate health conditions. The high prevalence of underweight in children occurs because they consume insufficient calories and protein and this results in their muscles wasting and slower physical development. Young children develop wasting because they have low weight-for-height ratios caused by ongoing infections together with insufficient diet. Poor early-life nutrition leads to long term health effects that raise adults' chances of developing diabetic conditions and cardiovascular diseases because their childhood growth remained insufficient.

Multiple conditions that lead to inadequate nutrition and food insecurity along with repeated infections cause this issue. Key observations include:

3.4 Health Condition

BMI index:

Figure 10 shows Health condition depicts a study where 30 children were used as the respondents and a column chart of the health conditions according to the Body Mass Index (BMI) standards on a vertical bar chart. The dataset indicated that a BMI of 3 is associated with 10 percent of children in the category of healthy. The fact that the score is 26 states that 87.7 percent of the children are unhealthy. Only a single instance of overweight was also found by the research study on the 30 children surveyed; this indicates that overweightness is uncommon in slum areas.

The study utilized BMI as its measurement method because of time limitations together with instrument constraints. The BMI calculation provides an overall perspective of health standing but it lacks complete developmental data coverage. The mathematical method to determine BMI consists of this relationship:

BMI = weight (kg) / height (m)^2.

The research data shows that unhealthy health conditions affect 87.7% of the children who primarily struggle with being underweight. They do not weight in proportion to their height thus showing substantial numbers of underweight children who suffer from malnutrition.

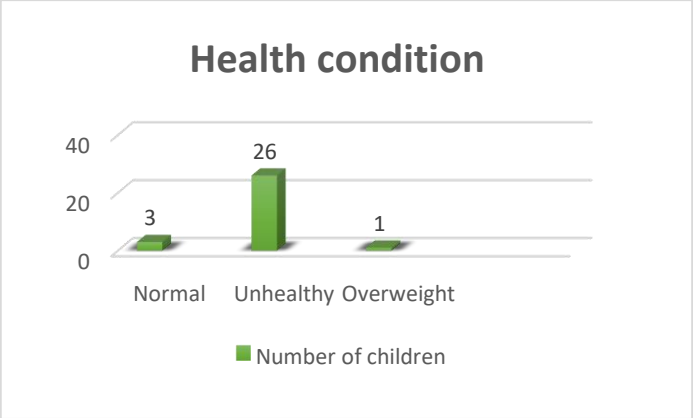

Figure 10. Health condition

3.5 Average Height Ranges

The research aims to evaluate a child's height development appropriateness by using this table of charts. The table operates as an international standard for child growth measurement worldwide.

BOYS		AGE	GIRLS	
Weight(Kg)	Height(Cm)		Weight (Kg)	Height (Cm)
3.3	50.5	At the time of birth	3.2	49.9
6	61.1	3 months	5.4	60.2
7.8	67.8	6 months	7.2	66.6
9.2	72.3	9 months	8.6	71.1
10.2	76.1	1 year	9.5	75
12.3	85.6	2 year	11.8	84.5
14.6	94.9	3 year	14.1	93.9
16.7	102.9	4 year	16.0	101.6
18.7	109.9	5 year	17.7	108.4
20.7	116.1	6 year	19.5	114.6
22.9	121.7	7 year	21.8	120.6
25.3	127	8 year	24.8	126.4
28.1	132.2	9 year	28.5	132.2
31.4	137.5	10 year	32.5	138.3
32.2	140	11 year	33.7	142
37	147	12 year	38.7	148

Figure 11. Height and weight Ranges

According to the field, the height of children is presented by the chart:

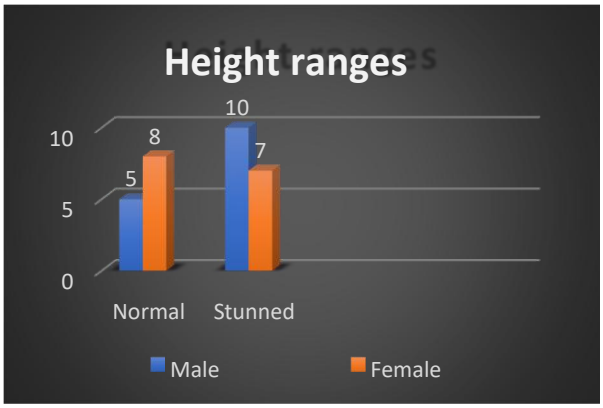

Figure 12. Height ranges

Figure 11: Height and weight Ranges and Figure 12: Height ranges depict a research study whose objective, through a table of charts, would determine the effectiveness of the child in terms of height development as an international standard of child growth in the world. The study involved 30 children living in Mirpur slum. The research indicates that out of the enrolled children, normal height was seen in five male children (33.3 percentage) and eight female children (53.3 percentage) and ten male children (66.7 percentage) and seven female children (46.7 percentage) exhibited stunted growth patterns. The appearance of this pictorial presentation is barred in blue and orange to show the males

and females respectively and child populations within each height division. A high percentage of children exhibited poor growth with 10 per 15 males and 7 per 15 females in the measurement group falling within this sign. A higher number of female children demonstrated normal measured heights as compared to males, but more male children were stunted than female children in the study. As indicated in this sample, one of the biggest health problems impacting the children is stunting.

3.6 Recurring Infections and Their Impact

The repeated infections present major health risks in Mirpur slum areas because these infections cause health problems that worsen over time. The repeated infections serve as a major problem because they continue to block both growth and health advancement of these children. Several respiratory diseases aggravate the levels of nutritional deficiency and develop developed health issues. There is critical dehydration and electrolyte disturbances to the body due to successive incidences of diarrhea that causes growth and learning development problems. Parasitism causes anemia symptoms due to the long-term undernutrition of children and the intestinal worms.

The findings of the research prove that there is a critical health issue in slum children who live in Mirpur Dhaka. The malaise of high morbidity and poor physical development and frequent infections is a complex of issues caused by inadequate access to healthcare and inappropriate sanitation services and poverty situation. The interventions required must focus on three spheres, namely, improved nutrition programs, increased sanitation facilities, and health systems available to the vulnerable population. Human body acquires the long-term respiratory disease since the individuals are constantly exposed to dangerous pollutants and dirty living conditions. Frequent instances of diarrhea lead to destruction of the immune system that increases malnourishment among children. Due to poor sanitation, hookworm and roundworm infections are still rampant in the population. The overcrowding of individuals within the same space and poor ventilation lead to further transmission of tuberculosis in addition to encouraging recurrent tuberculosis among populations that are susceptible.

3.7 Poverty and Low Income

Table 1 shows the Income Range of the families explains that financial problems have the highest influence on malnourishment among children in Mirpur slums. Extreme poor people cannot afford to purchase healthy food and instead use low-nutrition foodstuffs. The lack of money does not give families access to foods that are rich in proteins, dairy, fresh vegetables and fruits because of their high costs resulting to deficiencies of proteins, calcium, iron and vitamins.

Mirpur slum dwellers in Dhaka are highly affected by nutritional deficiencies as a result of poverty and unavailability of funds. Poverty is a problem that cannot be attributed to economic problems alone but also denies residents of fundamental facilities such as nutritious food, health care, clean water, and proper housing. The poor people are caught in a loop of financial problems and low payments restrict their opportunities and compel them to survive daily.

The worst effects of such eating habits are imposed on the developmental lives of children in the underprivileged families. This decreases their ability to resist micronutrient deficiencies and undernutrition as they consume low amounts of healthy food, which reduces their resistance against health problems like undergrowth, developmental delays, fatal anemia and lack of vitamins, and developmental delay.

The result of low income and poverty are social marginalization whereby families are deprived of improved housing, education and other social services. Poor housing, overcrowding and sanitation exposes them to diseases such as diarrhea and lung infections that hamper the absorption of nutrients and worsen the health conditions of poor children.

The 70-percent of total households are those that earn less than 10,000 BDT month and therefore, they can scarcely afford regular food. Food costs take center stage in the household budgets and this has resulted in consumption of foods with low prices. Low healthcare spending means that there is less access to medical care due to nutrition related problems. Better healthcare and subsistence facilities are availed to adults with high incomes, who use fewer resources in food.

Table 1. Income Range of the families

Income Range (BDT per Month)	Percentage of Households	Primary Income Source
Less than 5,000 BDT	25 %	Begging, informal labor, waste picking
5,000 - 10,000 BDT	45 %	Rickshaw pulling, day labor, domestic work
10,000 - 15,000 BDT	20 %	Small businesses, factory work, garment sector
15,000 - 20,000 BDT	10 %	Transportation, retail work

3.8 Food Insecurity

Combined with financial issues that many families in Mirpur slums cannot afford to buy relevant safe and healthy food they need to survive. Spending much time without proper meals and scarce food results in children becoming undernourished and their growth is stunted as well as has weak immunity and is slow to develop.

The food insecurity of the citizens of Metropolitan Mirpur slum is the primary factor that leads to childhood nutrient deficiency and morbidity. People live with this condition without having access to nutritious food that is associated with proper health and normal growth and development. A poor family that lives in the slums is mostly subjected to food insecurity as they are unable to provide their children with sufficient nutritious food due to the lack of financial means to do so.

The dwellers of South Asian slums prioritize their daily survival instead of consuming nutritious food though it compromises their minimum sustenance requirements to survive. Families are unable to obtain adequate food to keep themselves going because their income is no longer dependable, meaning that their access to nutritious food is constrained even when food supply is achieved. Even with the poor financial choice families make low-priced calories foods that have plenty of sugar fat starch but have no essential nutrients that a child needs to grow properly. In such children, an unbalanced diet and inadequate supply of nutrients develop.

Poor food security is even aggravated by the challenges people experience trying to access clean foods in the overcrowded and unhygienic slum areas of Mirpur. Due to lacking basic sanitation systems and safe storage facilities in the form of proper infrastructure, family food storage and hygienic preparation becomes complex. Gastrointestinal diseases and diarrhea are caused by water-borne diseases and unsanitary cooking practices and further contribute to malnutrition issues that are already present. The extra morbidity adds another barrier to children absorbing the most vital nutrients that strengthens their state of chronic undernourishment.

Food aid coupled with charity program offers temporary solutions to slum families who need permanent solutions to their food crisis. These are some of the limited assistance programs that provide poor food support with inadequate nutritional levels that do not meet the dietary requirements of children at their developmental age. The reliance on external assistance denies families the means of learning how to overcome their food insecurity without external assistance.

Lack of food has both physical and emotionally and psychologically harmful impacts on families. Anxious and stressed mothers often find it very difficult to feed their children and hence less knowledge on how to feed their families well. The stress which food insecurity causes often prevents mothers to provide quality care and healthy meals to their children.

3.9 Parental Education and Awareness

Poor education of slum parents affects their understanding of what nutrition and how important diet is in the development of young children. Parents who are not well educated will fail to recognize the balance of nutrition and therefore the practice of child feeding does not provide the child with proper nutrition. Instead of feeding the child healthy food, parents in the slum area focus on fulfilling the hunger of their children using staple food like rice along with lentils and bread as the primary staple food and excluding food which are needed like protein and fruits and vegetables. Children are at a risk of critical micronutrient deficiencies of iron vitamin A and zinc because the elements are required in the body to support immunity and learning capabilities and physical maturation.

The redefinition of child nutrition is based on social perceptions and cultural practices of families. There is a traditional household belief that dictates the foods that children should and should not eat during a meal. Some mothers have the erroneous belief that eggs encourage early puberty and fish causes skin problems and certain vegetables do not suit their child resulting in bad eating habits being enforced. Gender bias in households over the practice of serving larger food portions to male children than to female children contributes to a higher risk of malnutrition in girls.

3.10 Lack of Access to Healthcare and Nutrition Services

Precarious healthcare facilities within Mirpur slums prevent families from receiving appropriate diagnosis and treatment of their early malnutrition. The scarcity of nutrition counseling together with maternal care services and immunization programs intensifies the situation. The current deficiency of iron along with vitamin A and iodine becomes worse because maternal and child healthcare systems remain insufficient.

3.11 Cultural and Dietary Practices

The eating habits of the culture along with the dietary taboos and the meal distributions, in terms of gender, have adverse impacts on child nutritional health. In other circumstances male children are fed bigger food portions compared to female children and the culture does not allow access to certain nutritious foods that contain eggs and meats that limit the availability of essential nutrients.

3.12 Dependency on Processed and Low-Quality Foods

Residents of slums rely on processed fast foods and cheap foods due to economic barriers and altered lifestyles but they have low concentrations of key nutritious components. Hidden hunger occurs when children consume food sources that contain a lot of carbohydrates and little protein because they do not exhibit symptoms of undernourishment despite the absence of important vitamins and minerals. The residents of the Mirpur slums rely on processed and low quality food substances since their low income is combined with limited supply of fresh food products and their low level of nutrition knowledge. The community is eating the rapid noodles with the deep fried snacks along with the packaged biscuits containing the sugar beverages as it is due to the availability of these cheap products and it does not require many cooking processes. Processes foods usually have saturated fats and excess sugar and salt but fail to provide the body with protein or vitamins and minerals.

Children in the poor families usually consume these nutritionally deficient foods that lead to malnutrition and hence stunted growth and immune deficiency. As a result of their cost-density parents prefer more nutritionally deficient, yet energy-dense foods, and eat less fresh produce and meat and dairy products. The processed foods are convenient to working parents, who lack time to cook.

Marketing campaigns targeting people who live in slums are not controlled, forcing them to make unhealthy food decisions. Unaware parents continue feeding their children on processed foods. The resulting long-term overconsumption of processed foods across years will create widespread micronutrient deficits and obesity triggering diet-related diseases that exacerbate the health condition of populations across poorer communities of Mirpur. The answer requires improved nutrition education and access to less expensive healthy foods.

3.13 Poor Sanitation and Hygiene

Mirpur slums in Dhaka are characterized by poor sanitation which causes nutritional difficulties in children living in these slums. Poor sanitation facilities coupled with water contamination and lack of hygiene habits enable disease outbreaks to ensure that has a detrimental impact on child feeding. Poor conditions coupled with poor living conditions create malnutrition because it causes sicknesses which lower absorption of nutrients besides aggravate vitamin and mineral deficiencies in children.

Hygienic conditions increase the risk that individuals will pick up hookworms and roundworms and other intestinal parasites. This type of competition among food parasites to access nutrients in the body of the child leads to nutritional deficiencies, resulting in growth restriction along with anemic problems and weak immunity systems. The children with worms have bodies that cannot get all the nutritional components of the limited food they consume. Any accessible nutrition becomes useless due to the presence of parasites, therefore, causing permanent malnourishment despite the children getting a balanced diet.

It is necessary to improve child health in Mirpur slums through measures to address hygiene and sanitation issues alongside nutritional intervention programs. Children who lack purity of water and appropriate sanitation facilities as well as sanitized education will continue to experience diseases that reduce their capacity to achieve maximum nutrition levels. In communities that are marred by malnutrition and diseases, development will occur through investment in sanitation systems alongside education concerning hygiene and provision of readily available clean drinking water.

3.14 Inadequate Access to Clean Water

Mirpur slums in Dhaka are experiencing an emergency water quality crisis that impacts adversely on the health of children and generates nutritional deficit issues. There is a shortage of clean and safe water between these overcrowded settlements despite the fact that hydration and digestion as well as nutrient absorption all require water. The residents of this area obtain water at community or illegal supply stations where the water is usually contaminated with lethal microorganisms and industrial poisons. Children lose their lives to waterborne diseases and develop chronic illnesses and severe malnutrition since they have no reliable and safe supply of water.

These unsafe sources of water children in slum areas drink include shallow wells and uncovered reservoirs together with poorly maintained community taps. These water resources are contaminated due to the fact that they absorb the sewage together with the garbage and the industrial waste generated by the factory installations that surround them. A lack of access to clean water will continue to be a significant barrier to child health and this state of affairs will keep the level of malnutrition steady and dangerous diseases will continue to be a threat. The right to clean drinking water should be given to every child as it is one of the fundamental human requirements that have significant impacts on their well-being and overall health.

3.15 Overcrowded Living Conditions

Nutritional deficiencies due to the overcrowding existing in the Mirpur slums of Dhaka leads to worsened child health conditions. In cramped conditions, where thousands of families do not have adequate air ventilation, this situation poses a threat since it may promote the transmission of infectious diseases, as well as breathing issues and malnutrition. The limited living spaces coupled with poor hygiene represent impediments to maintaining hygiene due to the prevalence of diseases that induce poor nutrition uptake capacities in children.

The population in such overpopulated settlements must share their rooms with different family units and have limited access to sunlight and fresh air. Residents are living close to each other, hence making it easy to spread airborne diseases like tuberculosis, pneumonia, and influenza. Children with underdeveloped immunity are easily infected with respiratory diseases that decrease appetite during the feeding process and lead to digestive issues and malnutrition. Diseases prevent the body to process the important nutrients that result in chronic malnutrition and physical growth retardation and malfunction of developing processes in children.

3.16 Air and Environmental Pollution

The residents of Mirpur slums in Dhaka have severe health-related problems and nutrition deficiencies due to environmental pollutions in their locality. The area is constantly exposed to hazardous pollutants due to being in the middle of industrial activities and the effects of vehicle emissions and uncontrolled dumping of garbage. Children inhale lethal air that has fine aerosols and toxins as well as metals and toxic gases that destroy the functioning of their lungs and in addition destroy the overall functioning of their immune system. Being overexposed to air contamination causes impaired lung functionality and creates additional breathing diseases and produces negative outcomes on nutrient uptake and overall development.

Yellow fever is more likely to occur in children due to persistent health problems due to pollution and contaminated air. The constant exposure to pollution will deteriorate the health of children hence causing a long-term challenge of breaking the cycle of sickness with undernutrition in these prone regions.

4.0 Conclusion

A study entitled Nutritional crisis and Their Impact on Child Health in Mirpur Slums in Dhaka explains the essential features of nutritional crisis affecting children living in shanty areas of the city. Policy programs should make efforts to enhance food availability and maternal and child healthcare delivery coupled with improving sanitation and imparting nutritional knowledge to the community. Various government bodies ought to collaborate with local nonprofit organizations and local neighborhood groups to develop long-term solutions in the process. Modern healthcare delivery must tackle the causes of nutritional deficiencies and provide improved health outcomes to the children in slums thereby breaking the cycle that plagues poor urban communities.

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