

Received : 05 March 2024, Accepted: 25 April 2024

DOI: <https://doi.org/10.33282/rr.vx9i2.06>

IMPACT OF CHILD MALNUTRITION ON STUDENTS` PERFORMANCE IN RURAL AREAS OF SINDH

*Dr. Murtaza Ali Laghari 1st, Dr. Abida Siddiqui 2nd, Shabana Shaikh 3rd, Mahwish Shaikh 4th
Zain-ul-Abideen Laghari 5th, Nadir Mugheri 6th, Maqbool Ahmed Jamali 7th,*
murtaza.laghari@scholars.usindh.edu.pk

1. *Head Master, School Education and Literacy Department, Govt: of Sindh, Pakistan.*
2. *Associate Professor, Faculty of Education, University of Sindh, Jamshoro, Sindh, Pakistan.*
3. *Ph.D. Scholar, Faculty of Education, University of Sindh, Jamshoro, Sindh, Pakistan.*
4. *Ph.D. Scholar, Faculty of Education, University of Sindh, Jamshoro, Sindh, Pakistan.*
5. *Director, Sindh Teacher Education Development Authority, SE&LD, Govt: of Sindh, Pakistan.*
6. *Ph.D. Scholar, Institute of English language and Literature, University of Sindh, Jamshoro, Sindh, Pakistan.*
7. *Ph.D. Scholar, Faculty of Education, University of Sindh, Jamshoro, Sindh, Pakistan.*

ABSTRACT

A serious ailment that transpires when the diet is not properly continued or the failure of food to provide the appropriate number of nutrients is called malnutrition, malnutrition is a dangerous ailment. It implies that inadequate nutrition may include undernutrition or insufficient nutritional intake. Malnutrition is commonly classified into several broad categories, such as, undernutrition, which includes stunting, wasting, underweight, and deficits in certain micronutrients. If we compare Pakistan to other emerging nations, we find that child malnutrition is among the most widespread. One of the main issues that exists in Sindh's rural areas is malnutrition, which results in a significant number of underweight and undersized children and an increased death rate. In this research study the descriptive type of the research and mix method approach was used to conduct this research study. The tool to conduct this research study was consisting of the Likert scale 5.0 and open-ended questionnaire for interview to collect the data from teachers, whereas, the AGRA Tool was used to measure students` ability to read write and understand the letters words and narrations. The class five children's height and weight were measured using anthropometric measuring instruments (Stadiometer and a weight scale) in their classroom in accordance with the recommended methods of the World Health Organization (2007). In order to determine what

constitutes underweight, normal, and overweight, the pupils' age, weight, and height were used to calculate their body mass index (BMI). The child's height, weight, and age were verified, computed, and interpreted appropriately. The Statistical Package for Social Sciences, version 26 (SPSS 26), was utilized for data analysis. For additional study interpretation, the conventional BMI table with the weight for age, age for height, and height for weight was utilized. The deprived taluka of Badin Shaheed Fazil Raho/S.F Raho was selected for the study. The purposive sampling technique was used to select the sample/students from the selected schools of UC Tarai, 200 students were selected and measured. Moreover, the AGRA tool was adapted to measure their performance. Whereas, 10 teachers were given close ended questionnaire Likert Scale 5.0 and 10 Head teachers were selected for measuring their response about malnutrition and students' performance through interview. the results of the research study that the child malnutrition has a strong impact on students' performance. the students' performance is severely affected due to malnutrition. The children with malnutrition are found inactive, lazy and passive during the teaching and learning process, they are commonly found absent reasoning different health issues. The study discovered that the child with malnutrition are unable to read and write Sindhi, Urdu or English, even some of the them are unable to identify the letters

Keywords: Child Malnutrition, Undernutrition, Developing Country, Primary Schools, Sindh, Pakistan.

INTRODUCTION: A cellular imbalance caused by the body's demand for nutrients and energy to support development, maintenance, and certain functions not being satisfied is known as malnutrition. Insufficient nourishment Failure of growth Nutritional elements or acute malnourished wasting stunting from chronic starvation and poor cognitive development underweight due to acute or chronic malnutrition in micronutrients. To properly plan an emergency response, it is necessary to identify the several interconnected causes of undernutrition. A helpful resource for comprehending the causes of undernutrition is the UNICEF conceptual framework. Three layers of causality are described: basic, underlying, and instantaneous. A disparity between the quantity of nutrients the body absorbs and the quantity it needs as a result of eating too little or contracting an infection is the direct cause of hunger. The three primary classifications of food insecurity, poor public health, and inadequate care can be used to group the root causes of hunger.

- The greatest efforts of families to get adequate nutrition may be undermined by political, legal, and social constraints; these are referred to as the fundamental causes of undernutrition. People who are impoverished or who reside in impoverished locations are more at danger of starvation and malnutrition worldwide. Warfare and natural calamities like earthquakes and droughts can exacerbate hunger and malnutrition in developing nations by interfering with the regular production and distribution of food (Issa, Muntaha, & Ahmad, 2024).

People who don't eat enough food often experience hunger, which can lead to malnutrition in the end. However, malnutrition can also happen for other non-hungry causes. Even those who eat a lot could become malnourished if they don't eat foods that are high in the right nutrients, vitamins, and minerals. There are 165 million malnourished children under five in the world. Malnutrition is the primary cause of at least half of the fatalities that occur earlier worldwide. Children's malnutrition is usually a problem in developing and underdeveloped countries. Malnutrition is the main cause of illness and death in children. It is estimated that undernutrition accounts for more than half of child fatalities globally. It also jeopardizes children's development—both mentally and physically—which has an adverse effect on their academic achievement. Sufficient nourishment is essential for maintaining a robust immune system and promoting healthy physical and cognitive growth from early childhood to maturity (GIA, 2023).

Undernutrition is frequently considered as malnutrition. children under five who represent symbols of underweight, wasting, or stunting are deemed malnourished. Underweight is considered acute malnutrition, stunting is considered chronic malnutrition, and wasting is the combined effect of both acute and chronic malnutrition. Contingent to the situations, malnutrition can contemporary itself in a multitude of ways. Having little food on hand at any given time, eating too little, dropping weight quickly, being tired easily, deficiency in fluids.

STATEMENT OF THE PROBLEM: Malnutrition is the term used to describe undernutrition. Youngsters under five who show signs of underweight, wasting, or stunting are deemed malnourished. Underweight is considered acute malnutrition, stunting is considered chronic malnutrition, and wasting is the combined effect of both acute and chronic malnutrition. Pakistan

is divided into four administrative provinces: Sindh, Punjab, Khyber Pakhtunkhwa (KPK), and Baluchistan. Nearly two thirds of Pakistan's population live in rural areas, where poverty is more pervasive. Different individuals in rural areas run unofficial enterprises, care for animals, work in fields, and have the highest rates of childhood malnutrition. This study aims to explore the child malnutrition in rural areas of Sindh and its impact on students` performance at public primary schools in Sindh, Pakistan.

OBJECTIVES: In Pakistan, the primary cause of sickness and mortality among children is malnutrition. Overcoming child malnutrition has not yet been the Pakistan government's top focus. The particular objectives are given as follows:

To explore the child malnutrition and students` performance in primary school students of rural areas of Sindh, Pakistan

To know the impact of child malnutrition on students` performance in primary schools of rural areas of Sindh, Pakistan.

To enlist the recommendations to prevent child malnutrition in primary schools of rural areas of Sindh, Pakistan.

HYPOTHESIS: There is no significant impact of child malnutrition on students` performance in primary schools of rural areas of Sindh, Pakistan.

LITERATURE REVIEW: Almost all emerging and underdeveloped nations worldwide have some variation of this predicament. According to earlier research, the general state of childhood malnutrition is found in locations where essential amenities are either scarce or nonexistent and therefore require further investigation. The worst circumstances leading to malnutrition in many underdeveloped countries were disclosed in the most pertinent and recently published publications. Numerous research publications with data on child malnutrition in Pakistan were analyzed, however not all of the gaps were filled and the papers were not carefully evaluated to assess the actual situation. Most researchers employed structured interviews to do investigations to ascertain the causes of malnutrition in children. A number of studies gather participant data and used weight

Z-score approach to evaluate child malnutrition. Early marriages, large families, high birth rates with no time interval between children, low income, not breastfeeding, and exclusive breastfeeding were among the themes that kept coming up. Research on various approaches is sorely needed to understand and acquire insight into the underlying causes of childhood malnutrition in Pakistan. In underdeveloped nations, despite improvements in economics and society, childhood malnutrition remains a major public health and social problem. Childhood malnutrition can be caused by a number of factors, including low birth weight, inadequate and exclusive breastfeeding, inappropriate supplemental feeding, maternal education, inadequate nutrition knowledge, micronutrient intake, parity, timing of birth, family economic hardship, insufficient food supply, poor sanitation, immunization, and infectious diseases. In comparison to other South Asian countries, Pakistan has made substantial progress toward improving the nutrition and health of children, despite having some of the highest rates of child malnutrition in the world (Shahid, Javeed, & Nawaz 2023).

Signs and Consequences of Malnutrition: The body and the mind are harmed by malnutrition. In other words, an individual is more prone to experience problems the more malnourished they are—that is, the more nutrients they are lacking. Depending on the specific dietary deficits a person has, malnutrition can present with a variety of signs and symptoms. fatigue and low mood, dizziness, weakened immune system (which can make it harder for the body to fight off infections), dry, scaly skin, swollen and bleeding gums, tooth decay, slow reflexes and trouble concentrating, underweight, poor growth, weak muscles, bloated stomach, osteoporosis or easily broken bones, problems with organ function, and learning challenges. A woman who is undernourished and conceiving may give birth to a child who weighs less and has a decreased chance of surviving. In the developing world, vitamin A insufficiency resulting from starvation is the primary cause of avoidable blindness. Children who suffer from severe vitamin A deficiency are more susceptible to illnesses like measles or diarrhea, which can lead to illness or death. Developmental delays and mental retardation can result from iodine shortage. Iron deficiency in early life can cause developmental delays, as well as lower levels of activity and concentration in older children. Teens who are undernourished frequently struggle academically (Ali, Khan, Ali, Abbas, Arshad, Akram, & Ajmal, 2020).

It is estimated that a significant portion of children under five worldwide are stunted and either moderately or severely underweight. Nearly half of all stunted children, two thirds of wasted children, and 51 million (8%) wasted children under five years old live in Asia. Malnutrition affects children's future socioeconomic development and health as well as the vibrant future of society. When compared to other developing nations, Pakistan is said to have one of the highest rates of child malnutrition prevalence. A prominent number of children were underweight and stunted, whereas, the wasted and anemic were countless, according to the National Nutrition Survey. Numerous results were shocking, because the situation was enormous. The pertinent literature was found using a variety of research studies, child undernutrition in Pakistan, and child undernutrition in Pakistan found eccentric (Ahmad, Afzal, & Imtiaz, 2020).

Malnourished children are a result of unhealthy mothers: The best window of opportunity for a child's health is the first 1,000 days, which span from the start of a woman's pregnancy to the child's second birthday. Malnourished pregnant women may have challenging labors and births. Many babies are born small because their moms are undernourished. Extremely malnourished mothers may find it difficult to nurse their children. We know that nursing a baby throughout the first six months of life has positive effects on an adult's long-term health. If a woman is too undernourished to breastfeed, the infant may not receive these health benefits, placing them at risk of malnutrition. This is especially true in developing countries. Mothers in undeveloped countries, such as Memory, might not be aware of the health benefits of nursing. Since her son was born underweight and kept getting sick, Memory was very concerned and heartbroken. With the help of Save the Children, Memory was able to gain knowledge about the importance of nutrition through classes and hands-on activities. Specifically, she learned about age-appropriate foods for newborns and the critical role that diet plays throughout pregnancy. Different health programs work to prevent child malnutrition by enhancing the health of expectant mothers, new babies, and children. We go both domestically and abroad to many of the world's poorest locations as part of our efforts to prevent malnutrition and end child hunger. However, children in developed countries still have the risk of malnutrition. (ABUSHRAYDA at al., 2009)

Types of Malnutrition: Various forms of malnutrition associated with various problems in children
Acute Malnutrition; Skinniness or Wasting, acute malnutrition resulting in either abnormally slow

weight gain or fast weight loss. Chronic malnutrition: shortness or stunting; prolonged periods of inadequate nourishment that prevent linear growth. Malnutrition, both acute and chronic; underweight, because it's a composite measure, it could originate from stunting, wasting, or both. Socioeconomic Status and Childhood Malnutrition: In developing and less developed nations, poverty is the primary cause of malnutrition in children. Families in poverty frequently don't have access to food, fresh water, fruits, or vegetables. Many communities lack access to basic amenities that consistently supply food. You could hardly picture them eating a single meal a day, let alone fresh produce. When children cannot even obtain regular food, chronic malnutrition is concentrated in nations where basic necessities are scarce or nonexistent, resulting in stunted growth in one in three children. Approximately 139 million children, or nine out of ten stunted children, reside in low- and lower-middle-income nations today (Achakzai, & Khan 2016).

METHODOLOGY: This study aims at exploring the child malnutrition in rural areas of Sindh and its impact on students` performance at public primary schools in Sindh, Pakistan. The positivism philosophical paradigm was envisioned to conduct this study. In this regard the descriptive type of the study and mix method approach was used to conduct this research study. As descriptive type of study is used to encompass over the current situations which leads to grasp the evidences on the spot. The tool to conduct this research study was consisting of the Likert scale 5.0 and open-ended questionnaire for interview to collect the data from teachers, whereas, whereas, the AGRA Tool was adapted to measure students` ability to read write and understand the letters words and narrations. The class five children's height and weight were measured using anthropometric measuring instruments (Stadiometer and a weight scale) in their classroom in accordance with the recommended methods of the World Health Organization (2007). In order to determine what constitutes underweight, normal, and overweight, the pupils' age, weight, and height were used to calculate their body mass index (BMI). The child's height, weight, and age were verified, computed, and interpreted appropriately. The Statistical Package for Social Sciences, version 26 (SPSS 26), was utilized for data analysis. For additional study interpretation, the conventional BMI table was utilized. For data analysis Statistical Package for Social Sciences 26 version (SPSS 26) was used. The weight for age, age for height, and height for weight standard BMI table was used for further interpretation of the study. The deprived taluka of Badin Shaheed Fazil Raho/S.F Raho was selected for the study. The purposive sampling technique was used to select the

sample/students from the selected schools of UC Tarai, 200 students were selected and measured. Moreover, the AGRA tool was used to measure their performance. Whereas, 10 teachers were given close ended questionnaire Likert Scale 5.0 and 10 Head teachers were selected for measuring their response about malnutrition and students` performance through interview.

Age	Weight	Height
0-6 Months	3.3 kgs - 7.5kgs	19.4 to 25.9 inches
7-12 Months	7.9 kgs - 9.2 kgs	25.5 Inches to 29.2 Inches
1-2 Years	9.5 kgs - 12 kgs	29.6 Inches to 33.4 Inches
2-4 Years	12 kgs - 15 kgs	29.6 Inches to 33.7 Inches
4-6 Years	15.4 kgs - 20 kgs	39.5 Inches to 45.5 Inches
6-8 Years	19.5 kgs - 25.5 kgs	45.5 Inches to 50.5 Inches
8-10 Years	25.5 kgs - 31.9 kgs	50.5 Inches to 55 Inches
10-12 Years	32 kgs - 41.5 kgs	54.5 Inches to 59 Inches
12-14 Years	42 kgs - 47.6 kgs	60 Inches to 62.5 Inches
14-16 Years	45 kgs - 53 kgs	62.5 Inches to 64 Inches
16-18 Years	53 kgs - 56.7 kgs	64 Inches to 64.2 Inches
18-20 Years	56 kgs - 58 kgs	64.2 Inches to 64.5 Inches

The analysis of the data collected through different tools was undertaken including descriptive and inferential statistics for quantitative data whereas, the thematic analysis was undertaken for qualitative data for better understanding of the results of the research study.

Students` Age, Average Height and Weight

No of Students	Class	Age	Average Height	Average Weight
200	5 th	10-13	39-46 inches	15-17kg

Finding: The table shown above reveals that the students studying in class five were facing low weight and height

Letters Identification				
	Frequency	Percent	Mean	SD
YES	87.8	43.9	1.54	.499
NO	112.2	56.1		
Total	200	100.0		

Finding: Mean Score 1.54 and SD .499 Shown in the table revealed that the majority of the students were not able to identify letters

English Language Reading Ability				
	Frequency	Percent	Mean	SD
YES	95	47.7	1.,50	.501
NO	105	52.3		
Total	200	100.0		

Finding: Mean Score 1.50 and SD .501 Shown in the table revealed that the majority of the students were not able to read English

Sindhi Language Reading Ability				
	Frequency	Percent	Mean	SD
YES	100.6	50.3	1,53	.500
NO	99.4	49.7		
Total	200	100.0		

Finding: Mean Score 1.53 and SD .500 Shown in the table revealed that the majority of the students were not able to read Sindhi

Urdu Language Reading Ability				
	Frequency	Percent	Mean	SD
YES	86.4	43.2	1,57	.496
NO	113.6	56.8		
Total	200	100.0		

Finding: Mean Score 1.58 and SD .496 Shown in the table revealed that the majority of the students were not able to read Urdu

Wetting Ability				
	Frequency	Percent	Mean	SD
YES	101.4	45.7	1,52	.500
NO	108.6	54.3		
Total	200	100.0		

Finding: Mean Score 1.52 and SD .500 Shown in the table revealed that the majority of the students were not able to write.

There is no significant impact of child malnutrition on students` performance in primary schools of rural areas of Sindh, Pakistan

Hypothesis	Regression weight	Beta Coefficient	R Square	F	p-value	Null Hypothesis Accepted
Ho	CM----SP	1.299	.126	80.219	.000	Rejected

Finding: The statistical analysis (Regression Analysis) results shown in the table above reveal that the child malnutrition directly effects on students` performance.

Thematic Analysis

Theme: Malnutrition and Students` Performance

Theme	Category	Code	Transcript
Malnutrition and Students` Performance	Parents Poverty, Child Health, Teaching Methods, Teachers` Involvement,	Low income, Mothers` Health, lack of Communication, Students` interest	Malnutrition is basically cause of poverty and low-income resources which directly effects on child health resulting poor performance, whereas, the mothers` health is also highly effected due to inappropriate diet. Those mothers who face inappropriate diet give birth to the unhealthy children which directly effects on their` performance through entire life.

Finding: The thematic analysis reveals that the Malnutrition is basically caused of poverty and low-income resources which directly effects on child health resulting poor performance, whereas, the mothers` health is also highly effected due to inappropriate diet. Those mothers who face inappropriate diet give birth to unhealthy child which directly effects on their` performance through-out their life specially education.

Findings and Discussion: The process of Triangulation/cross checking the results of quantitative and qualitative analysis reveal that the malnutrition is basically caused of poverty and low-income resources which directly effects on child health resulting poor performance. The children commonly attend their schools without breakfast, moreover their lunch and dinner are hardly provided which does not match their age weight and height. Inappropriate diet effects their health and the same results on their performance while learning. Whereas, the mothers` health is also highly effected due to inappropriate diet. Those mothers who face inappropriate diet give birth to unhealthy children which directly effects on their` performance throughout life. It was proved that the child with malnutrition can not perform well in learning. The findings of this research study are also aligned with Abbasi, Mahmood, Zaman, Farooq, Malik, & Saga (2018) in Indicators of malnutrition in under 5 Pakistani children, which reveals that the majority of the students with malnutrition face many problems dealing with health issues. This study reveals that the child malnutrition is a major factor that causes of absence of the children from schools or found reluctant during teaching and learning process. It was also statistically proved that the child malnutrition has a strong impact on students` performance. It was revealed that the child with malnutrition are unable to read and write Sindhi, Urdu or English, even some of the them are unable to identify the letters.

Conclusion: The study clinched on the basis of the results of the research study that the child malnutrition has a strong impact on students` performance. the students` performance is severely affected due to malnutrition. The children with malnutrition are found inactive, lazy and passive during the teaching and learning process, they are commonly found absent reasoning different health issues. The study discovered that the child with malnutrition are unable to read and write Sindhi, Urdu or English, even some of the them are unable to identify the letters.

Recommendations: The researchers of this research study are able to suggest that the state should counter first the health issues of the people in rural areas of Sindh and later on their education should be put on priority, without sound health the children can hardly get educated. It is also recommended that the child health with mother health should be focused on priority basis which can help in nourishing an individual with sufficient capabilities to develop sound society. It is also suggested that the teachers and the heads of the schools should be trained to develop their communication skills which can help in community mobilization for better students` performance.

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