



## Original Article

# Investigating the Malnutrition in Children Under Five Years in District Umerkot, Sindh

Gulzar Usman<sup>1\*</sup>, Muhammad Azeem Khan<sup>2</sup>, Wali Muhammad Nizamani<sup>1</sup>, Muhammad Waqar<sup>3</sup>

<sup>1</sup>Department of Community Medicine, Liaquat University of Medicine and Health Sciences, Jamshoro, Pakistan

<sup>2</sup>Sindh Institute of Child Health and Neonatology, Korangi, Pakistan

<sup>3</sup>Lady Reading Hospital, Peshawar, Pakistan

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### \*Corresponding Author:

Gulzar Usman  
Department of Community Medicine, Liaquat University of Medicine and Health Sciences, Jamshoro, Pakistan  
[gulzar@lumhs.edu.pk](mailto:gulzar@lumhs.edu.pk)

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## ABSTRACT

Malnutrition no doubt has turned into a major public health problem especially in under five children of developing countries, 45% of child mortality is directly linked to malnutrition in developing countries. The malnutrition rates in Pakistan are undoubtedly high as 44% of children under five are stunted. **Objective:** This study aimed to determine the prevalence of malnutrition among children under five years of age in District Umerkot, Sindh. **Methods:** The study was designed as descriptive research and a non-probability convenient sampling technique was used to select respondents. A close-ended questionnaire was used to collect data from 164 respondents. **Results:** The findings of study revealed that stunting and wasting were the most frequently proved types of malnutrition which is highly prevailing among children under five years of age in District Umerkot. **Conclusions:** This study emphasizes the need for effective interventions to address malnutrition in this area and study to discover the cause of issue. The findings of this research might aid in directing efforts designed toward enhancing the diets of children under five in Sindh District Umerkot and might affect policy alternatives.

## INTRODUCTION

Under 5-12 months malnutrition is a worldwide problem, mainly in growing internationally including Pakistan. It is described as a condition where an infant's diet does not provide malnutrition amongst children below the age of five. It is a global issue, particularly in developing international countries such as Pakistan [1]. According to the World Health Organization, malnutrition is the main cause of demise among children underneath the age of five approximately 45% of all infant deaths internationally [2]. This situation is defined as a condition in which the kid's diet does not provide the important quantity of vitamins important for his boom and improvement [3]. In this

literature overview, we talk the prevalence, reasons, and results of undernutrition in kids underneath five years of age, specializing in both the worldwide and Pakistani contexts. Below-five malnutrition is a massive trouble affecting about 144 million children beneath five globally [4]. The prevalence of malnutrition on this age institution is maximum in sub-Saharan Africa, where one in 3 kids are malnourished [2]. In Pakistan, stunting (small peak) occurs in 38 percentage of children below five years of age, and wasting (low weight for peak) is 17 percent [5]. In addition, micronutrient deficiencies also are common in Pakistani children, as about 60% are deficient in nutrition as 40% in

iron and 36% in zinc [6]. The reasons of malnutrition in children beneath the age of five are multifactorial. Poverty, food, lack of confidence, malnutrition and bad feeding practices are a number of the maximum not unusual factors affecting malnutrition [7]. In developing countries inclusive of Pakistan, poverty is the main cause of malnutrition, with a massive percentage of the population living beneath the poverty line and not able to manage to pay for nutritious meals [2]. Limited get admission in health care and education, low nutrients cognizance, and cultural ideals and practices additionally extensively have an effect on toddler malnutrition [8]. Malnutrition in children below the age of 5 has long-term outcomes which could have an effect on their bodily and cognitive improvement for a long time. Malnourished children have been more likely to experience stunted boom and improvement, are considered greater at risk of disorder and more likely to die [9]. Malnutrition also adversely influences children's cognitive development, leading to negative college performance and restricted employment possibilities within the destiny [10]. Thus, malnutrition has extreme economic impact on society, main to reduced productivity and improved healthcare prices. One of the worst affected regions in Pakistan is normally considered Umerkot in Sindh, where malnutrition amongst children beneath the age of 5 is very common [11]. This literature review examines the present-day reput of under-five toddler malnutrition in Umerkot, District Sindh and exploring the underlying reasons of this issue. In the Umerkot district of Sindh, forty-six. 7% of kids below the age of five are malnourished, [8]. This method that nearly half of the children inside the area are underweight, stunted or lost. Stunting, or low top for age, is the most not unusual form of malnutrition in Umerkot, affecting forty-four. 3% of children [11]. This is accompanied by underweight or low weight for age, which affects 36.2% of youngsters, and losing or low weight for height, which impacts 17.6% of children [2].

In end, underneath-five infant malnutrition is a common trouble in Umerkot, Sindh. Poverty, restrained access to healthcare, lack of training and cognizance, inadequate nutrients and negative sanitation and hygiene are acknowledged key elements in this hassle. Addressing those underlying factors with effective measures and regulations can result in a great reduction in malnutrition charges and an improvement inside the general health and nicely-being of children in Umerkot.

## METHODS

This cross-sectional study was conducted in Umerkot District, Pakistan in June 2023 to December 2023. Non-probability convenient sampling was used to target children under five years of age from low socioeconomic

background settled in rural communities. Children with chronic illnesses were not included in the study. According to the Pakistan Bureau of Statistics, the estimated population of children under five years of age in Umerkot District, Sindh is 160,633. A team of researchers visited the area and gained the trust of the parents of the children. Age was elicited from the respondents by asking the date of birth or checking birth certificates/vaccination cards or using local events calendar. Middle Upper Arm Circumference (MUAC) was taken using measuring tape called as Shakir's tape. This is commonly used in emergent situations in order to diagnose malnutrition. Verbal informed consent was obtained from heads of the households after explaining them about the rationale of the study and ensuring them about 100% confidentiality Data were analyzed using SPSS software.

## RESULTS

The contemporary survey results suggested that all of the mean ages in the malnourished children survey were closer to the left, ranging from 12.41 to 14.13, with an overall mean of 13.34. This means the majority of children who are yet to reach the age of five in district Umerkot, Sindh are malnourished. The standard deviation for each group of malnourished children was within comparable proximity to one another, with variance varied from 1.02 to 1.34, suggesting that the data are in closer proximity to each mean. The high mean and small standard deviation from age of 2-3, and 4-5 groups suggested a possibility that children in both these groups have more susceptibility for malnutrition than the rest, it could be due to a number of reasons but could consist of insufficient nutritional intake, poor living conditions, and lack of healthcare access in all likelihood. Conversely, the relatively low mean and standard deviation of the age group 6-12 months could indicate that nutritional interventions have been successful in the critical developmental stage, preventing malnutrition in these children. In summation, the findings of mean and standard deviation reveal a very high presence of malnutrition in children below 5 in district Umerkot, substantiating the presence for nutritional and healthcare interventions. Especially the age groups of 2-3 years and 4-5 years appear to be critical areas to target. Furthermore, table 1 illustrates the findings of the nutritional status of children below five years of age. This study revealed that out of the total 164 targeted children, 72 were found to have normal malnutrition status, 47 had mild malnutrition, and 32 had moderate malnutrition, 13 had severe malnutrition. The total number of malnourished children was 92 which is about 56% of the total sample size. Statistics of malnourishment status in context of age apparently depicted that the highest number of children with malnutrition were new-borns (164). The second common

age group was that of 1-2 years with 34 malnourished children. 2-3 years age group with 26 children, 3-4 years young ones were 13 malnourished children, and 4-5 years' age group was having 18 malnourished kids. It can be concluded on the basis of aforementioned statistics that malnourishment is found among the children of all age groups below five years of age in district Umerkot, Sindh; but the highest malnutrition is found in the new born, 0-1-year group, which is a very critical age for child's growth and development.

**Table 1:** Mean, standard deviation and malnourishment status in context of age

Age Group	Mean $\pm$ SD	Malnourishment Status in Context of Age				
		Normal (N)	Mild (N)	Moderate (N)	Severe (N)	Total (N)
<6 months	13.34 $\pm$ 1.02	9	2	6	1	18
6 to 12 months	12.41 $\pm$ 1.06	5	3	2	3	13
1 to 2 Years	13.76 $\pm$ 1.12	12	4	5	5	26
2 to 3 Years	14.13 $\pm$ 1.34	17	13	4	0	34
3 to 4 Years	12.87 $\pm$ 1.09	18	15	7	1	41
4 to 5 Years	13.56 $\pm$ 1.13	11	10	8	3	32
<b>Total</b>		<b>72</b>	<b>47</b>	<b>32</b>	<b>13</b>	<b>164</b>

According to the records presented in table 2, out of 90 girls, 26 had been mildly malnourished, 22 fairly malnourished, and 12 seriously malnourished. In addition, a superior percentage of female kids (53%) were discovered to be malnourished than male children (47%). This may be due to several elements, which includes cultural and social norms that prioritize male children over female kids, resulting in better nutrients and care for male children. It can also be because of girls' restrained availability of assets and opportunities in the sampled region. In addition, the statistics also show that a large number of kids of both sexes are stricken by mild to extreme malnutrition. This is highlighting how severe the problem of malnutrition amongst children under the age of five is within the Umerkot district of Sindh.

**Table 2:** Malnourishment status in context of gender

Gender	Malnourishment Status in Context of Gender				
	Normal (N)	Mild (N)	Moderate (N)	Severe (N)	Total (N)
Male	34	19	12	9	74
Female	30	26	22	12	90
<b>Total</b>	<b>64</b>	<b>45</b>	<b>34</b>	<b>21</b>	<b>164</b>

## DISCUSSION

It is worrisome that childhood malnutrition in district Umerkot is present at a high rate and must be addressed at the earliest. The built-up findings of prior survey in several Sindhi areas exposing high prevalence of malnutrition in early children and the newborn are in sync with findings of the current study [12]. The high mean age of malnourished children established in this study is a worrisome fact as it

suggests that malnutrition is not confined to infants and toddlers and has penetrated to the children as well. This could have long term implications for their health and development as malnutrition particularly in the early childhood can lead to stunted growth, impaired cognitive function and increased susceptibility to diseases [2]. The small standard deviation for each age group indicates that the data are homogenous and that the prevalence of malnutrition is roughly equivalent across all the age groups. This could be due to the pervasive poverty and food insecurity in district Umerkot which is pervasive across each age group. 65% of the households in the district Umerkot were found to be food insecure in a study by, so children in every age group are likely to be affected by them, and highlights the need for targeted interventions to address underlying causes of malnutrition such as poverty, inadequate nutrition and lack of access to healthcare [13]. This data are showing that children under the age of 5 in Umerkot district suffer from malnutrition. This is supported by means of other studies that found high levels of malnutrition in the area [12, 14]. The high stage of malnutrition in the 0-1-year age group is because of the fact that it's an important time for the child's growth and development. During this era, children are dependent on their mother's nutrition, and viable maternal nutritional deficiencies can also have an effect on the kid's dietary repute [15, 16]. Thus, focused interventions and aid for mother's and toddlers throughout this era could have a substantial effect on lowering malnutrition charges. Results of this study were consistent with preceding research showing that malnutrition is more common among female kids than male kids in developing countries [12, 17, 18]. This may also be defined by means of cultural and social norms that prioritize male kids' nutrients and grooming over girls' [15]. In many societies, male kids are seen as future breadwinners of the family, at the same time girls are looked as visible transient individuals who eventually leave to reside at in-laws [5]. This ends in unequal meals and natural resources, with boys receiving better nutrients than women. The excessive occurrence of malnutrition among women inside the Umerkot location is likewise inspired by gender discrimination and choppy strength dynamics within the same family [19]. This results in an unequal distribution of assets and care, with male children receiving higher fitness care and nutrition than an equal number of females. In addition, ladies are much more likely to be subjected to child marriage, which will increase their hazard of malnutrition because they end up pregnant at a younger age and are not able to fulfill their own and infant's nutritional needs [13]. In addition to these social factors, the superiority of malnutrition among ladies is also defined via the fact that ladies have higher nutritional

desires than boys due to their menstrual cycle and pregnancy [20]. Low birth weight due to maternal malnutrition is also a threat issue for malnutrition in women.

## CONCLUSIONS

This study explored the alarming incidence of malnutrition among kids beneath the age of five in the Umerkot region and highlighted the urgent need for targeted interventions to cope up with the trouble. Cramping and deteriorating are in maximum number of malnutrition. From the final results it can be concluded that all children below five years of age were malnourished to some extent with the highest ratio observed in age group < 1 year. Secondly a comparison between sexes revealed that females are more malnourished than males. Thus, a need for awareness to sufficiently breast feed infants is needed which is their only source of nutrition. Adding on, more attention needs to be paid towards the health dynamics of female children as they have to bear children in future.

## Authors Contribution

Conceptualization: MAK, WMN

Methodology: GU, WMN

Formal analysis: MW

Writing-review and editing: GU, MAK

All authors have read and agreed to the published version of the manuscript.

## Conflicts of Interest

The authors declare no conflict of interest.

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