

MATERNAL RECOGNITION AND HOME MANAGEMENT OF MALNUTRITION AMONG CHILDREN UNDER FIVE IN UNION COUNCIL JHUDDO

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Abstract

Background: Childhood malnutrition remains a major public health challenge, particularly in low-resource rural communities where poverty, inadequate maternal knowledge, poor feeding practices, and limited healthcare access contribute to increased nutritional vulnerability. Maternal recognition and appropriate home management practices play an important role in early identification and prevention of malnutrition among children under five years.

Objective: This study aimed to assess maternal recognition and home management practices of malnutrition among children under five years in Union Council Jhuddo, District Mirpurkhas, Sindh.

Methods: A descriptive cross-sectional study was conducted among 328 mothers of children aged 6 months to 5 years attending the Outpatient Therapeutic Program (OTP) site at Maternal and Child Health Center, Rural Health Center Jhuddo, District Mirpurkhas. Participants were selected using a non-probability consecutive sampling technique. Data were collected through a semi-structured questionnaire assessing sociodemographic characteristics, maternal awareness regarding malnutrition, breastfeeding and complementary feeding practices, home management approaches, and healthcare-related barriers. Data were analyzed using SPSS version 27. Descriptive statistics were used to summarize study variables, and Chi-square tests were applied to assess associations between categorical variables.

Results: Among the enrolled children, 61.3% were diagnosed with Severe Acute Malnutrition (SAM) and 38.7% with Moderate Acute Malnutrition (MAM). The majority of mothers (92.7%) had no formal education. Maternal awareness regarding malnutrition was extremely limited, with 99.7% of mothers reporting that they had never heard the term malnutrition, while 57.6% were unable to identify signs of malnutrition. Although breastfeeding was commonly practiced (96.6%), only 32.9% of mothers reported exclusive breastfeeding for six months. Financial constraints were identified as the major barrier affecting nutritional management, reported by 68.3% of mothers. Limited healthcare access and inadequate dietary diversity were also reported as important challenges.

Conclusion: This study demonstrates a high burden of acute malnutrition and significant gaps in maternal recognition and home management practices among children under five years in Union Council Jhuddo. Strengthening maternal nutrition education, promoting appropriate infant and young child feeding practices, improving access to community-based nutrition services, and addressing socioeconomic barriers are essential strategies for reducing childhood malnutrition.

Keywords: Childhood malnutrition; Severe acute malnutrition; Maternal knowledge; Breastfeeding practices; Home management; Child nutrition; Pakistan.

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Introduction

Malnutrition remains one of the most significant public health challenges affecting children under five years of age, particularly in low- and middle-income

countries. It includes undernutrition, micronutrient deficiencies, and overnutrition, with undernutrition being a major contributor to childhood morbidity,

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mortality, and impaired growth.¹ Childhood malnutrition can negatively influence physical growth, cognitive development, immune function, and future socioeconomic productivity.² The first five years of life represent a critical period of rapid growth and development; therefore, inadequate nutrient intake during this period may result in long-term consequences for health and development.³

Globally, stunting, wasting, and underweight continue to affect millions of children, particularly in resource-limited settings. Although progress has been achieved in reducing childhood malnutrition, many regions continue to experience a high burden due to poverty, food insecurity, inadequate healthcare access, poor sanitation, and limited awareness regarding appropriate child feeding and nutritional care.⁴ South Asia remains one of the regions with a substantial burden of childhood undernutrition, where socioeconomic inequalities and behavioral factors continue to influence nutritional outcomes.⁵ Pakistan faces a considerable challenge of under-five malnutrition, particularly in rural and disadvantaged populations where poverty, maternal illiteracy, limited healthcare access, and poor dietary practices contribute to poor nutritional status among children.⁶ Maternal recognition of malnutrition plays a crucial role in early identification and timely management of nutritional problems. Mothers are usually the primary caregivers responsible for child feeding, monitoring growth, and seeking healthcare when children develop signs of illness or nutritional deficiency. Evidence suggests that maternal knowledge regarding symptoms, causes, breastfeeding, complementary feeding, and dietary diversity significantly influences child nutritional outcomes.^{7,8} However, inadequate maternal awareness may delay recognition of malnutrition and reduce the likelihood of early intervention, particularly in rural communities where access to health services is limited.⁹

Infant and young child feeding practices are important determinants of nutritional status. Exclusive breastfeeding during the first six months of life and appropriate introduction of complementary foods thereafter are recommended strategies for preventing childhood malnutrition.¹⁰ Nevertheless, inappropriate feeding practices, early cessation of breastfeeding, inadequate dietary diversity, and socioeconomic barriers remain common challenges in developing countries.¹¹ In addition, environmental factors such as unsafe drinking water, poor sanitation, and recurrent infections contribute to malnutrition by affecting nutrient absorption and increasing nutritional requirements.¹²

Home-based management of childhood malnutrition is particularly important in areas where healthcare accessibility is limited. Appropriate caregiver

practices, including recognition of warning signs, continued feeding during illness, dietary improvement, and timely healthcare-seeking behavior, can contribute to improved nutritional recovery.¹³ However, these practices are strongly influenced by maternal education, household income, cultural beliefs, and availability of healthcare facilities. Studies have demonstrated that strengthening caregiver education and community-based nutrition interventions can improve child feeding practices and reduce the burden of malnutrition.¹⁴

Union Council Jhuddo, District Mirpurkhas, Sindh, represents a rural setting where children are vulnerable to nutritional deficiencies due to socioeconomic limitations and restricted access to healthcare services. Although malnutrition remains a major concern in rural Sindh, limited evidence exists regarding mothers' ability to recognize malnutrition and manage it at the household level. Understanding maternal knowledge, feeding practices, and barriers faced by caregivers is essential for designing effective community-based interventions.

Therefore, this study was conducted to assess maternal recognition and home management practices of malnutrition among children under five years of age in Union Council Jhuddo, District Mirpurkhas, Sindh. The findings aim to identify gaps in maternal awareness, evaluate current home-based nutritional practices, and explore socioeconomic and healthcare-related barriers influencing the management of childhood malnutrition.

The objective of this study was to assess maternal recognition and home management of malnutrition among children under five years in Union Council Jhuddo, District Mirpurkhas, Sindh. Specifically, the study aimed to evaluate mothers' knowledge regarding signs, symptoms, and causes of childhood malnutrition and to assess household-based management practices, including breastfeeding, feeding behaviors, and responses to perceived nutritional problems. Additionally, the study aimed to identify socioeconomic and healthcare-related challenges that may influence mothers' ability to effectively manage malnutrition among their children.

Materials and Methods

A descriptive cross-sectional study was conducted at the Outpatient Therapeutic Program (OTP) site of the Maternal and Child Health Center (MCHC), Rural Health Center (RHC), Union Council Jhuddo, District Mirpurkhas, Sindh. The study was carried out over a period of six months from 16th May 2025 to 16th November 2025. A total of 328 mothers of children aged 6 months to 5 years were recruited using a non-probability consecutive sampling technique. Participants included mothers who were primary caregivers of children diagnosed with moderate or

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severe acute malnutrition and receiving or having received treatment through the OTP.

Data were collected through a semi-structured questionnaire administered by trained interviewers in the local language. The questionnaire included information regarding sociodemographic characteristics, maternal education and occupation, household income, maternal knowledge of malnutrition signs and causes, breastfeeding and complementary feeding practices, home-based management strategies, and barriers related to healthcare access and nutritional care.

Data were entered and analyzed using Statistical Package for Social Sciences (SPSS) version 27. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize study variables. Chi-square tests were applied to assess associations between maternal socioeconomic characteristics and knowledge or practice-related outcomes. A p-value ≤ 0.05 was considered statistically significant. Ethical approval was obtained from the Research Ethics Committee, Liaquat University of Medical and Health Sciences, and informed consent was obtained from all participants before data collection. Confidentiality and anonymity of participants were maintained throughout the study.

Results

A total of 328 mothers with children aged 6 months to 5 years were included in the study. The findings are presented in three tables covering sociodemographic characteristics, child nutritional status and maternal recognition of malnutrition, and home management practices and healthcare-related barriers.

Table 1. Sociodemographic Characteristics of Mothers and Children (n=328)

Variables	Frequency (n)	Percentage (%)
Child age group		
6–11 months	112	34.1
12–23 months	161	49.1
24–35 months	40	12.2
36–47 months	11	3.4
48–59 months	4	1.2
Child gender		
Male	153	46.7
Female	175	53.3
Mother education		
No formal schooling	304	92.7

Primary education	22	6.7
Middle education	1	0.3
Matric education	1	0.3
Mother occupation		
Housewife	245	74.7
Daily wage laborer	79	24.1
Skilled worker	4	1.2
Father occupation		
Farmer/agriculture worker	134	40.9
Daily wage laborer	127	38.7
Skilled worker	37	11.3
Unemployed	29	8.8
Government/private employee	1	0.3
Monthly household income		
<25,000 PKR	324	98.8
>25,000 PKR	4	1.2

The majority of children were aged between 12–23 months (49.1%), followed by 6–11 months (34.1%). Female children represented a slightly higher proportion (53.3%) compared with males (46.7%). Most mothers had no formal education (92.7%), and the majority were housewives (74.7%). Nearly all households had a monthly income below 25,000 PKR (98.8%), indicating substantial socioeconomic vulnerability.

Table 2. Child Nutritional Status and Maternal Recognition of Malnutrition (n=328)

Variables	Frequency (n)	Percentage (%)
Nutritional status of children		
Severe Acute Malnutrition (SAM)	201	61.3
Moderate Acute Malnutrition (MAM)	127	38.7
Child MUAC measurement		

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<11.5 cm	92	28.1
11.5–12.4 cm	96	29.3
10–11 cm	92	28.1
>12.5 cm	48	14.6
Pitting edema present		
Yes	10	3.0
No	318	97.0
Mother heard the term malnutrition		
Yes	1	0.3
No	327	99.7
Mother knew signs of malnutrition		
Yes	139	42.4
No	189	57.6

The nutritional assessment showed that 61.3% of children were classified as having Severe Acute Malnutrition, while 38.7% had Moderate Acute Malnutrition. Most children did not have pitting edema (97.0%). Maternal recognition of malnutrition was extremely limited, with 99.7% of mothers reporting that they had never heard the term malnutrition. More than half of mothers (57.6%) were unable to identify signs of malnutrition.

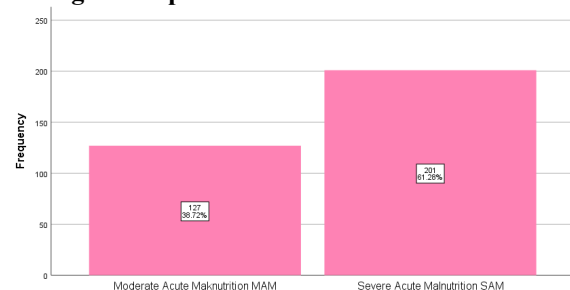
Table 3. Maternal Feeding Practices, Home Management and Healthcare Barriers (n=328)

Variables	Frequency (n)	Percentage (%)
Breastfeeding practice		
Breastfed child	317	96.6
Did not breastfeed	11	3.4
Exclusive breastfeeding for 6 months		
Yes	108	32.9
No	220	67.1
Introduction of solid/semi-solid food		

Before 6 months	33	10.1
At 6 months	295	89.9
Major causes of malnutrition identified by mothers		
Insufficient food	Reported	—
Lack of dietary diversity	Reported	—
Poverty/lack of income	Reported	—
Frequent illness/infections	Reported	—
Major barriers in managing child nutrition		
Lack of money	224	68.3
Limited healthcare access	Reported	—
Lack of dietary variety	Reported	—

Although breastfeeding was common among participants (96.6%), only 32.9% of mothers reported exclusive breastfeeding for six months. Financial constraints represented the most frequent challenge in managing childhood nutrition, affecting 68.3% of mothers. Other reported barriers included limited healthcare access and inadequate dietary diversity.

Figure 1. Distribution of Child Nutritional Status Among Participants



The figure demonstrates the predominance of Severe Acute Malnutrition among enrolled children, with SAM accounting for 61.3% of cases compared with 38.7% classified as Moderate Acute Malnutrition. The study population consisted mainly of children below two years of age from highly disadvantaged households. Severe acute malnutrition was the dominant nutritional condition, while maternal

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awareness regarding malnutrition recognition remained very poor. Despite high breastfeeding rates, gaps were observed in exclusive breastfeeding practices and mothers faced substantial financial and healthcare access barriers affecting home management of childhood malnutrition.

Discussion

This study assessed maternal recognition and home management practices of malnutrition among children under five years in Union Council Jhuddo, District Mirpurkhas, Sindh. The findings demonstrate a high burden of acute malnutrition among children enrolled at the OTP site, along with considerable gaps in maternal awareness, nutritional knowledge, and home-based management practices. The study population mainly consisted of children below two years of age, and Severe Acute Malnutrition (SAM) represented the majority of cases. These findings highlight the complex interaction between child nutritional status, maternal education, household poverty, feeding practices, and access to healthcare services.

In the present study, 61.3% of children were classified as having Severe Acute Malnutrition (SAM), while 38.7% had Moderate Acute Malnutrition (MAM). The high proportion of SAM reflects the severity of nutritional vulnerability among children requiring therapeutic nutritional support. Childhood acute malnutrition remains a major public health concern globally, particularly in low- and middle-income countries where poverty, food insecurity, inadequate dietary intake, and recurrent infections contribute to poor nutritional outcomes.^{15–18} Similar determinants of childhood malnutrition have been reported in Pakistan, where socioeconomic disadvantage and limited access to appropriate nutrition services increase the risk of undernutrition among children.^{19,20} The present study identified extremely poor maternal recognition of malnutrition. Almost all mothers (99.7%) reported that they had never heard the term malnutrition, while more than half (57.6%) were unable to identify signs of malnutrition. Maternal awareness is a critical factor in early detection because mothers are generally responsible for observing children's growth, feeding patterns, and illness symptoms. Previous research has demonstrated that inadequate maternal knowledge delays recognition of nutritional problems and reduces timely healthcare-seeking behavior.^{21–23} Studies have also shown that maternal empowerment and education significantly influence child nutrition outcomes by improving decision-making capacity, feeding practices, and healthcare utilization.²⁴

The very low educational status of mothers in this study may explain the observed knowledge gaps. More than 92% of mothers had no formal education, indicating substantial educational vulnerability.

Maternal education has consistently been identified as an important determinant of child nutritional status. Educated mothers are more likely to understand appropriate breastfeeding practices, complementary feeding recommendations, hygiene measures, and early warning signs of malnutrition.^{25,26} Previous studies have also demonstrated that children of mothers with limited education have higher risks of undernutrition due to inadequate feeding practices and delayed healthcare access.²⁷

Breastfeeding practices showed both positive and concerning findings. Although breastfeeding was reported by 96.6% of mothers, only 32.9% practiced exclusive breastfeeding for six months. Breastfeeding provides essential nutrients, immune protection, and protection against childhood infections; however, inadequate exclusive breastfeeding and inappropriate complementary feeding remain important contributors to childhood malnutrition.^{28,29} The World Health Organization recommends exclusive breastfeeding for the first six months followed by appropriate complementary feeding while continuing breastfeeding up to two years or beyond.³⁰ Previous studies from South Asian populations have highlighted that low maternal knowledge, socioeconomic limitations, and cultural beliefs frequently influence complementary feeding practices.³¹

Financial constraints were identified as the most common barrier affecting management of childhood malnutrition, reported by 68.3% of mothers. Poverty is a major underlying determinant of childhood undernutrition because it restricts access to nutritious foods, healthcare services, and preventive interventions.^{32,33} Low-income households often experience food insecurity, inadequate dietary diversity, and difficulty obtaining timely medical care, which may worsen nutritional outcomes.³⁴ The relationship between poverty and malnutrition demonstrates that nutritional interventions must address broader socioeconomic determinants rather than focusing only on food supplementation.

Environmental and healthcare-related factors also contribute significantly to childhood malnutrition. Poor sanitation, unsafe water, and recurrent infections can reduce nutrient absorption and increase nutritional requirements, creating a cycle between infection and undernutrition.^{35,36} Evidence suggests that effective management of childhood malnutrition requires integrated approaches combining nutrition interventions, infection prevention, maternal education, and improved access to healthcare facilities.³⁷

The findings have important implications for public health practice. Since mothers are the primary caregivers, improving maternal nutritional literacy should be a central component of malnutrition

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prevention strategies. Community health workers can play an important role through nutrition counseling, growth monitoring, breastfeeding promotion, and early identification of malnutrition symptoms. Community-based management of acute malnutrition programs has shown effectiveness in improving access to treatment and reducing barriers for vulnerable children, particularly in resource-limited settings.^{38, 39} This study also highlights the need for multisectoral interventions addressing poverty, education, healthcare access, and household food security. Evidence-based nutrition programs that combine maternal education, breastfeeding support, dietary improvement, and social protection measures have demonstrated potential in reducing childhood malnutrition.⁴⁰

This study has several limitations. First, the cross-sectional design prevents establishing causal relationships between maternal characteristics and child nutritional outcomes. Second, maternal knowledge and home practices were assessed through self-reported information, which may be affected by recall bias or social desirability bias. Third, participants were recruited from an OTP site; therefore, the findings may represent children with existing nutritional problems and may not be generalizable to all children under five years in the community. Finally, detailed dietary intake and household food security assessment were not performed.

Despite these limitations, this study provides important evidence regarding maternal recognition and home management challenges among malnourished children in rural Sindh. The findings emphasize the urgent need for strengthening maternal education, improving nutritional counseling, expanding community-based nutrition services, and addressing socioeconomic barriers to reduce childhood malnutrition.

Conclusion

This study highlights a high burden of acute malnutrition among children under five years in Union Council Jhuddo, with Severe Acute Malnutrition being the predominant nutritional condition. Maternal recognition of malnutrition was considerably inadequate, and socioeconomic barriers significantly affected home management practices. Strengthening maternal nutrition education, improving breastfeeding and feeding practices, and expanding accessible community-based nutrition services are essential to reduce childhood malnutrition.

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