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Original Research Article

Nurses' Knowledge and Practices Regarding Malnutrition in Children and Its Management

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Abstract: *Malnutrition remains a significant contributor to childhood morbidity and mortality, especially in low- and middle-income countries like Pakistan. Nurses play a vital role in the early identification and management of pediatric malnutrition.* ***Objective:*** *To assess nurses' knowledge and clinical practices regarding malnutrition in children and its management at a tertiary care hospital in Lahore, Pakistan.* ***Methods:*** *A descriptive cross-sectional study was conducted among 150 registered female nurses selected through convenience sampling. Data were collected using a structured, pre-tested questionnaire assessing demographic characteristics, knowledge, and practices related to pediatric malnutrition. Descriptive statistics were analyzed using SPSS version 25, and results were categorized into low, average, and high levels of knowledge and practice.* ***Results:*** *Among the participants, 37.3% demonstrated high knowledge, 35.3% average, and 27.3% low knowledge regarding pediatric malnutrition. However, only 32.7% exhibited average practices, while the majority (67.3%) demonstrated low practice scores. While most nurses correctly identified key concepts related to malnutrition, a significant gap was noted between knowledge and its practical application in clinical care.* ***Conclusion:*** *Although many nurses possessed satisfactory theoretical knowledge of malnutrition, the overall practice levels were suboptimal. This highlights the urgent need for continuous professional development and structured training programs focused on the practical management of malnutrition in pediatric settings.*

Keywords: Nurses, Knowledge, Practice, Malnutrition, Pediatric care, Nutritional management

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Introduction

Malnutrition continues to be a major global health challenge, particularly in low- and middle-income countries, where it contributes significantly to childhood morbidity, mortality, and developmental delays. Globally, an estimated 45 million children under the age of five are affected by wasting, and approximately 149 million are stunted due to chronic undernutrition, with the highest prevalence observed in South Asia and Sub-Saharan Africa (1). In Pakistan, the National Nutrition Survey 2018 reported that 40.2% of children under five are stunted, 17.7% are wasted, and 28.9% are underweight, highlighting a critical public health concern that requires immediate and sustained intervention (2).

Malnutrition compromises physical growth and affects neurocognitive development, academic performance, and long-term productivity. It increases vulnerability to infectious diseases such as diarrhea, pneumonia, and measles, further exacerbating nutritional deficiencies (3). Early identification and timely management of malnutrition are key strategies to reduce its impact. Nurses, being frontline healthcare providers, play a pivotal role in the detection, prevention, and management of malnutrition in pediatric populations, especially in inpatient settings (4). Their ability to observe feeding practices, recognize signs of nutritional deficiency, and implement nutrition-related interventions makes them essential stakeholders in tackling this issue (5).

Despite their central role, evidence suggests that many nurses lack adequate knowledge and skills in nutritional assessment and management, particularly in low-resource settings. Several studies have documented insufficient training, lack of standardized clinical protocols, and limited continuing education opportunities as major barriers to effective nursing practice in this area (6,7). Strengthening nurses' competencies through targeted education and institutional support is therefore crucial to improving the nutritional outcomes of hospitalized children (8).

This study was conducted to assess the current level of knowledge and practices among nurses regarding malnutrition in children and to identify areas requiring improvement. The findings aim to inform hospital administrators and policymakers about the existing gaps and the need for structured training programs to enhance pediatric nutritional care.

Methodology

This descriptive cross-sectional study was conducted to assess the knowledge and practices of registered nurses regarding malnutrition in children and its clinical management. The study was carried out at a tertiary care hospital in Lahore, Pakistan, which caters to a wide range of pediatric patients. The study population included registered female nurses currently working in pediatric and related wards. Inclusion criteria comprised nurses aged 20 to 60 years, registered with the Pakistan Nursing Council (PNC), with at least six months of clinical experience in pediatric or general nursing, and who provided informed consent. Nurses who were on extended leave or serving in administrative roles were excluded from the study.

A total of 150 participants were recruited through a non-probability convenience sampling technique. Data were collected using a structured, pre-tested questionnaire based on a comprehensive literature review and aligned with the World Health Organization (WHO) guidelines on malnutrition management. The questionnaire consisted of three parts: demographic information, knowledge-based questions related to malnutrition (e.g., causes, signs, symptoms), and questions regarding routine nursing practices in the management of malnourished children. The tool was validated by a panel of clinical nursing experts and piloted on a group of 10 nurses (excluded from the main study). The internal consistency of the tool was measured using Cronbach's alpha, yielding a reliability score of 0.82.

The data collection process took place over four weeks in March 2024. Questionnaires were distributed during work hours, and participants were given adequate time to complete them. Confidentiality and anonymity were assured throughout the study. Ethical approval was obtained from

the Institutional Review Board of the participating hospital, and the study adhered to the principles outlined in the Declaration of Helsinki. Participants were informed about the voluntary nature of the study and their right to withdraw at any stage without penalty.

Data were analyzed using IBM SPSS version 25. Descriptive statistics, including frequencies and percentages, were used to summarize categorical variables. Knowledge and practice scores were classified into low, average, and high categories based on predetermined thresholds: scores of 50% or below were categorized as low, scores between 51% and 74% as average, and scores of 75% and above as high.

Results

A total of 150 registered female nurses participated in the study (100%). The largest age group was 31–35 years (n = 75, 50%), followed by 26–30 years (n = 49, 32.7%). Participants aged 36–40 accounted for 11.3% (n = 17), while those aged 20–25 and above 40 comprised 4% (n = 6) and 2% (n = 3), respectively (Table 1).

Regarding educational background, the majority of nurses held a Bachelor of Science in Nursing (BSN) degree (n = 98, 65.3%), while 26% (n = 39) had specialized post-basic qualifications, and only 8.7% (n = 13) held a general nursing diploma (Table 2).

Concerning clinical experience, 50% (n = 75) had 2–5 years of professional experience, 43.3% (n = 65) had 5–10 years, while fewer nurses had either less than 1 year (2.7%, n = 4) or more than 10 years (4.0%, n = 6) of experience (Table 3).

The majority of participants demonstrated good basic conceptual knowledge regarding malnutrition. A total of 90% (n = 135) correctly identified that malnutrition results from an imbalance between energy intake and expenditure. Similarly, 84.7% (n = 127) acknowledged that energy deficiency leads to marasmus, and 92.7% (n = 139) recognized protein deficiency as the cause of kwashiorkor.

Furthermore, 96% (n = 144) identified undernutrition as a primary cause of malnutrition, and 80.7% (n = 121) correctly reported bilateral pitting edema as a cardinal sign of kwashiorkor (Table 4).

When knowledge scores were categorized, 37.3% (n = 56) of nurses demonstrated high knowledge, 35.3% (n = 53) had an average level, while 27.3% (n = 41) had low knowledge about pediatric malnutrition and its management (Table 5).

In terms of practice, 82% (n = 123) reported checking random blood sugar on admission, while 60% (n = 90) administered appropriate treatment in cases of hypoglycemia. Additionally, 64% (n = 96) initiated feeding within 30 minutes of admission. However, warmth provision using blankets or heaters was reported by only 45.3% (n = 68), indicating a significant gap in this aspect of care.

Temperature monitoring was performed and documented by all nurses (100%, n = 150), while 91.3% (n = 137) assessed patients for dehydration. However, monitoring of rehydration therapy was carried out by only 54% (n = 81) of the participants (Table 6).

Practice scores revealed that the majority of nurses (67.3%, n = 101) had low levels of adherence to standard practices in malnutrition management. Only 32.7% (n = 49) demonstrated average practices, while none of the participants scored in the high practice category (Table 7).

Table 1. Age Distribution of Participants

Age Group	Frequency	Percentage (%)
20–25 years	6	4.0
26–30 years	49	32.7
31–35 years	75	50.0
36–40 years	17	11.3
>40 years	3	2.0

Table 2. Educational Background of Participants

Qualification	Frequency	Percentage (%)
General Nursing	13	8.7
BSN	98	65.3
Specialty Degree	39	26.0

Table 3. Clinical Experience of Participants

Experience	Frequency	Percentage (%)
<1 year	4	2.7
2–5 years	75	50.0
5–10 years	65	43.3
>10 years	6	4.0

Table 4. Key Knowledge Responses on Malnutrition

Statement	Correct (%)
Malnutrition = energy imbalance	90.0
Energy deficiency causes marasmus	84.7
Protein deficiency causes kwashiorkor	92.7
Undernutrition as common cause of malnutrition	96.0
Bilateral pitting edema is a sign of kwashiorkor	80.7

Table 5. Knowledge Score Categorization

Category	Frequency	Percentage (%)
Low Knowledge	41	27.3
Average	53	35.3
High Knowledge	56	37.3

Table 6. Practices in Management of Malnutritio

Practice Item	Done (%)
Random blood sugar checked on admission	82.0
Hypoglycemia appropriately treated	60.0
First feed within 30 minutes of admission	64.0
Warmth provided (blankets, heaters)	45.3
Temperature monitored and documented	100.0
Dehydration assessment	91.3
Monitoring of rehydration	54.0

Table 7. Practice Score Categorization

Category	Frequency	Percentage (%)
Low Practice	101	67.3
Average Practice	49	32.7
High Practice	0	0.0

Discussion

This study aimed to assess the knowledge and practices of nurses regarding malnutrition in children and its management within a tertiary care hospital in Lahore, Pakistan. The findings revealed that while a reasonable proportion of nurses demonstrated high knowledge (37.3%), a significant number still exhibited either average (35.3%) or low knowledge levels (27.3%). In contrast, the majority (67.3%) scored low in practice-related domains, indicating a substantial gap between theoretical knowledge and its application in clinical care.

These results align with previous literature suggesting that nurses often possess foundational knowledge regarding the definitions and causes of malnutrition, yet struggle with the clinical implementation of standard nutritional protocols in pediatric care settings (9). Similar findings were reported in a cross-sectional study conducted in Ghana, where despite awareness of malnutrition indicators, most nurses lacked routine application of recommended practices such as timely feeding, warmth provision, and monitoring of rehydration (10).

The observed gap between knowledge and practice may be attributed to a lack of structured continuing education, workload stress, and the absence of nutrition-specific protocols in routine nursing practice. A study from Ethiopia highlighted that inadequate training and limited access to clinical guidelines were primary barriers preventing effective implementation of

malnutrition management protocols among nursing staff (11). In our study, while 96% of nurses could correctly identify undernutrition as the most common form of malnutrition, only 45.3% reported providing warmth (blankets/heaters), and 46% monitored rehydration therapy—both critical components of pediatric nutritional care.

Furthermore, this disconnect emphasizes the importance of practical skill development alongside theoretical instruction. Evidence suggests that simulation-based learning, bedside case discussions, and integrated nutritional assessment tools can significantly improve the clinical competence of nurses in managing malnutrition (12). In a European multi-country study, nurses who received structured training demonstrated significantly higher competency scores and better compliance with nutritional care protocols (13).

Additionally, contextual factors such as limited staffing, insufficient dietary supplements, and low prioritization of nutrition in busy wards may also contribute to suboptimal practice outcomes. Studies from similar low- and middle-income healthcare settings have underlined the need for institutional support, including the development of nutrition-focused policies, the appointment of dedicated nutrition link nurses, and regular audits to bridge the knowledge-practice gap (14).

The findings of this study reinforce the critical role of nurses in early identification and comprehensive management of pediatric malnutrition. Given their close proximity to patients and families, empowering nurses through targeted interventions such as in-service training programs, access to updated guidelines, and inclusion in multidisciplinary nutrition teams is vital to reduce malnutrition-related complications and mortality. Although our findings are consistent with international literature, the study was limited to a single center and included only female nurses, which may affect generalizability. Future studies should explore multi-center assessments and include interventional models to evaluate the impact of targeted education on knowledge and practice improvements.

Conclusion

The study concludes that while many nurses demonstrated adequate knowledge regarding pediatric malnutrition, their clinical practices remain inadequate. Bridging this gap through targeted training, regular refresher courses, and evidence-based clinical protocols is essential to enhance pediatric nutritional care and reduce malnutrition-related complications.

Declarations

Data Availability statement
All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate
Approved by the department concerned. (IRBEC-SNBCX-88-24)

Consent for publication
Approved

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Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

AR (Vice Principal)
Manuscript drafting, Study Design,
Review of Literature, Data entry, Data analysis, and drafting article.
RA (Assistant Nursing Superintendent)
Conception of Study, Development of Research Methodology Design, Study Design, manuscript review, critical input.
All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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