




Nursing practices in the management of pediatric malnutrition in a hospital in the Machala canton

Prácticas de enfermería en la gestión de la desnutrición pediátrica en un hospital del cantón Machala

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ABSTRACT

Childhood malnutrition is a global issue that affects children aged 0 to 5 years in various regions. This condition results from an inadequate intake of essential macronutrients and micronutrients, such as vitamins and minerals, crucial for the physical and cognitive development of children. The aim of this research was to identify the interventions by nursing staff in the treatment of malnutrition among pediatric patients in the Pediatric Service of a hospital in Machala canton. The methodology employed was quantitative, descriptive, and cross-sectional. The sample comprised 8 nursing graduates from the hospital's Pediatric Service, representing the entire population in the area. The findings revealed that 37.50% of parents or caregivers received ongoing education on child nutritional care, while 62.50% received it occasionally. In the care plan, 100% of nurses concurred on the importance of implementing a personalized plan that includes parenteral or enteral nutrition, the administration of nutritional supplements, and the promotion of adequate nutrition. Education on child nutrition for parents and caregivers tends to be sporadic and uneven. Enhancing the consistency and accessibility of this education could optimize the nutritional status and development of children. Moreover, all nursing professionals develop personalized plans that encompass parenteral and enteral nutrition as well as nutritional supplements, highlighting their commitment to effective recovery and the improved quality of life for pediatric patients.

Keywords: child malnutrition, nutritional status, nursing intervention, care plan.

RESUMEN

La malnutrición infantil es un problema global que afecta a niños de 0 a 5 años en diversas regiones. Esta condición se origina por una ingesta inadecuada de macronutrientes y micronutrientes esenciales, como vitaminas y minerales, fundamentales para el desarrollo físico

y cognitivo en la infancia. El objetivo de esta investigación fue identificar las intervenciones del personal de enfermería en el tratamiento de la desnutrición en pacientes pediátricos en el Servicio de Pediatría de un hospital en el cantón Machala. La metodología empleada fue cuantitativa, descriptiva y de corte transversal. La muestra consistió en 8 licenciados en enfermería del Servicio de Pediatría del hospital, abarcando la totalidad de la población en el área. Los resultados revelaron que el 37,50% de los padres o cuidadores reciben educación continua sobre cuidado nutricional infantil, mientras que el 62,50% la recibe de manera ocasional. En el plan de cuidados, el 100% de los enfermeros coincidieron en la importancia de implementar un plan personalizado que incluya nutrición parenteral o enteral, administración de suplementos nutricionales y promoción de una alimentación adecuada. La educación sobre nutrición infantil para padres y cuidadores tiende a ser esporádica y desigual. Mejorar la consistencia y accesibilidad de esta educación puede optimizar el estado nutricional y el desarrollo de los menores. Asimismo, todos los profesionales de enfermería elaboran planes personalizados que abarcan nutrición parenteral y enteral, así como suplementos nutricionales, lo que destaca su compromiso con una recuperación efectiva y la mejora en la calidad de vida de los pacientes pediátricos.

Palabras claves: desnutrición infantil, estado nutricional, intervención de enfermería, plan de cuidados.

INTRODUCTION

Childhood malnutrition is a global challenge affecting children aged 0-5 years in various regions. This condition results from an insufficient intake of essential macronutrients and micronutrients, including vitamins and minerals, crucial for optimal physical and cognitive development in children. Despite advances in healthcare and nutritional policies, malnutrition remains a significant cause of morbidity and mortality in the pediatric population (Álvarez, 2019). Often, childhood malnutrition is closely linked to socioeconomic factors, limited access to nutritious foods, inadequate feeding and care practices, and lack of access to sufficient health services (Rivera, 2022).

Childhood malnutrition arises from inadequate food intake and infectious diseases. Underlying factors include limited access to food, poor healthcare, and inadequate care practices. The root causes are social, economic, and political, such as poverty and low maternal education. The effects include delays in growth and development, increased risk of disease, and reduced physical capacity and academic performance (Picbougoum et al., 2023; Cueva et al., 2021). Recent studies have shown that food insecurity and unfavorable living conditions exacerbate these issues, perpetuating the cycle of poverty and malnutrition (Zhao et al., 2020).

In Ecuador, 26% of children between zero and five years of age suffer from chronic malnutrition, with a higher prevalence in rural areas, where it affects 35.7% of children, and is even more pronounced among indigenous children, with rates above 40%. Furthermore, a significant percentage of children under five years of age experienced diarrheal and acute respiratory diseases according to the Nutrition and Health Survey (ENSANUT, 2018): 10.8% and 34.2%

respectively, seven days before the survey (Flores and Congacha, 2021; Carrasco, 2019). This underscores the need for specific and sustainable interventions to combat malnutrition in these vulnerable communities.

Lack of adequate care for these diseases can lead to serious or even fatal complications. To mitigate childhood malnutrition, it is essential to promote a balanced, diverse, and nutrient-rich diet, including a variety of whole grains, legumes, and vegetables (Melgarejo et al., 2022). Nutritional supplementation and education programs have proven effective in improving the nutritional status of children in various regions (Martínez et al., 2023). The nutritional health of children is intrinsically linked to their growth and development throughout their lives, which must be assessed considering the adequate weight and height growth that results from balanced nutrition. Addressing this issue is a challenge, since from gestation to five years of age, one of the most critical stages in the physical and neurocognitive development of individuals occurs (Lovera and Cáceres, 2023). Early interventions are key to preventing irreversible damage to child development (Hernández et al., 2023).

In contexts where childhood malnutrition is prevalent, nurses frequently care for children with severe malnutrition in their daily clinical practice. Their main objective is to protect and improve the health of children, providing adequate nutritional guidance to the pediatric population. In addition, nurses prioritize providing essential care in children's nutrition, offering assistance, education, guidance, and training from a family and social perspective of the child (Alulema et al., 2023). Implementing effective educational strategies can empower families and significantly improve nutritional outcomes (Melgarejo et al., 2022).

A comprehensive approach to caring for malnourished children is vital; this involves not only treating malnutrition but also addressing underlying causes and any comorbidities. Education for families and coordination with other health professionals are crucial components of this comprehensive approach (Cuenca and Meza, 2020). Studies have shown that interprofessional collaboration improves health outcomes in malnourished children (Guamialamá et al., 2021).

Nursing interventions to treat malnutrition in children include monitoring nutritional status, educating caregivers about proper diet, and administering nutritional supplements when necessary. Additionally, the nursing role includes checking for possible complications such as infections and digestive problems that are common in malnourished children (Guanga et al., 2022). Continuous training of nurses in malnutrition monitoring and management techniques is essential to improve the quality of care (Paz et al., 2022).

There is a lack of understanding and detailed documentation about specific nursing interventions and their impact on the recovery of severely malnourished pediatric patients in the Pediatrics service of a hospital in the Machala canton. Although the importance of the role of nurses in the management of childhood malnutrition is recognized, there is a lack of studies that comprehensively evaluate how these interventions contribute to improving

the nutritional health and development of malnourished children in this specific context.

METHODOLOGY

The design of this research was quantitative, descriptive, and cross-sectional. The sample consisted of eight nursing graduates from the Pediatrics Service of a hospital in the Machala canton. The inclusion criteria included only nursing graduates, excluding nursing interns, nursing assistants, and doctors in the area. The sampling was non-probabilistic for convenience.

A survey was applied with a questionnaire previously validated by experts. The experts selected for the validation of the questionnaire had experience in the area of pediatrics and child nutrition, with at least five years of clinical practice and postgraduate academic training in these areas. A rubric based on criteria of clarity, relevance, and pertinence of the items was used to ensure the validity of the instrument.

The questionnaire included nine closed questions with trichotomous answers (yes, no, and sometimes) and one open question, which was subsequently coded. The variables evaluated were education, collaborative work, and care plan. Ethical aspects of the study were taken into account; prior to data collection, permission was requested through a letter from the competent authority of the institution. In addition, participants signed an informed consent to participate voluntarily.

Data protection was ensured by anonymizing the questionnaires, secure storage in an encrypted database, and restricted access only to the research team. The data collected were tabulated and analyzed using the IBM SPSS Statistics program version 26. During the statistical analysis, descriptive statistics were used to summarize the information and nonparametric tests were used to identify significant differences between the variables studied.

RESULTS

Nursing plays a pivotal role in addressing pediatric malnutrition by administering nutritional supplements, educating parents and caregivers, and closely monitoring patient responses. Nurses are also crucial in ensuring that patients receive adequate nutrition and collaborate extensively with the medical team to fulfill all nutritional requirements.

As illustrated in Table 1, a significant majority of the professionals surveyed are women. This high proportion of female nursing staff mirrors broader trends within the profession and may impact work dynamics as well as interactions with patients and their families. Regarding the age distribution, there is a notable diversity among the staff, with 37.50% aged between 35 and 40 years. This mix of different ages brings together varied levels of experience and perspectives, potentially enriching the implementation of nutritional interventions and the adaptation to innovative practices.

Table 1. Sociodemographic data of participants

Items	Options	Frequency	Percentage
Sex	Masculine	1	12.5%
	Femenine	7	87.5%
Age	25-30	1	12.5%
	30-35	2	25.0%
	35-40	3	37.5%
	40-45	1	12.5%
	45-50	1	12.5%
	>50	0	0.0%
Work experience	1-3 years	6	75.0%
	4-7 years	2	25.0%
	More than 7 years	0	0.0%

The variability in work experience among nursing professionals can significantly impact the effectiveness of nutritional interventions in pediatric care. More seasoned nurses are often better equipped to manage complex cases of pediatric malnutrition due to their extensive experience.

According to a study by Moreta et al. (2019), it is crucial for a licensed nurse specializing in pediatric care to possess both solid theoretical and practical training, as well as a genuine passion for working with children. The study's findings reveal that 60% of the respondents have between 1 and 5 years of experience, 35% have 6 to 10 years, and 5% boast more than 10 years in the field. These statistics underscore the importance of robust training and a deep interest in pediatric care. Furthermore, they highlight the need to promote ongoing professional development within this specialty. Continuous education and training are vital for providing high-quality, comprehensive care to pediatric patients, which must be tailored to their unique needs and the evolving landscape of medical and nursing practices (Melgarejo et al., 2022).

Table 2. Education

Items	Options	Frequency	Percentage
Are the patient's parents or caregivers routinely educated by nursing staff about the importance of proper nutrition, nutritional supplementation, and other aspects of nutritional care?	Yes	3	37.5%
	No	0	0.0%
	Sometimes	5	62.5%

Table 2 reveals that only 37.50% of the patients' parents or caregivers receive consistent education on infant nutritional care, whereas 62.50% receive such education only occasionally. This irregularity in educational support is concerning given that childhood malnutrition continues to be a widespread issue. Cuenca and Meza (2020) emphasize the necessity of implementing educational programs targeted at families to provide continuous guidance on infant nutrition. These initiatives are critical for instilling effective nutritional practices, which can significantly reduce the risks of malnutrition and associated health issues in children. Thus, it is imperative to enhance and regularize nutritional education to ensure the healthy development of children.

In a related study by Martínez et al. (2023), it was found that 34% of surveyed mothers received information from nursing staff about breastfeeding, which is crucial in the initial days of an infant's life. Additionally, 16% received advice on maternal weaning, 18% on complementary feeding,

and 32% on child growth and development. This type of guidance not only supports healthy child development but also empowers mothers to make informed decisions regarding their child's care. Etcheagaray and Bustos (2021) highlight the critical role of nursing staff in ensuring that mothers receive the necessary support from the outset, which significantly contributes to the health and well-being of the child. This underlines the importance of structured and continuous educational efforts by healthcare professionals to address and mitigate the challenges of childhood nutrition effectively.

Table 3. Collaborative work

Items	Options	Frequency	Percentage
Does the nurse work closely with the medical team, including nutritionists, pediatricians, and other specialists, to ensure a comprehensive approach to treating malnutrition?	Yes	4	50.0%
	No	0	0.0%
	Sometimes	4	50.0%

Table 3 illustrates that 50% of the staff consistently collaborates with specialists for the comprehensive treatment of malnutrition, while the remaining 50% does so occasionally. Ortiz et al. (2022) stress the importance of collaboration among doctors, nutritionists, pharmacists, physiotherapists, and nurses in the clinical practice of nutritional support to deliver effective care to patients at risk, emphasizing the pivotal role of nursing. Therefore, interdisciplinary collaboration is crucial for the comprehensive treatment of malnutrition, as it allows for more complete and coordinated care (Ríos et al., 2022).

The management of nutritional therapy for critically ill children necessitates a comprehensive and specialized approach due to the complexity and sensitivity of these cases. Etcheagaray et al. (2022) underline the significance of such therapy being managed by a multidisciplinary team, including a nutritionist specializing in intensive nutritional care. This specialization is essential to enhance and optimize nutrient administration. These professionals possess detailed knowledge about the specific nutritional needs of critically ill children and are adept at designing and adjusting nutritional plans that maximize nutrient absorption and facilitate recovery (Martínez et al., 2023). Moreover, their collaboration with other specialists ensures ongoing supervision and the necessary adjustments in nutritional therapy, adapting to the patient's evolving conditions (Hernández et al., 2023).

Table 4 shows that 100% of the surveyed nurses concur on the importance of implementing a personalized care plan that includes parenteral or enteral nutrition, the administration of nutritional supplements, and the promotion of adequate nutrition for the patient. This unanimous agreement underscores the critical role that nursing professionals play in the comprehensive management of patient nutritional health, reflecting their commitment to ensuring the best possible outcomes for those under their care.

Table 4. Care plans

Items	Options	Frequency	Percentage
Based on the assessment, is a personalized care plan developed for the patient including parenteral or enteral nutrition, administration of nutritional supplements, and promotion of adequate nutrition?	Yes	8	100.0%
	No	0	0.0%
	Sometimes	0	0.0%
	Gathering information	1	12.5%
How does a nurse intervene in the event of a possible complication of malnutrition in a pediatric patient?	Evaluating nutritional status	4	50.0%
	Planning interventions	1	12.5%
	Collaborative work	2	25.0%

According to Etchegaray et al. (2020), the enteral route is regarded as the most physiological, safe, and preferred method for providing nutritional support to critically ill children. The study further emphasizes that the selection of an appropriate enteral formula should be personalized, tailored to meet the specific nutritional needs and metabolic alterations of each child. Given that each patient has a unique metabolic profile, a standardized formula may not sufficiently address all their needs (Picbougoum et al., 2023). Therefore, personalized care is crucial to ensure the correct nutrients are provided in appropriate amounts. This approach underlines the significance of meticulously planned and executed nutritional care, supported by a multidisciplinary team and grounded in evidence-based practices (Moreta et al., 2019).

Research conducted by Paz et al. (2020) reveals that 67% of professionals claim to understand the stages required to implement a nursing intervention across different degrees of malnutrition, indicating their capability to apply this knowledge in practical settings with patients. Conversely, the remaining 33% reported unfamiliarity with these stages, highlighting the need for further training and capacity building among professionals and staff to enhance their expertise in this specialized area. It is essential to note that inadequate preparation can directly impact clinical practice, potentially affecting the quality of care and health outcomes for malnourished patients. Hence, the development and implementation of personalized care plans that promote patient improvement and recovery are imperative (Alulema et al., 2023).

In addressing possible complications of malnutrition in pediatric patients, a variety of approaches and methods are observed in professional practice. This diversity reflects the varying perspectives adopted by respondents, which may be influenced by context and experience, shaping how complications of malnutrition are managed and addressed. Half (50%) of the professionals conduct a nutritional assessment, critical for identifying and quantifying malnutrition, adjusting interventions, and monitoring patient progress. A quarter (25%) of professionals prioritize collaborative work, underscoring the importance of a multidisciplinary approach to enhance intervention in pediatric malnutrition and improve comprehensive patient management. A small percentage (12.5%) engage in

information gathering, an essential activity to pinpoint underlying causes of malnutrition and support evidence-based decisions, while another 12.5% focus on care planning, which is fundamental to structuring interventions and establishing a clear action plan to guide nursing staff and the team (Romero et al., 2019).

In a study by Cortez and Pérez (2023), nursing professionals expressed their views on the essential characteristics needed to address childhood malnutrition effectively. Thirty-three percent consider that care should be comprehensive and multidisciplinary, addressing biopsychosocial needs and coordinating actions with other health areas. Seventeen percent believe that emphasis should be placed on the prenatal and postnatal period, advocating for systematic and periodic growth and development checks. Fifteen percent state that encouraging breastfeeding, a proven tool to prevent childhood malnutrition, is crucial. Thirteen percent indicate that nutritional education should be promoted for both mothers and fathers, making them part of the process, and nine percent point out the importance of conducting thorough follow-ups on malnutrition cases.

The insights from Cortez and Pérez (2023) provide a comprehensive view of the necessary qualities and the multidisciplinary approach required to effectively tackle pediatric malnutrition. While the current study delves into specific details on assessment, collaboration, and planning practices, both studies reinforce the necessity for comprehensive and well-coordinated care in the management of childhood malnutrition (Guamialamá et al., 2021).

Limitations

This study presents several limitations that must be acknowledged to better understand its scope and constraints. First, the sample was limited to eight nursing graduates from the Pediatric Service of a single hospital in Machala canton, which may not be representative of the broader population of nursing professionals in different contexts or regions. Additionally, the use of non-probabilistic convenience sampling could introduce biases, affecting the generalizability of the results.

Regarding the instruments used, although the questionnaire was validated by experts, its trichotomous nature and the inclusion of only one open question may limit the depth and variety of responses obtained. This design restricts the ability to capture more nuanced insights from participants. The statistical analysis, primarily based on descriptive statistics and non-parametric tests, may not adequately capture the complexities of the variables studied. Such methods are limited in their ability to explore deeper relationships among variables.

Moreover, while data protection measures were deemed adequate, they could have been bolstered by implementing additional safeguards such as independent audits of data management practices to ensure privacy and integrity.

Finally, the cross-sectional nature of the study precludes the establishment of causal relationships, restricting the findings to providing a descriptive snapshot of nursing interventions in pediatric malnutrition. These limitations should be carefully considered when interpreting the findings and underline the need for future research. Future studies should employ more robust designs and larger samples to

validate and expand upon the results obtained, thereby enhancing the reliability and applicability of the findings in similar healthcare settings.

CONCLUSIONS

The study highlights a critical concern: the ongoing education for parents and caregivers on child nutritional care is sporadic and insufficient. This underscores the urgent need to implement more consistent and accessible educational programs to enhance the nutritional status and development of pediatric patients. Such programs are vital for equipping parents and caregivers with the knowledge necessary to support their children's health effectively.

The collaboration between nursing staff and other health specialists also shows variability; while some professionals engage actively in multidisciplinary teamwork, others collaborate only occasionally. This inconsistency points to a need for more structured and systematized approaches to teamwork, ensuring comprehensive and coordinated care in the treatment of childhood malnutrition. Strengthening this collaboration could bridge gaps in care and leverage diverse expertise to improve patient outcomes.

Furthermore, all nursing professionals surveyed acknowledge the importance of implementing personalized care plans, which include parenteral or enteral nutrition, the administration of nutritional supplements, and the promotion of adequate nutrition. This consensus reflects a recognition of the effectiveness of personalized care plans in enhancing the quality of life and accelerating the recovery of malnourished pediatric patients. Personalized approaches are crucial as they allow treatments to be tailored to the specific needs and circumstances of each patient, thereby optimizing the efficacy of nutritional interventions.

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