RESEARCH ARTICLE

Malnutrition and associated factors among sick children needing hospital care in District Umerkot, Pakistan

Vistro JM, Mughal HS; Jowach (2023)


Abstract

Background: In the Umerkot area of Pakistan, where malnutrition is common, a local hospital discovered that one-third of the hospitalized children were undernourished. The purpose of this research was to identify the prevalence of malnutrition and its associated among pediatric inpatients.

Methods: A cross-sectional research was carried out on 298 children who were hospitalized to the District Headquarter Hospital in Umerkot and ranged in age from 06 months to 05 years. In order to determine malnutrition in accordance with WHO guidelines, anthropometry measures such as mid-upper arm circumference (MUAC) were taken. The clinical diagnosis, immunization history, and food intake were documented.

Results: The prevalence of malnutrition was 34.6%, with moderate (26.5%) and severe (8.1%) cases included. In children, underweight afflicted 29.5%. Common diagnoses during admission were measles (18.8%), pneumonia (17.4%), and diarrhea (15.8%). Malnutrition was significantly correlated with inadequate food intake and an age-inappropriate vaccination rate of 8.7%, which is in agreement with previous research results.

Conclusions: In order to address the critically high prevalence of inpatient malnutrition, pediatric care must include standards for nutritional assessment and treatment as well as capacity development. In local communities, it's also critical to do routine growth monitoring and to promote immunization, proper hygiene, and balanced diets.

Keywords: Malnutrition; Pediatrics; Nutritional status; Mid-upper arm circumference; Pakistan.

Layman Summary

This study shows that poor food, restricted vaccines, and inadequate treatment left 33% of Umerkot, Pakistan, hospitalised children malnourished. Almost 8.1% of them were very malnourished, especially rural children and measles patients. Their cereal-heavy diet lacked minerals, causing growth and development hinderance. Community efforts should promote growth monitoring, breastfeeding, diverse diet, cleanliness, and appropriate vaccines, while hospital based nutrition programmes require urgent improvement. This situation requires collaboration between healthcare, agriculture, and education to protect child health.

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Malnutrition in Hospitalized Children: A Public Health Priority

Deficits in calories, protein, or micronutrients may cause malnutrition, which can cause morbidity [1]. The World Health Organization (WHO) states that the primary factor contributing to the burden of illness worldwide is malnutrition. 150.8 million children under five stunted or waste as a result of iron, vitamin A, zinc, iodine, and folate deficits in their diets, and over 45% suffer from malnutrition [2]. Almost 75 percent of children under five who live in poverty are in the developing world [3].

Malnutrition has a major role in causing sickness and death in children under the age of five in low- and middle-income countries that are impacted by ongoing poverty, limited food availability, and insufficient public health systems [4,5]. Malnutrition may have long-lasting adverse consequences on social, cognitive, and motor abilities, as well as on physical growth and development [6]. Malnutrition leads to immunological damage, increasing an individual's vulnerability to infectious infections. This further worsens undernutrition and establishes a hazardous feedback process [7].

Hospitalization is a crucial chance to detect and tackle malnutrition, particularly in severe instances with a high probability of adverse consequences, since it often serves as the first encounter between vulnerable children and healthcare professionals. The importance of the nutritional health of pediatric children brought to the hospital is occasionally disregarded owing to the prioritization of acute medical needs, despite its relevance [8]. An international research investigating children who were sent to hospitals has shown a significant occurrence of malnutrition, with incidence ranging from 10% to 50% in countries like Romania, India, and Iran [9–11]. The rates observed in this research exhibit a larger magnitude when compared to those seen in the whole population. This suggests that in resource-constrained environments, hunger has a substantial role as both a primary cause and a result of children's diseases requiring hospitalization [8].

According to the National Nutrition Survey (NNS) 2018, which provides insight into Pakistan's continuous battle against hunger and food insecurity, malnutrition continues to be prevalent across the nation. The prevalence of this condition is seen in 18% of children experiencing wasting or acute undernutrition, and a worrisome 40% of children under the age of 5 suffering from stunting or chronic malnutrition [12]. Although regional studies have shown malnutrition rates ranging from 27 to 54% in this susceptible population, there is now little data about the nutritional condition of hospitalized children [13–15].

Umerkot Context

The desert region of Umerkot in the southeastern province of Sindh is at the center of Pakistan's persistent malnutrition issue, with more than half of rural households experiencing food insecurity [16]. The prevalence of malnutrition in the local area is worsened by factors such as limited water supply, agricultural setbacks, financial hardship within families, natural disasters including floods and droughts, and problems with the healthcare system [17]. Umerkot, despite its well-documented vulnerability to nutritional deficiencies, lacks comprehensive data at the district level, especially for women and children.

Rationale and Objectives

Our research aims to assess the frequency and variables related with malnutrition among pediatric inpatients in the District Headquarter Hospital (DHQ) Umerkot, which serves rural agricultural populations that are nutritionally vulnerable and lack local evidence. The results of our study highlight the significance of integrating nutritional assessment and treatment into pediatric healthcare, particularly for this vulnerable population that has hitherto been neglected in terms of malnutrition. Through a comprehensive examination of demographic and clinical variables, we may more accurately identify people who are susceptible to malnutrition and need targeted therapies.

Methods and materials

Study design and setting

We did a quantitative cross-sectional research by enrolling children who were hospitalized to the male and female pediatric wards at District Headquarter Hospital, Umerkot for a duration of 15 days in March 2022. DHQ Umerkot is a medical facility with a capacity of 200 beds that provides secondary level healthcare services. It is operated by a team of more than 100 healthcare professionals, including specialists, general doctors, nurses, paramedics, and health management personnel. The facility serves as a recipient of referrals from nearby primary health centers and basic health units, providing healthcare services to a population of 1.2 million individuals residing in both urban and rural areas of Umerkot. The hospital provides subsidized inpatient and outpatient treatments at minimum fees, including laboratory tests, medications, and bed accommodations.

Data collection

The demographic and clinical data of the children who were recruited in the study were collected from their parents or guardians, after the acquisition of informed permission. The age of the patients, measured in months, was confirmed using hospital records. The patients were then divided into two subgroups: those aged between 6 and 24 months, and those aged above 24 months. Additionally, data on gender and place of residence were recorded. Afterwards, a team of qualified physicians and nurses took anthropometric measurements using standardized calibrated devices and following WHO criteria to reduce technical variability in results [18]. The child's weight was measured with precision to the closest 0.1kg, while they were totally nude. This was done using a portable digital weighing scale, which underwent daily accuracy checks. Measurements of recumbent length were taken for children under 2 years of age, while standing height measurements were collected for those above 24 months. The measurements were rounded to the closest 0.1 cm using standard length/height boards. The mid upper arm circumference (MUAC) was measured using non-elastic MUAC tapes graded to the nearest 0.1 cm. The measurement was taken at the midpoint between the tip of the shoulder and the tip of the elbow of the left arm. MUAC is a quick and sensitive anthropometric marker for assessing wasting. The occurrence of technical mistakes was reduced with the implementation of intensive standardized training for field teams on anthropometry methods. Anthropometric measurements were used to calculate age-specific z scores and percentiles, which were then used to assess nutritional status according to WHO growth criteria. This analysis was conducted using Anthro software [19].

Operational Definitions

As to the World Health Organization (WHO), a child is considered stunted if their height for age z score is more than 2 standard deviations below the median score of the reference population. Wasting, on the other hand, is determined by weight for height/length z scores that are below -2 standard deviations. Underweight refers to a condition of overall development failure, as measured by weight for age z scores below -2 standard deviations [18]. We used mid upper arm circumference (MUAC) thresholds to categorize wasting, which is the primary anthropometric criteria for diagnosing severe acute malnutrition as per WHO standards [18,20]. MUAC functions as an autonomous predictor of mortality that is not influenced by hydration state. It has a high level of sensitivity and specificity for the purpose of nutrition screening [20].

The research found that a mid-upper arm circumference (MUAC) measurement between 115 to 125mm indicated mild acute malnutrition, whereas a MUAC measurement below 115mm indicated severe wasting [18]. The documented patient parameters included main diagnosis, immunization history, food consumption frequency, and anthropometric measurements.
as malnourished children often present with non-specific symptoms underlying nutritional deficiencies reflecting impaired host immunity without clear localized organ pathology. These could be attributed to fever or acute undifferentiated febrile illness (79 cases, 26.5%) for 38 (12.8%) subjects. A significant fraction of patients was admitted for respiratory infections inclusive of upper respiratory tract infections (URTI), bronchopneumonia and bronchiolitis collectively accounted hospitalization among 56 children (18.8%) followed by pneumonia (49.7%) were aged between 6 to 24 months followed by 103 (35%) in the study duration with mean age 19.4±15.2 months including 184 children (61.7%) males and 114 females (38.3%). Majority participants 148 (49.7%) were aged between 6 to 24 months followed by 103 (35%) in 24-60 months bracket and 47 (15.8%) under 6 months. In terms of residential distribution, 197 (66.1%) cases were from rural locales around Umerkot while 101 (33.9%) lived within the city.

Primary Diagnosis of Participants
The predominant illnesses responsible for pediatric admissions encompassed infectious exanthemas and respiratory disorders (Table 1). Measles constituted the singular most common reason for hospitalization among 56 children (18.8%) followed by pneumonia affecting 52 (17.4%) and diarrhea with 47 cases (15.8%). Acute respiratory infections inclusive of upper respiratory tract infections (URTI), bronchopneumonia and bronchiolitis collectively accounted for 38 (12.8%) subjects. A significant fraction of patients was admitted with fever or acute undifferentiated febrile illness (79 cases, 26.5%) without clear localized organ pathology. These could be attributed to underlying nutritional deficiencies reflecting impaired host immunity as malnourished children often present with non-specific symptoms [21]. Among other diagnoses, reduced oral acceptance and dehydration comprised reasons for hospitalization in 15 cases reinforcing interlink of anorexia, starvation and malnutrition. In total, infectious diseases contributed to 59.1% pediatric admissions indicating the heavy burden of communicable childhood maladies in the region.

Anthropometric Analysis
According to MUAC cut offs, one third (103,34.6%) of enrolled hospitalized children suffered from some degree of malnutrition including moderate malnutrition affecting 26.5%(79) and severe malnutrition in 8.1%(24). Comparatively stunting was discerned in 71 out of 298 participants (23.8%) while wasting or low weight for length/height manifested in 14%(42) per WHO z score thresholds [18]. Underweight prevalence was strikingly high affecting one quarter children (29.5%) highlighting the region's persistent undernutrition preventing children from attaining their growth potential and predisposing them to recurrent infections [7]. The mean (SD) MUAC and weight of the cohort was 12.8±1.6 cm and 7.2±5.23kg respectively (Table 2). Factors Underpinning Malnutrition Burden
Immunization gaps reflected through lack of standard age-appropriate vaccinations were associated with significantly greater malnutrition (p<0.001) as all 37(6.7%) children unimmunized or partially vaccinated demonstrated anthropometric deficits (Table 3). This could be mediated via vaccine preventable disease acquisition and underscored stronger integration between immunization and nutritional services as a key strategy for lowering pediatric hospitalizations for maladies like measles, diarrhea and pneumonia which constituted majority cases [22]. Dietary inadequacies also correlated strongly with malnutrition indicators (p<0.05) as demonstrated through higher consumption of cereal/flour-based items and low dairy intake among affected children. Monotonous plant-based diets devoid of milk products and animal protein coupled with household financial constraints limiting dietary diversity sustain the vicious cycle of malabsorption, micronutrient deficiencies and growth faltering [23]. Malnutrition rates were highest in children aged 6-24 months (43.2%) consistent with international and regional trends [4,12]. Critical growth phases place this age segment at particular risk of nutritional insufficiency especially when combined with childhood infections during weaning periods while transitioning from exclusive breastfeeding to solid meals. Measles diagnosis (p<0.001) and rural domicile (39%) also conferred significantly higher likelihood of malnutrition versus children from urban Umerkot (25.4%) as rural environments pose additional barriers to healthcare access and maintaining optimal child health [24].

Discussion

Key Findings
This study aimed to assess the neglected burden and determinants of malnutrition exclusively among young pediatric inpatients at a district hospital in Pakistan’s nutritional hotspot district of Umerkot. Our analysis detected an alarmingly high malnutrition prevalence of 34.6% afflicting over a third children aged under 5 years needing hospitalization which exceeded general population rates [12]. Comparable studies from India, Iran and other developing countries have reported analogous malnutrition estimates from 27% to above 50% in this cohort indicating the scale of this public health crisis confronting hospitalized children especially those requiring treatment for infectious illnesses like measles, diarrhea and respiratory conditions [9,11,13-15]. Our results also align with nationwide data from Nutrition Survey 2018 which spotlighted emergency thresholds of acute malnutrition manifested through wasting (low weight for height) among 17% children while stunting or chronic malnutrition affected 40% under 5 years reflecting a major policy and programming failure [12]. This study’s findings contextualize the pediatric ward perspective thus providing ground truthing for policy amendments tailored to the needs of young patients.
We refer to previously extracted raw text here for brevity.

Unraveling the Root Causes of Malnutrition in Umerkot’s Children

Modifiable Factors and Targeted Solutions

A multidimensional etiology underlies childhood malnutrition encompassing interconnected biological and social determinants which require integrated solutions [25]. Our analysis identified harmful triad of suboptimal infant and young child feeding, vaccine preventable disease acquisition and household food insecurity as major drivers of undernutrition among hospitalized subjects. Multiple lines of evidence have established lack of dietary diversity, low meal frequency and poor maternal care during the first years after birth as pivotal threats for malnutrition in this age bracket. Suboptimal breastfeeding practices, household poverty and food insecurity while weaning practices, household poverty and food insecurity while preventing illnesses like measles, suboptimal breastfeeding and weaning practices, household poverty and food insecurity while infant and young child feeding. Vaccine preventable disease acquisition and household food insecurity as major drivers of undernutrition among hospitalized subjects.

Infections especially measles and pneumonia constituted major reasons for hospitalization besides aggravating malnutrition by increasing metabolic demands and reducing appetite through cytokines [28]. Our analysis determined that children lacking complete vaccination course for age had greatest odds for malnutrition. Routine childhood vaccination helps prevent common killers like measles, diarrhea from rotavirus and other pathogens protecting children against catabolic stresses thus minimizing nutrition loss during illness while also reducing related mortality [29]. Closing immunization gaps through improved community outreach, reducing vaccine hesitancy by building caregiver awareness and maintaining optimal cold chain and logistics would pay rich nutritional dividends especially for impoverished rural communities lacking alternative healthcare access.

Wider health systems strengthening for child health and survival also warrants integrated management of acute malnutrition guidelines for facility and community-based interventions [30]. Nutrition workforce capacities must be augmented via in-service training of physicians and staff nurses on anthropometric assessment, metabolic and micronutrient deficiencies, rehabilitative best practices and discharge pathways with follow up. A recent Pakistan Lancet Commission has recommended cost-effective measures like procurement of mid upper arm circumference tapes for nutrition screening, equipping hospitals with ready to use therapeutic foods alongside low cost local products like chickpea sesame-based pastes to stabilize severely wasted children [31]. Resourcing pediatric wards with guidelines, job aids and essential diagnostics like glucometers and point of care testing for hemoglobin, zinc and vitamin D also need urgent action [32].

Our research indicates the highest malnutrition prevalence in children under 24 months highlighting the crucial window of complementary feeding, treatable deficiencies and repeating infections needing nuanced solutions like community management of acute malnutrition through lady health workers and measures encouraging dietary diversity [33]. Iron, zinc and vitamin A shortfalls are prevalent in this age bracket stunting physical growth and immunity which can be redressed through supplementation, food fortification and behavioral change communication promoting animal source protein consumption [34]. Engaging private sector food manufacturers to incentivize production of energy dense, affordable, micronutrient fortified lipid based nutrient supplements can also assist families to counter malnutrition [35]. Pakistan’s Benazir Income Support Cash Transfer program has demonstrated value in alleviating household poverty and enhancing child centered spending which could be further mobilized during hospitalization of an undernourished family member [36].

Analyzing rural and urban differentials indicated significantly higher morbidity among the former which bear the greatest force of socioeconomic deprivation. Rural malnutrition correlates like anemia, open defecation, unimproved water access and geographical barriers to healthcare utilization require systemic action across agriculture, infrastructure and public health domains [24]. Climate smart models enhancing resilience, consumptive advisories to boost crop and dietary diversity using indigenous cultivars while revival small land holding capacity can tackle the nexus of rural food insecurity and undernutrition [37]. Drought tolerant biofortified orange maize, iron rich millet and zinc dense wheat germlasm adoption needs policy incentives to uplift nutritional immunity among agrarian communities [38].

Conclusion and Recommendations

In the malnutrition hotspot context of Umerkot, over one third hospitalized children suffered from acute undernutrition besides stunting, wasting and underweight prevalence transcending population averages. Key factors responsible encompassed vaccine preventable illnesses like measles, suboptimal breastfeeding and weaning practices, household poverty and food insecurity while rural locales faced particular nutritional jeopardy. Our findings underscore the urgency of political commitment and health system reforms to tackle pediatric malnutrition as an indispensable component of child health strategies like the Integrated Management of Neonatal and Childhood Illness (IMNCI). Concrete policy measures should encompass nutritional surveillance including anthropometric monitoring of hospital admissions, capacity building of healthcare staff on inpatient rehabilitation guidelines and community engagement for preventative education and poverty alleviation initiatives prioritizing maternal and child wellbeing [39]. With the advent of democracy and legislation like National Health Vision 2016-2025 which pledges adequate investment in MNCH indicators as a fundamental human right, Pakistan has fresh impetus to transform

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Table 1. Primary admitting diagnosis of participants

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number (n=138)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td>56</td>
<td>18.8%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>52</td>
<td>17.4%</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>47</td>
<td>15.8%</td>
</tr>
<tr>
<td>Acute respiratory infections</td>
<td>38</td>
<td>12.8%</td>
</tr>
<tr>
<td>Fever and/or related febrile illness</td>
<td>79</td>
<td>26.5%</td>
</tr>
<tr>
<td>Reduced oral acceptance/dependency</td>
<td>15</td>
<td>5.0%</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Table 2. Nutritional profile and frequency of undernutrition

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean ± SD or n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-upper arm circumference (cm)</td>
<td>12.8 ± 1.0</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>7.25 ± 1.32</td>
</tr>
<tr>
<td>Moderate/malnutrition</td>
<td>76.25%</td>
</tr>
<tr>
<td>Severe malnutrition</td>
<td>57.25%</td>
</tr>
<tr>
<td>Stunting</td>
<td>71(21.8%)</td>
</tr>
<tr>
<td>Wasting</td>
<td>62(46.9%)</td>
</tr>
<tr>
<td>Underweight</td>
<td>88(29.5%)</td>
</tr>
</tbody>
</table>

Table 3. Factors Associated with Malnutrition Among Participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Malnutrition</th>
<th>No Malnutrition</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunization Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully Immunized</td>
<td>66 (41.1%)</td>
<td>195 (24.8%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Partially/Unimmunized</td>
<td>27 (10.0%)</td>
<td>60 (9.6%)</td>
<td></td>
</tr>
<tr>
<td>Diagnoses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles</td>
<td>41 (73.2%)</td>
<td>15 (26.8%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Other Diseases</td>
<td>62 (27.1%)</td>
<td>100 (72.9%)</td>
<td></td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-24 months</td>
<td>64 (42.2%)</td>
<td>84 (56.8%)</td>
<td>0.02</td>
</tr>
<tr>
<td>24 months</td>
<td>59 (27.5%)</td>
<td>111 (72.5%)</td>
<td></td>
</tr>
</tbody>
</table>

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Realizing the proverb prevention is better than cure, community-based models require roll out to alleviate hospital burden including Integrated Community Case Management of childhood infections by frontline workers, behavior change modules and using schools as platforms for deworming, menstrual health, WASH and dietary diversity awareness besides anaemia screening [43,44]. Gender and social inclusion perspectives should explicitly inform all programming to mitigate bias against young girls, differently abled children and minorities. Moving beyond lofty commitments entails grounding in results-based accountability frameworks with localized data guiding annual sectoral plans like the Multi-Sectoral Nutrition Strategy [45]. Operational research on practical barriers around continuity of care, referral compliance and patient pathway can pave the path for context adapted solutions. With malnutrition claiming nearly 45% under 5 lives annually, Pakistan is racing against time to arrest nutritional deficiencies capping human potential through smart, child sensitive interventions prioritizing those farthest behind like healthy, prosperous future.

Research Limitations and Future Directions
Despite robust findings, our analysis encompassed certain limitations notably its cross-sectional quantitative design employing non-probability sampling from a single health facility that constrains generalizability. The relatively short duration was unable to capture seasonal malnutrition trends. Causal inferences are also restricted without multivariate analysis controlling confounders like socioeconomic stratifiers, maternal factors and water/sanitation variables. Social desirability bias may affect self-reported dietary recalls while the study omitted biochemical testing for micronutrient status. We recommend further analytical probes through mixed methods data triangulation across multiple facilities and rural/urban typologies generating nationally representative data on context specific malnutrition determinants.

Child health remains the ultimate barometer of sustainable human development, thus Bronfenbrenner’s social ecological model underlining interlink roles of caregivers, communities, government and wider milieu offers a useful heuristic framework [15]. Embedded research co-creating solutions with families, frontline workers and policymakers can unpack complex pathways underpinning hospitalized malnutrition besides catalyzing commitment for alleviable resource allocation when the invisible become visible. Pakistan’s nutritional future now hinges on crafting context adapted models prioritizing vulnerable communities using local partnerships, knowledge sharing and data driven iteration.

Acknowledgments: We would like to acknowledge all clinicians and staff who assisted this study during data collection. We also acknowledge the parents of the included children who gave consent and assisted us.

Author Contributions
Conceptualization: Vistro JM
Data curation: Vistro JM and Mughal HS
Formal analysis: Vistro JM
Writing – original draft: Vistro JM
Writing – review & editing: Vistro JM

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Nutrition governance [40]. This mandates harmonization across multisectoral initiatives like National Nutrition Survey, National Fortification Alliance, breastfeeding protection laws and Agriculture Climate Policy change to guarantee sustainable food systems securing the country’s future human capital [41]. Global precedents like Peru, Senegal and Nepal which confronted malnutrition through national priorities lens applying equity and quality principles for all citizens offers valuable lessons for replication [42].

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Conclusions
Afin de répondre à la prévalence extrêmement élevée de la malnutrition chez les patients hospitalisés, les soins pédiatiques doivent inclure des normes d'évaluation et de traitement nutritionnels ainsi que le développement des capacités. Dans les communautés locales, il est également essentiel de surveiller régulièrement la croissance et de promouvoir la vaccination, une bonne hygiène et une alimentation équilibrée.

Mots clés
Malnutrition ; Pédiatrie ; L'état nutritionnel ; Circonférence du milieu du bras ; Pakistan.

Abstracto
Fondo
En el área de Umerkot en Pakistán, donde la desnutrición es común, un hospital local descubrió que un tercio de los niños hospitalizados estaban desnutridos. El propósito de esta investigación fue identificar la prevalencia de desnutrición y sus asociados entre pacientes pediátricos hospitalizados. Métodos
Se llevó a cabo una investigación transversal en 298 niños que fueron hospitalizados en el Hospital Central del Distrito en Umerkot y tenían edades comprendidas entre 06 meses y 05 años. Para determinar la desnutrición de acuerdo con las directrices de la OMS, se tomaron medidas antropométricas como la circunferencia media del brazo (MUAC). Se documentó el diagnóstico clínico, el historial de vacunación y la ingesta de alimentos. Resultados
La prevalencia de desnutrición fue del 34,6%, incluyéndose casos moderados (26,5%) y graves (8,1%). En los niños, el bajo peso afectó al 29,5%. Los diagnósticos frecuentes fueron sarampión (18,8%), neumonía (17,4%) y diarrea (15,8%). La prevalencia de desnutrición se correlacionó significativamente con una ingesta inadecuada de alimentos durante el ingreso fueron sarampión (18,8%), neumonía (17,4%) y diarrea (15,8%). La prevalencia de desnutrición en niños de 6 meses a 5 años fue del 34,6% en los niños, la cual se correlacionó con una ingesta inadecuada de alimentos durante el ingreso. Conclusiones
Para abordar la prevalencia críticamente alta de desnutrición en pacientes hospitalizados, la atención pediátrica debe incluir estándares para la evaluación y el tratamiento nutricionales, así como el desarrollo de capacidades. En las comunidades locales, también es fundamental realizar un seguimiento rutinario del crecimiento y promover la inmunización, una higiene adecuada y una dieta equilibrada.

Palabras clave
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Palabras clave
Desnutrición ; Pédiatrie ; Estados nutricionales ; Circunferencia del brazo medio superior ; Pakistán.

Key messages
- This study provides quantitative data on alarming prevalence (87.9%) of violence against medical staff in Karachi Pakistan.
- Our study reveals severe impacts on provider health, absenteeism, turnover, and patient care quality.
- The study highlights lack of law enforcement and poor hospital security as key issues fueling crisis.
- The evidence from our study calls for urgent legal reforms, enhanced security measures, de-escalation training, community engagement, and oversight to tackle escalating violence.
- The study adds significantly to limited evidence on workplace violence against healthcare workers in developing countries.

References

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