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Nutritional Assessment Practices among Health Care Workers at the Pediatric Emergency Unit at Kenyatta National Hospital

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Abstract

Assessment of nutritional status in pediatric population is necessary to predict growth patterns and signs associated with malnutrition. However, it has become increasingly apparent that pediatric nutritional assessment is not adequately performed and therefore frequently missing out on children with severe nutritional needs. The main objective of this study was to determine the health care workers' practices regarding the nutritional assessment of sick children at the Pediatric Emergency Unit (PEU) at Kenyatta National Hospital. The study population was health care workers comprising doctors, clinical officers and the nurses working at the unit. The study was designed as an observation and descriptive study using self-administered questionnaire and observation checklist. The study results reveal almost all nurses (96.8%) attempted all the required observations for nutritional diagnosis of all the patients. Among the clinicians, majority (78.6%) didn't attempt all the observation required for all the patients. The study showed that only 29.52% of the respondents had knowledge that weight loss was a critical indicator of patient nutritional status. Merely, 12.38% of the respondent had knowledge that change of caregivers and home circumstances had impact on nutritional status of a child. Only 38.64% of the health workers had some training on assessment of nutrition status of HIV/AIDS children. The findings indicated that only 44.44% of the respondents always inquired on who feeds the child. Among the study participants only 47.73% of the respondents often gave nutritional advice to care-givers. Despite the lack of knowledge, universally 98% of the respondents agreed that nutritional assessment for pediatric emergency patients is important with only 2% dissenting. Apparently, Nutritional assessment at the pediatric unit was not optimal. Therefore, measures should be instigated to improve and facilitate efficient nutritional assessment of the children visiting the unit.

Keywords: Pediatric nutrition; Nutrition assessment; Nutrition knowledge; Healthcare workers

Introduction

Nutritional assessment in children is essential facet of children health that helps monitoring of growth patterns and symptoms associated with malnutrition. Nutritional status is determined by assessment of anthropometric, biochemical, clinical, dietary, socioeconomic and drug-nutrient interaction effects. Each of these components shows a child's nutrient requirements for optimal health [1]. Anthropometry includes weight, height, mid upper arm circumference (MUAC), measurement of skin fold thicknesses, head and chest circumferences. Biochemistry analyses haemoglobin levels, urinary iodine, Iron status, levels of different nutrients or their by-products [2]. Clinical analysis examines the skin, eyes, hairs, nails and thyroid while dietary surveys include eating habits [2]. Nutrition is an important aspect in the etiology, management and recovery of several diseases. Nutritional assessment helps early detection of nutritional deficiencies that could result to high children morbidity and mortality. Early nutritional support can improve nutritional status, minimizing the trend of simple treatable health problems deteriorating to complicated condition. It should be a routine procedure for people of all ages [3].

Malnutrition is a major contributor to increased morbidity and mortality, decreased function and quality of life, increased frequency and length of hospital stay and higher health care costs. In 2010, 7.6 million children across the world died before reaching their fifth birthday, while in 2011 an estimated 165 million children under the age of five were stunted and 101 million were underweight. Malnutrition makes children more susceptible to illness which results to long-term adverse effects on children's development and health [4]. It is also estimated that globally, 12 million children die from malnutrition annually with most of them coming from the developing countries.

Under-nutrition is responsible for more than one-third of children mortality globally with higher prevalence in low and lower-middle-income countries. Adequate nutrition is essential for children's health and development. Globally, it is estimated that under nutrition is responsible, directly or indirectly, for at least 35% of deaths in children less than five years of age. Under-nutrition is also a major cause of disability preventing children who survive from reaching their full development potential. Approximately 186 million children below five years of age in developing countries are stunted and about 55 million are wasted [5].

A study by Nzioka revealed that in Kenyatta National Hospital (KNH), the mortality rate from malnutrition stood at 50% of the children admitted with malnutrition, a problem that can be prevented.

Bhan [6] attributed most of the deaths from the developing countries, Kenya included, to out-dated and inappropriate clinical care for children with malnutrition. During the last few years it has become increasingly apparent that malnutrition remains undiagnosed and therefore frequently untreated, in patients attending hospitals [7,8]. This may be due to lack of knowledge on nutritional assessment, or the notion that nutritional assessment during hospital visits is not important and incomplete assessment [7,8]. It against this background this study was designed to investigate the performance of nutritional analysis, knowledge and perceptions of healthcare workers at the PEU, KNH.

Materials and Methods

Study site

This was a cross sectional observation and descriptive study carried out at Pediatric Emergency Unit (PEU), Kenyatta National Hospital (KNH) which is the largest referral hospital in East and Central.

Study population and sample selection

The study participants included all the healthcare workers namely nurse, clinical officers and pediatric consultants working at the PEU. There were 40 nurses, 17 clinical officers and 1 resident pediatric consultant. The researcher used quota random sampling to make observation during nutritional assessment. Quota random sampling involves stratified grouping of sample subpopulation with similar features [9,10].

Data collection

The data was collected using a questionnaire issued to the health care workers, observation of practice and a review of medical records. The data collection instrument contained two sections outlined as structured self-administered questionnaire and observation guide set of questions. The questionnaire captured the demographics, perceptions and knowledge information of the healthcare workers. The observation guide of questions captured data on practices of the healthcare workers through observation as the health workers during nutrition assessment.

Data analysis

All the quantitative data was manually entered into an excel spread sheet then exported to SPSS for analysis. The results were expressed as frequency and percentages presented in Tables and graphs. The associations between the frequency of performance of nutritional assessment practices among different cadres and knowledge of the cadre was determined by Greenhouse Geisser (G-G) (among groups) and fisher (between groups) statistical test. Statistical association was determined at 95% confidence level.

Ethical considerations

Approval was requested from the Kenyatta National Hospital Ethics and Research Committee. Consent was obtained from the study participant before acquiring information relevant to the study.

Results and Discussion

Demographics of the respondents who participated in the study are a shown in Table 1.

Attribute	Details	n=45 Frequency	Percentage
Cadre	Clinical officer	13	28.89
	Doctor	1	2.22
	Nurse	31	68.89
Years of experience	2-5 yrs	9	20
	6-10 yrs	3	6.67
	Over 10 yrs	31	68.89
	Missing	2	4.44
Age group	18-25	5	11.11
	26-30	5	11.11
	31-35	4	8.89
	36-40	5	11.11
	40 and above	26	57.78
Gender	Male	13	28.89
	Female	32	71.11

Education	Certificate	4	8.89
	Diploma	27	60
	Degree	13	28.89
	Masters	1	2.22

Table 1: Socio-Demographic characteristics of participants.

The frequency of performance of various nutritional assessment practices among healthcare workers

There was a good frequency in assessment of nutritional needs of the children by the nurses. Nearly all nurses (96.8%) attempted all the required observations for nutritional diagnosis of all the patients as listed in the checklist. However, the frequency of performance of nutritional assessment by clinician was poor. At least 78.6% did not attempt all the diagnosis observations for the patients accessed. This observation concurs with the finding of a research conducted in NuLife hospitals, Uganda which observed that Nurses performed nutrition assessment at higher rate that clinician at the frequency of 83% and 77% respectively [11]. This infrequency of assessment in clinicians is alarming and could lead some of the patients being insufficiently diagnosed or not diagnosed at all. The findings of this study are agreeable with the observation of Moses (2010) who conducted a similar study at Morogoro urban district in Tanzania [12]. He found that nurses had a high frequency of 75% in nutritional examination of children than the clinicians at 50% [12]. The incomplete assessment could lead some of the patients being insufficiently diagnosis. Clinician at the pediatric unit should be should be adequately sensitized to ensure thorough complete nutrition assessment of the children visiting the hospital.

Health care workers knowledge on nutritional assessment

There was significantly low level of knowledge on nutritional parameters used for evaluated during nutritional assessment among the health workers. Only 29.52%, of the respondents had knowledge that weight loss and growth curve dropping downwards was an essential indicator for nutritional needs while merely 28.57% of the health workers had knowledge that children failure to gain weight followed by flattening of growth curve had high nutritional needs. Merely, 12.38% of the respondent had knowledge that change of caregivers and home circumstances had impact on nutritional status of a child (Figure 1).

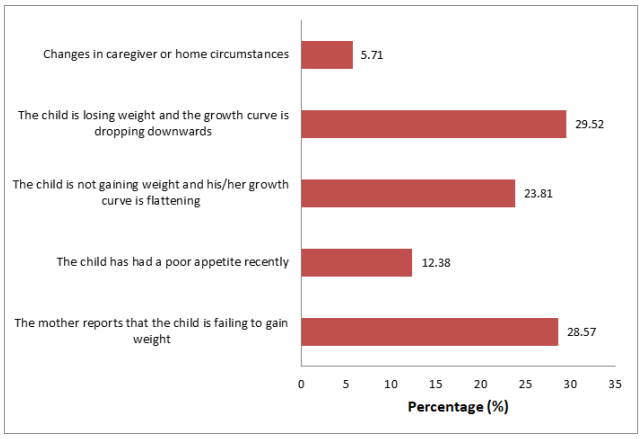

Figure 1: Health care workers knowledge on nutritional assessment.

Specific training on nutritional care

Amongst those who reported to have any training on nutritional care and assessment of children nutritional status, 35.71% had training on infant and young child feeding followed by 14.29% who were trained in college (Figure 2). Only 7.14% had training on breastfeeding, marasmus and nutritional care for HIV children (Figure 2).

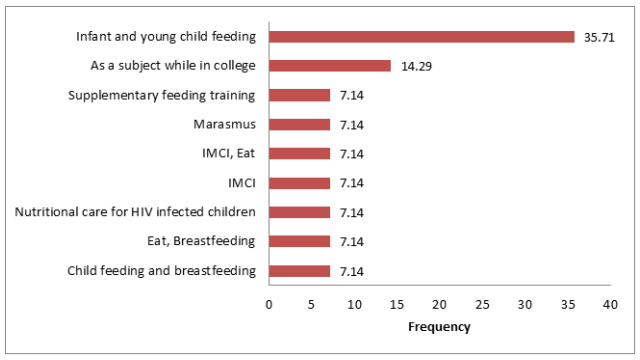

Figure 2: Specific training on nutritional care.

More than half of the respondents (61.36%) have not had any training on nutritional care of HIV infected children. Only 38.64% have had some training on the same (Figure 3).

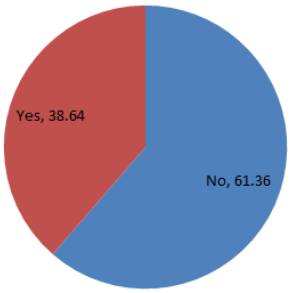

Figure 3: Training on nutritional care of HIV infected children.

Classification of nutritional status of sick children

The knowledge on classification of nutritional status was assessed among the health care workers. Severe malnutrition was the most used indicator (56.06%) in classification of children with high nutritional needs. The least used indicators to classify nutritional status of the children were z-score, wasting, and height, weight and age which were used by 1.52% of the health workers. About 9.09% of the health workers did not know how to classify nutritional status of the children (Figure 4).

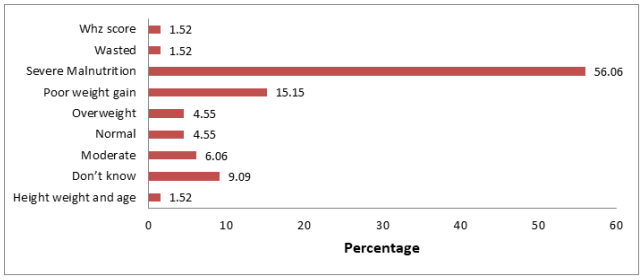

Figure 4: Classification of nutritional status of sick children.

Similar findings on low levels of nutritional assessment knowledge have been reported previously. A study in Denmark observed that health workers including physicians and nurses had insufficient knowledge on nutritional assessment in pediatric clinics [13]. A study in Ghana, pediatric unit highlighted that the nurses' knowledge on nutritional assessment was significantly low at 36% [14]. Further, a study conducted in turkey observed that healthcare workers generally had low knowledge in assessment of nutritional. Overly, many previous studies conducted worldwide collaborates the findings of this study that health care practitioners have insufficient knowledge on nutritional assessment often lead to misdiagnosis [15-17].

Only 35.71% of the respondents had specific training on nutritional assessment of infant and young child feeding habits. Barely, 7.14% of the respondent had special training on various nutritional conditions such as marasmus, eating and breast feeding. It was highlighted that only 14% of the respondents had indicated that they had college training on nutritional assessment. Previous studies have emphasized that medical schools do not provide sufficient training for health care workers in their curriculum [17,18]. In a study carried out in hospitals, health centres and dispensaries in Morogoro Urban district, Tanzania 53% of the health workers had poor knowledge on nutritional assessment of children attending the hospitals [12]. A study conducted by Yalcin et al. [17] in Ghana, only 0.3% of the health practitioners had receive knowledgeable training through a workshop programme on pediatric nutrition assessment. About 6.0% of the practitioners explained that they had received their knowledge through reading academic journals [17]. In some studies healthcare workers have attested that nutrition assessment education was not taken serious in the medicals schools [17]. Poor insufficient training regarding nutrition assessment is the core cause of poor identification of nutritional requirements for the patients. Health care practitioners working at pediatric unit has the primary role for nutritional assessment [13,17]. Therefore, adequate through training should be provided to the medical practitioners for effective assessment [13,18,19].

A study conducted in Ethiopia in 2011 highlighted that lack of training as major bottleneck for nutrition assessment of children [20]. This may largely be attributed to lack of in service training on the launch of the current guidelines and poor medical school training on nutritional assessment [21,22]. This highlights the importance of periodic training of the health care workers on nutritional assessment.

The knowledge on classification of nutritional status was assessed among the health care workers. Severe malnutrition was the most used indicator (56.06%) followed by Poor weight (15.15%) in classification of children nutritional needs. Previous studies have also highlighted malnutrition as the main indicator of nutritional needs of children. It was observed, in a study carried out in Hawassa, Ethiopia indicated that 86% of the health care workers used malnutrition chat to classify nutritional status of the children [23]. A study carried in Maputo on anthropometric indicators of nutritional status implications malnutrition over stunted and wasted growth was highly used for nutrition classification [24]. In Mbeere South Sub-County, it was reported that malnutrition followed by height-for-age and weight-for-height was most frequently used for classification of nutritional status of children [22]. In Ntungamo district hospital, weight, MUAC and Height at 31%, 18% and 3% respectively, were the most used indicators for most for nutritional classification [11]. In current study, only 1.52% of the respondents used wasting, height, weight and age for nutritional classification. However, a previous study has reported that about 88% and 81% health workers used weight and height/length respectively for assessment nutrition status [21]. The most used parameter for nutrition assessment in Kisoro District hospitals, Uganda included MUAC, Edema, pallor and weight at 100% while height was the least used factor at 55% [11]. In the health centres' having pediatric units in the South-western Uganda, pallor was the most assessed at 100% followed by edema (96%) and weight (93%) while length and MUAC at 32% and 25% respectively [11].

Assessment of length or height in combination with weight provides the most accurate means of determining children nutritional status [25]. Well-nourished children should gain weight and length/height parallel to the standard growth curve [25]. Flattening of growth curve that is not in parallel to chart line of the standard growth curve indicates that children have nutritional needs and require nutritional interventions. Therefore, ignoring these parameters would essentially mean that some of the children requiring nutritional inventions will missed in diagnosis [25]. Therefore, the healthcare workers should be

sensitized on the importance of analysis of all parameters required for pediatric nutritional assessment.

Perceptions of the health care workers on nutritional assessment

The respondents unanimously agreed (98%) that nutritional assessment for pediatric emergency patients is important with on 2% dissenting (Figure 5).

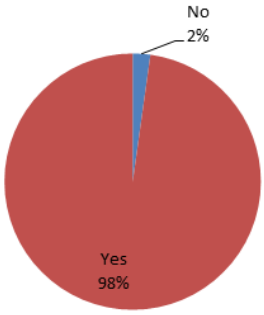

Figure 5: Importance of nutritional assessment for pediatric emergency patients.

Benefits of nutritional assessment

As reported, 40% and 34.5% of the respondents pointed out that nutrition assessment is beneficial for early detection and proper children nutrition, management (34%) of nutritional needs respectively. The least of the respondents 1.82% supported that nutritional assessment guides on the type of drug to be administered (Figure 6).

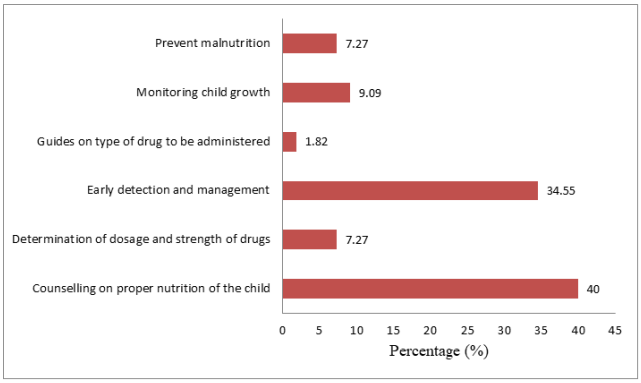

Figure 6: Benefits of nutritional assessment.

Fishers exact test were performed to assess association between perception on importance of nutritional assessment and performance of nutritional assessment by healthcare workers. Study results reveal no association between perception of importance of nutritional assessment and frequency of nutritional assessment by healthcare workers. This suggests that the health workers perceived nutritional assessment important however this was not correlated with the poor performance observed.

The respondents unanimously agreed (98%) that nutritional assessment for pediatric emergency patients is important with only 2% dissenting. This result is similar with other findings such as a study conducted in Hawassa, Ethiopia which reported that 86% of the study participants believed nutritional assessment for children attending the pediatric clinics was important. In the same study, 65% of the respondents reported that every child should undergo nutritional assessment every time they are being attended to by the health workers [23]. In the current study, it was observed that 40% and 34.5% of the respondents pointed out that nutrition assessment is beneficial for early detection and proper children nutrition respectively while 34% reported that nutritional assessment is important for management of nutritional needs. Tafese and Shele [23] reported that 59% of the respondents believed that early assessment and prioritization for management of children with nutritional need was critical to achieving good health outcomes. However, some studies have reported that some respondents (55%) dint believe that it's a routine to check the nutritional status of every child at the pediatric clinic [23]. Elsewhere some health care workers have been reported not be interested in carrying out nutritional assessment of children because they perceived it not important [13]. It is worth to note that early detection and appropriate management of nutritional problems among children so as to provide quality health care is essential [26].

Conclusion and Recommendation

The delivery of nutrition assessment at an optimal capacity at the pediatric facilities is difficult. It is in trend with the findings of this study that there is insufficient knowledge among the health workers. Additionally, this study indicates that there is inadequate and incomplete nutritional assessment of children by healthcare workers. Despite the lack of knowledge workers had positive attitude towards nutritional assessment. This is goodwill that if the health workers are provided with the right facilities and knowledge they will adequately perform effective nutritional assessment. Periodic education programmes on nutrition and techniques of nutritional assessment to the health workers should be initiated. In-service training will significantly improve nutritional assessment among the health workers. To improve the frequency of performance of nutritional assessment, periodic sensitization of the health workers should be carried out to emphasize on importance of adequate and complete nutritional assessment. To boost the perceptions and attitudes of healthcare workers on nutritional assessment, incentives should be provided to motivate the workers. Occasional counselling and workshops could also boost their perceptions.

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