The Prevalence of protein energy malnutrition Among Children Under Five years at Alruhal Internal Displaced Population Camp- Kass locality South Darfur State 2011

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Abstract

We conduct this study to determine the Prevalence of protein energy malnutrition Among Children Under Five years. This study was conducted in Kass Locality in south Darfur State in Sudan. Cross-sectional descriptive study to measure the Prevalence of protein energy malnutrition. This study designed to cover (n=384 child). Our study found that, The prevalence of (PEM) was found to be 20.6%, the severe form was 6.55% while the moderate form was 14.05%. The prevalence was highest among males 24.9% compared to 16.4% in females, (P=0.007). The age group (6-12) months was mostly affected 24.6%.

Keywords: Prevalence, Malnutrition, Deficiency, Kass

Introduction

The term malnutrition generally refers both to under nutrition and over nutrition, but in this context we use the term to refer solely to a deficiency of nutrition. Many factors can cause malnutrition, most of which relate to poor diet or severe and repeated infections, particularly in underprivileged populations (WHO, 2005).

It is a range of pathological conditions arising from lack of protein and calories, in varying proportions, occurring most frequently in infants and young children and commonly associated with infections (Nasser, 2009).

Malnutrition is defined as a pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients, this state being clinically manifested or detected only by biochemical, anthropometric or physiological tests. Malnutrition is a hidden problem. It doesn't have obvious signs and victims are not aware. Acute and chronic malnutrition, vitamin A deficiency, iodine deficiency, iron deficiency anemia and zinc deficiency are all manifestation of malnutrition (Abuye & Urgaa, 2010).

The WHO estimates that by the year 2015 the incidence of malnutrition will have decreased to 17.6%. Currently, 113.4 million children are affected by protein energy malnutrition “PEM” as measured by low weight for age, the majority of these cases living in developing countries with “70%” of these children in Asia, particularly south central region, and “26%” in Africa, more than half of young children in south Africa have “PEM” which is 6.5 time prevalence in the western hemisphere. In sub-Saharan Africa 30% of children have “PEM” (WHO, 2002).

Eastern Asia where underweight levels decreased by one half between 1990 and 2000. Underweight rates also declined in south-eastern Asia (from 35% to 27%), and in Latin America and the Caribbean the rate of underweight children decreased by one third (from 9% to 6%) over the last 10 years. In contrast, south-central Asia still has high levels of child malnutrition, even though the rate of underweight children declined from 50% to 41% during the 1990s (WHO, 2006).

The proportion of malnutrition among the admitted children in GaafirlnbOalf Emergency Pediatric Hospital in Sudan was (20.2%). The age group (6-18) months were most affected (65.7%). Low educational level of mothers was (52.9%) (Alawia, A. 2009).

The nutritional status of 327 under-five children living in Mayoo displacement camp, Khartoum, Sudan, was assessed during May- August 2004. Risk factors for protein-energy malnutrition (PEM) were also studied. According to WHO criteria, a total of 186 (56.1%) children had malnutrition, of these 101 (30.1%), 43 (13.1%) and 42 (12.8%) were mildly, moderately and severely malnourished respectively. According to the Welcome classification, the commonest type of malnutrition was found to be underweight (38.2%), Marasmus and Kwashiorkor were detected in (6.4%) and (0.9%) respectively, there was no case of Marasmic Kwashiorkor in the studied population. Prevalence of vitamin “A” was 9.2% of which 0.9% had night blindness. Age, sex, lack of immunization, lack of breast-feeding, history of fever and history of diarrhoea were tested and were not found be risk factors for malnutrition in this group of children, (Ahmed & Mamou, 2005).

Malnutrition is a state of nutrition in which a deficiency or excess (or imbalance) of energy, protein and other nutrients...
causes measurable adverse effects on tissue/body form, body function and clinical outcome. In common with many 'catch all' definitions, the description is very broad and includes both under nutrition and over nutrition. Humans are sensitive to a wide range of nutritional problems that have different detrimental effects and operate over different time frames, the term 'malnutrition' will be used synonymously with 'under nutrition' to refer to an inadequate intake of protein and energy.

Micronutrient deficiency is also common, but usually goes hand in hand with the under provision of protein and energy (Royal College of Physicians, 2008).

A survey to assess protein energy malnutrition in South Darfur in February 2007, covered both Nyala town and the surrounding camps. The results of the study showed that the global acute malnutrition was found to be 18.9 %, while severe acute malnutrition was 1.0 % (Unicef, 2007).

Materials and Methods:

Study area and population:

The study was carried out in Alruhal (nomads) Internal Displaced Population (IDP) camp at the suburbs of Kass locality (South Darfur, Sudan) in the period 2011-2012. Kass locality is 86 Km from Nyala, the capital of South Darfur State. The camp has an estimated population of approximately 9860 people. Children under five were found to be 1972. This is a community based cross sectional descriptive study.

Study design:

Descriptive, cross-sectional community based study was conducted to The Prevalence of protein energy malnutrition Among Children Under Five years kass locality.

Sampling technique:

A sample size of 384 children was determined using the following statistical formula \( N = \frac{z^2 \cdot p \cdot q}{d^2} \).

Data was collected using a structured questionnaire directed to the mothers and anthropometric measurement tool was used: electronic scale high board, MUAC and the presence of oedema. The data was analyzed using micro-computer software programs (SPSS, Excel and Emergency Nutrition Assessment (ENA) to estimate the prevalence, weight for height (< (-2) Z-score and/or oedema) and (SPSS version 16) to check the association among different variables.

Results:

The prevalence of (PEM) was found to be 20.6%, the severe form was 6.55% while the moderate form was 14.05%. The prevalence was highest among males (24.9%) compared to 16.4% in females, \( P=0.007 \). The age group (6-12) months was mostly affected 24.6\% (\( P=0.000 \)).

<table>
<thead>
<tr>
<th>Gender</th>
<th>Normal N</th>
<th>Normal %</th>
<th>Malnourished N</th>
<th>Malnourished %</th>
<th>Total N</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>48</td>
<td>12.5</td>
<td>195</td>
<td>50.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>31</td>
<td>8.1</td>
<td>189</td>
<td>49.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>20.6</td>
<td>384</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ x^2 = 3.962 \quad P. value = 0.047, \text{ Significant} \]

Discussion:

The prevalence of malnutrition was found to be (20.6\%). This agrees with the results of the survey conducted in South Darfur Otash camp (WHO, 2000), and (UNICEF, 2007), The GAM for children aged (6-59) months was 15.6\%, and SAM was 1.8\%.

Acute malnutrition was affecting 14.1% of the target population in Kass. Results agree with 23.6% in Kalma, and 10.7% in Muhajiria which were stated in the (Survey of South Darfur, 2004).

The present study showed that malnutrition was higher in males (12.5\%) than females (8.1\%).

How to Cite this Article:

Malnutrition Gender Normal N % Malnourished N % Total N %
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Male | 147 | 38.3 | 48 | 12.5 | 195 | 50.8 |
Female | 158 | 41.1 | 31 | 8.1 | 189 | 49.2 |
Total | 305 | 79.4 | 79 | 20.6 | 384 | 100 |

\[ x^2 = 3.962 \quad P. value = 0.047, \text{ Significant} \]
Those findings revealed a strong relation existed between gender and malnutrition. This finding was found to be statistically significant $x^2 = 7.19, (P = 0.007)$. This finding agrees with the study in Khartoum at Jafer Iben Owfe Emergency Pediatric Hospital (Alawia, 2009).

**Conclusion:**

The prevalence of malnutrition among under five children was (20.6%). Males were more affected than the females (12.5%) and females (8.1%), difference was statistically significant ($P = 0.047$).

**Recommendation:**

The study made the following recommendations; nutrition education programs must be designed and directed to the mothers. Families with low income can be helped through the productive family schemes. Continuous nutritional surveys are essential to detect children affected by (PEM) and promote treatment. In addition, supplementary Feeding Program should be established to reduce (PEM) prevalence.

**Acknowledgement:**

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