

Malnutrition among first year school children in Iraq

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Summary:

Fac Med Baghdad
2007; Vol. 49, No.3
 Received April 2007
 Accepted June 2007

Background: Iraqi people have endured an excess burden of morbidity and mortality during the last two decades due to wars and sanctions. This report was carried out to assess the nutritional status of first year primary school children.

Methods: A total of 3881 school children in Balad district in Salahadin governorate was included in the study. Age, height and weight were recorded. Malnutrition was regarded as value of less than 2 SD of the reference value.

Results: Among the total sample, 16.5%, 20.06% and 15.3% were underweight, stunted and wasted, respectively. No significant difference was detected in malnutrition rates between both sexes.

Conclusion: High rates of malnutrition were detected among school children.

Key words: malnutrition, first years school children, Iraq

Introduction:

The Iraqi people have endured an excess burden of morbidity and mortality during the last two decades due to wars and sanctions¹⁻³. Several reports referred to the adverse effect of sanctions on health indicators. The indicators an increased infant mortality rate 4-6, increased prevalence of low birth weight and prematurity⁵⁻⁸, increased malnutrition among children^{2,5,6,9} and increased perinatal mortality rate¹⁰; plus the deterioration of health services^{2,5,11}. Unfortunately no report was published on nutritional status of children at school registration. Thus, this work was carried out to assess the nutritional status of first year primary school children.

Materials and methods:

A total of 3881 school children of first year primary schools of Balad district of Salahadin governorate, were included in the study. They were randomly selected in the district. The range of age was 6 - 8 years, giving a male to female ratio of 1.05:1. The data were collected from Feb. 15 to 29 April 2004. Height / length measuring board and physician balance beam scale were used. Malnutrition was regarded as value less than 2 SD of the reference value. Weight for age is an indicator of underweight, height for age is for a stunting and height for weight for wasting¹¹. EPI- info version 6 statistical package for data analysis was used.

Results:

Among the 3881, 640 (16.5%), 779 (20.06%) and 594 (15.3%) were underweight, stunted and wasted, respectively, (Table 1). Rates of underweight, stunting and wasting among males were 16.3%,

19.8% and 15.1 %, respectively, and females were 16.0%, 20.1 % and 15.4%, respectively.

No significant differences were demonstrated in malnutrition rates between both sexes ($p > 0.05$). These findings are shown in Table 2.

Table 1 Rates of malnutrition among school children

Variable	Malnutrition	
	No	%
Underweight	640	16.5
(Weight for age) Stunting	779	20.07
(Height for age) Wasting	594	15.3
(Height for weight)		

Table 2 sex distribution of malnutrition among school children

Variable	Male		Female	
	No.	%	No.	%
Underweight	324	16.3	303	16.0
(Weight for age) Stunting	394	19.8	380	20.1
(Height for age) Wasting	300	15.1	291	15.4
(Height for weight)				

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Discussion:

In this study, the revealed rates of underweight, stunting and wasting, 16.5%, 20.07% and 15.3%, respectively, are higher than that reported in 1993 in Baghdad (6.29%, 8.75% and 0.97%, respectively)¹³. A nutritional survey conducted by Nutritional Research Institute (NRI) in Baghdad showed that the mean weight and height of children were similar to those of reference population of United States National Center for Health Statistics (NCHS)¹⁴. The rates of malnutrition were sharply increased since 1991⁹, and remained at an unacceptably high levels till 1996^{5,6}. This result may be attributed to the economic sanctions imposed on Iraq since 1990. For more Iraqi population, household food has been dependent on the rations received from state authorities. It is equivalent to 1093 calories per person (approximately 40% of daily requirements) for the period 1990 to 1997, then increased to 2030 calories after the memorandum of understanding^{4,5}. Several reports referred to the effect of sanctions on health indicators⁴⁻¹¹

The finding of no significant differences in underweight, stunting and wasting between both sexes is due to the fact that both sexes received similar rations that had the same nutritional value.

Anthropometric indices in preschool children may be linked to increased mortality and morbidity^{15,16}, but data on school-age population are scarce and controversial¹². Thus despite the worldwide use of anthropometric criteria to classify nutritional status in children and adolescents, still the biological meaning of these criteria is not yet well established with the exception of the tasks that are markedly associated with body size. Although efforts have been made to construct international references as alternative¹⁷, a valid cut off for low weight for height indicator with associated health significance in school age children or adolescents has not been identified¹⁸. However, construction of norms, thought to be one of the best solutions, has operations and cost implications that are not easy to resolve in developing countries.

High rates of malnutrition were detected among the school children, and further studies are needed to clarify the nutritional status and the effect of malnutrition on performance of school children.

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