PREVALENCE OF MALNUTRITION AMONG SCHOOL GOING CHILDREN OF UNIVERSITY CAMPUS PESHAWAR 2013

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ABSTRACT

BACKGROUND: School going children are one of the neglected public health sectors and thus lead to improper nutrition and are at potential risk for growth and developmental problems starting from early life, and eventually affecting their physical and mental status, so this study was conducted to highlight malnutrition problems among school going children.

OBJECTIVES: To find the prevalence of malnutrition in school going children of university campus Peshawar.

MATERIAL AND METHODS: A cross-sectional study was conducted among 400 school going children of university campus Peshawar; during April to August 2013. Two schools of male children of age four to twelve years were included while female children, migrants, and those having any pathological conditions were excluded. Weight and height were measured and body mass index calculated using standard procedures of anthropometric measurements. After that the individual BMI were categorized according to the international standards.

RESULTS: The prevalence of malnutrition in our study was 37% among 4 to 12 years school age children of university campus Peshawar. The prevalence of under nutrition was found in 30%; out of which 18% were slightly underweight, 10% were moderately underweight and only 2% were severely underweight, while only 7% were overweight.

CONCLUSIONS: The prevalence of malnutrition was more (37%) among four to twelve years school going children of University campus Peshawar and approximately 63% were normal on the measurements of BMI calculated.

KEY WORDS: Prevalence, Malnutrition, Underweight, Children.

INTRODUCTION

According to WHO survey, prevalence of underweight is 23% worldwide and 41% in south Asia⁽¹⁾. The prevalence of moderate underweight in Pakistan is 31% and severe underweight is 13% as shown by National Nutritional Survey (2001-2002)⁽²⁾. The World Health Organization estimates that by the year 2015, the prevalence of malnutrition will be reduced to 17.6% globally, with 113.4 million children younger than 5 years affected as measured by low weight for age. The overwhelming majority of these children, 112.8 million, will live in developing countries with 70% of these children in Asia, particularly the south-central region, and 26% in Africa⁽³⁾. Malnutrition is globally the most important risk factor for illness and death, contributing to more

than half of deaths in children worldwide; child malnutrition was associated with 54% of deaths in children in developing countries in 2001⁽⁴⁾. In developing countries, poor perinatal conditions account for 23% of deaths in children younger than five. Malnourished women are at high risk of giving birth to low birth weight infants. Many low birth weight infants (23% of all births) face severe short-term and long-term health consequences, such as growth failure in infancy and childhood, which increases risk of morbidity and early death^(4, 5). Despite marked improvements globally in the prevalence of malnutrition, rates of under nutrition and stunting have continued to rise in Africa, from 24% to 26.8% and 47.3% to 48%, respectively, since 1990⁽⁶⁾.

Pakistan, having population of 164 million, with low level of socioeconomic development, human development index is 142nd in the world and 24% of the population lives below poverty line with 17% earning less than a dollar a day⁽⁷⁾. The health profile of Pakistan is characterized by high population growth rate, high infant mortality and child mortality rates of 78 and 97 per 100,000 respectively⁽⁸⁾. At the national level, 24% of the population is under the calorie based food plus non-food poverty line and more than 41% children less than 5 are under weight for their age⁽⁹⁾. Knowing the importance of malnutrition prevalence; we conducted this study to find the prevalence of malnutrition and to recommend measures for its prevention.

MATERIAL AND METHODS

A cross-sectional study was conducted among school going children of university campus Peshawar. First of all, list of all schools of university campus, were constructed and then following the inclusion and exclusion criteria, female school going children were excluded and only two male schools were included by means of simple random method, and from each school 100 children were selected randomly. The sample size of 400 was calculated on the basis of WHO sample formula having 50% prevalence and 95% confidence interval with 5% precision. Male school going children were selected while a child suffering from any disease, migrants and uncooperative were excluded. 400 male children were selected and weight and height were measured and body mass index calculated and then interpreted accordingly. The weight was measured on a weight machine and the height measured using measuring tape. Before the actual data collection, a pilot study was conducted to assess the efficiency of the study questionnaire. SPSS and Microsoft Excel 2007 XP were used for data entry, processing and analysis.

RESULTS & DISCUSSION

The study is unique in its character because it is the first ever study to find the prevalence of malnutrition in school going children of age

range four to twelve years among university campus. The prevalence of BMI less than 19 were found in 30% of school going children. In our study, the prevalence of malnutrition calculated was 37% among school children whereas in a study conducted in 2004 by the District Health Office in Rawalpindi, whose sample included 1251 students studying in 45 different Madrassas in the city, showed that around 14% of school children were suffered from malnutrition⁽¹⁰⁾. According to our study results, 63% of schools going children were having normal BMI as calculated. Out of 37% malnourished, 30% of schools going children were having BMI less than normal that is less than 19; while only 7% has BMI more than 25. Interestingly in our study results, none of the school children were found to have BMI more than 29.

In our study the prevalence of under nutrition as of BMI less than 24 were calculated as 30% while according to WHO statistics, 45% male and 47% females are under weight in Pakistan⁽¹¹⁾. According to National Nutritional Survey (2001-2002), the prevalence of mild under nutrition was 24%, prevalence of moderate under nutrition was 31% in Pakistan and severe under nutrition was 13%⁽¹²⁾. In our study, 7% were overweight having BMI between 25 to 29.9; and thus none of the children going children were obese as shown in Table NO: 1 & Graph No 1.

Graph No 1. Percentage of Different Catagories of Malnutrition Among n=400 School Going Children of University Campus Peshawar

In our study, 18% were underweight having BMI between 19-23.9, 10% were mild to moderate underweight having BMI 15-15.9; and only 2% were severely underweight having BMI less than 15, while in a study the prevalence of underweight turned out to be 17% in study conducted at Rana Liaquat Government College of home-economics, Karachi⁽¹³⁾. Similarly in South Asia according to WHO statistics the prevalence of moderate and severe under nutrition was 46% and 22% respectively⁽¹¹⁾. According to National Nutritional survey (2001 – 2002), the prevalence of moderate stunting in Pakistan is 37% and prevalence of severe stunting is 18%⁽¹²⁾. In the above study, the wasting in students was 14% while according to National Nutritional survey; 13% of NCHC reference population suffers from moderate under nutrition was about 3%⁽¹²⁾. In another study of Ijaz et al. the under nutrition prevalence was 32.7% in urban students and 32.7% in rural students while in our study 30% of school going children were under nutrients¹¹. In Our study, the prevalence of under nutrition was less but in accordance to the prevalence level in urban setup like university campus Peshawar.

CONCLUSION & RECOMMENDATIONS

It was concluded that frequency of malnutrition both under nutrition and over nutrition was prevalent among school going children of age ranges four to twelve years of university campus Peshawar. Our study results are closed to the national research studies conducted and showed similar and approximate figures in school going children. Thus it is recommended that the children especially the preschool and school going should be given due consideration and the responsibility of parents and teachers be increased regarding periodically monitoring of school going young children. Apart from these the concerned institutions should conduct medical examination of all children to prevent unnecessary morbidity and mortality associated with malnutrition.

Table No 1. Frequency of Different Categories of Malnutrition Among n=400 School

Going Children of University Campus Peshawar

Category of Malnutrition	BMI Range kg/m ²	Frequency
Severely underweight/ Malnutrition	< 15.00	12
Mild to Moderate underweight/ Malnutrition	15.00 - 15.99	60
Underweight/Mild Malnutrition	16.00 - 18.49	108
Normal (healthy weight)	18.50 - 24.99	378
Overweight	25.00 - 29.99	42
Obese Class I-II-III	> 30.00	0

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