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GROWTH OF CHILDREN;
EFFECT OF FAMILY SIZE

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ABSTRACT ... faisalfc@hotmail.com **Objective:** To assess the effect of family size on growth in school going children of Faisalabad city. **Design:** An observational and descriptive study. **Setting:** Divisional Model College, Divisional Model School Madina Town Branch, Government Muslim Girls Elementary School Dhobi Ghat and Government Muslim Boys Elementary School, Eidgah Road, Faisalabad. **Duration:** June 6-8, 2003. **Subjects:** Children of 5-12 years of age. **Methods:** 207 Subjects were studied for their height and weight with reference to their age to determine the degree of malnutrition as per Waterlow's Classification. **Results:** The results show that increasing family size had a positive correlation with protein energy malnutrition. Incidence of malnutrition in a family of 3-4 members is 41.67%, while that in a family of 9-11 members is 91.66%. **Conclusion:** A statistical significance exists between the number of malnourished and their family size group.

Key words: Children, Protein Energy Malnutrition, Waterlow's Classification, Family size.

INTRODUCTION

Malnutrition is a pathological condition resulting from absolute or relative deficiency of one or more essential nutrients. The causes of malnutrition include an inadequate intake of food both in quantity and quality; and infections that increases nutrient requirements while decreasing their absorption.

According to 1996 fact sheet by WHO, an estimated 174 million under-five children in the developing world are malnourished as indicated by low weight for age, and 230 million are stunted. It is now recognized that 6.6 million out of 12.2 million deaths among children under-five years or 54% of young child mortality in developing countries is associated with malnutrition[1]. Over 800 million people still cannot meet basic needs for energy and protein, more than two thousand million people lack

essential micronutrients, and hundreds of millions suffer from diseases caused by unsafe food or by unbalanced food intake. It is estimated that more than half of the young children in south Asia suffer from protein energy malnutrition, which is about five times the prevalence in the Western hemisphere, at least three times the prevalence in the Middle East and more than twice that of east Asia. Currently, over two-thirds of the world's malnourished children live in Asia (especially south Asia), followed by Africa and Latin America[1].

UNICEF's figures show that 50% of Pakistani children are stunted, 38% underweight and 9% demonstrate evidence of wasting[2].

According to 1988 survey, 72% of children in Pakistan have been suffering from malnutrition and 10% of them from severe malnutrition[3].

Malnutrition is commoner among school going children and this study was conducted to assess the effects of family size on it. Four institutions were surveyed, which were located in the centre of the city.

SUBJECTS AND METHODS

A total of 207 primary school going children from different schools of Faisalabad aged between 5-12 years were included in the study. Each child was subjected to height and weight measurements, whereas his/her age was determined by consulting the school record. Family size was determined by a personal interview with each subject. In height measurement (cm), the child was asked to stand alongside the wall already graduated in centimeters. The child was made to stand upright and straight while his/her arms rested alongside his/her thighs. With the help of a ruler on his/her head, his/her height was measured. In weight measurements (kg), the child was weighed in light clothes without shoes. The measuring scale was readjusted at zero before weight measurement. All the subjects were classified into normal and malnourished group according to Waterlow's classification [4]as under:

The following criteria as per Waterlow's Classification was followed to classify the children into normal and malnourished groups.

$$\text{Weight / height (\%)} = \frac{\text{Weight of the child}}{\text{Weight of normal child at same height}} \times 100$$

$$\text{Height / age (\%)} = \frac{\text{Height of the child}}{\text{Height of normal child at same age}} \times 100$$

Nutritional Status	Stunting(% of height/age)	Wasting (% of weight/height)
Normal	> 95	> 90
Grade I (malnourished)	87.5 - 95	80 - 90
Grade II (malnourished)	80 - 87.50	70 - 80
Grade III (malnourished)	<80	<70

To rule out any secondary cause of malnutrition the subjects were asked about any recent ailments like diarrhea, respiratory tract infection and surgical operations and they where excluded from the study.

RESULT

In table the data is segregated according to family sizes. The table shows an increase of malnutrition with increase in the family size. It also shows that the prevalent family size in Faisalabad is 5-6 family members. The percentage of normal children ranged from 8.34% to 58.33%. The groups are significantly different from each other ($p < 0.05$).

DISCUSSION

Malnutrition is a constant feature of third world countries. Despite several efforts by the international community and local governments, the problem is getting graver day by day. This is probably due to lack of observance of family planning measures. Our results are in accordance with the studies conducted by. Qureshi et al[5] showing nutritional status of over 1000 children under 5 yrs and found that ¾ had varying degrees of malnutrition. The prevalence of severe malnutrition was higher in children in 2nd year of life and among those belonging to families

of more than 4 persons.[5]

Table I : Percent distribution of normal and malnourished children into different family size.				
Family size	**Normal**	**Grade I**	**Grade II**	**Grade III**
3-4 (n=24)	58.33%	29.16%	12.5%	0
5-6 (n=115)	33.89%	56.52%	8.69%	0
7-8 (n=56)	14.28%	75%	7.14%	3.57%
9-11 (n=12)	8.34%	83.3%	8.33%	0

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Growth of nation is linked with child's learning

Shuja Tahir