

Obesity in paediatric population of developing countries, a serious issue?

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Obesity is defined by the age and sex specific charts for BMI released by the Center for Disease Control (CDC).¹ The CDC defines normal weight for height as a BMI greater than 5% but less than 85%. A BMI between 85-95% is called at risk for overweight and a BMI greater than 95% is usually specific for increased body fat and is called overweight. These terms overweight and obesity are used interchangeably in the paediatric population though obesity can also be referred to as a level of overweight that has accompanying adverse physical or psychological issues.^{1,2}

The International Obesity Task Force (IOTF) terms obesity as the millennium disease and emphasizes on the international impact of this condition.³ The IOTF definition for obesity is not designed for clinical use; also it is not linked to a definition of extreme overweight. A z score to express BMI as a continuous measure for children of different ages cannot be driven from it and children less than 2 years of age are not included. A consensus definition on cutoff points to define overweight and obesity has not been reached.⁴

BMI (kg/m²), a formula for calculating obesity in adults cannot be applied to children as it may not correspond to the degree of fatness.⁵ CT, MRI, DEXA, total body conductivity, air displacement plethysmography, other methods for estimation of obesity are not used routinely, for economic reasons. Triceps skin fold, waist-hip ratio, bioelectric impedance analysis, all require special training and expertise.^{6,7}

Currently more than one billion over weight adults and 300 million of these are clinically obese. Obesity levels range from below 5% in China, Japan and certain African nations, to over 75% in urban Samoa. In certain Chinese cities, prevalence rates are almost 20%.⁸ It is estimated that 17.6 million children less than five years of age are overweight worldwide.⁵ Since 1980 in USA number of overweight children and adolescents has doubled and trebled. Prevalence of obese children 6 to 11 years has more than doubled since the 1960s. Obesity prevalence in youths aged 12-17 years has increased from 5% to 13% in boys and 5% to 9% in girls between 1966-70 and 1988-91 in USA.⁸

In Australia, intake of sweetened beverages has been associated with overweight and obesity in schoolchildren.⁹ In Eastern Mediterranean Region, overweight and obesity was highest in Kuwait and lowest in Lebanon when

adolescent girls from Egypt, Kuwait and Lebanon were compared.¹⁰ In Thailand the prevalence of overweight and obesity in 11 to 13 year olds was 18.4%.¹¹ Studies from Iran, Qatar, Sri Lanka, India, Malaysia, and Saudi Arabia all show increased trend of obesity and overweight.¹²⁻¹⁷

Data from Pakistan is scarce. Recent study on affluent school children showed percentage of obese and overweight children to be 6% and 19% respectively.¹⁸ Other data has shown that under nutrition and obesity co-exist.^{19,20} Comparison of National Health Survey of Pakistan (NHSP) in urban areas²¹ and Karachi survey²⁰ showed the prevalence of overweight and obesity as 3.0% vs 5.7% (p<.001) respectively. Two studies done in different areas of Karachi by Aziz et al and Jaffar et al have suggested comparable prevalence of obesity (6% and 5.7%).¹⁸⁻²⁰

Genetic predisposition is important in the etiology of obesity. Data suggests lack of physical activity, urbanization/modernization and, globalization of food markets as causes of overweight/obesity in adults and children.^{5,8} Intake of energy dense food, change in diet from complex carbohydrates to foods with high proportion of saturated fats and sugars is responsible for the epidemic of obesity. Nutritional transition in Asians with a change of diet based on staple grains, starchy roots, legumes, fruits, vegetables and small amount of meat to processed, refined food, more red meat, added sugar, fat and preservatives is an important causative factor for obesity.¹⁴

The transformed diet along with a decline in physical activity leading to a sedentary life with long hours of television viewing and computer games is an important factor for obesity.^{4,18-20} Childhood obesity is affiliated with a higher disability in adulthood and sometimes premature death.

Definite steps have to be taken to curb this dangerous epidemic of obesity. Mild to moderate obesity can be treated by behaviour modification, increase in physical activity, and a decrease in sedentary activities. A multidisciplinary approach has to be adopted, based on family involvement with community and care facilities. Severe obesity in children and adolescents is serious and may require hospitalization, non conservatory dietary modification, drug therapy (Metformin in obese adolescents with hyperinsulinaemia and a family history of diabetes) and bariatric surgery (BMI > 40 kg/m² with skeletal

maturity and obesity associated co-morbid).⁴

World Health Assembly of 2004, WHO global strategy on diet, physical activity and health⁸ describes actions needed to support, adoption of healthy diet and regular physical activity. The objectives of this forum include health promotion, and chronic disease prevention, especially for poor and disadvantaged populations.

In Pakistan majority of mothers still breast feed the babies which is considered to be protective against obesity, though the exact mechanism is unclear. Hence exclusive breast-feeding should be encouraged for a longer duration as this is inversely associated with risk of overweight.

Other recommendations include, counseling children and parents on a healthy diet in school and through the media. Government policy should encourage physical activity as part of the school and madressah syllabus.

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