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Anthropometric measurement and nutritional assessment of rural school children: A survey study in Bakrol and Madhavnagar village of Vadodara district

Sapna Desai², Dhara Padiya¹, Vaidehi Kachhela¹, Shail Patel¹, Sohan Patel²

¹ Student Pioneer Pharmacy, Vadodara, Gujarat, India

² Dept. of Pharmacology, Professor, Pioneer Pharmacy College, Vadodara, Gujarat, India - 390019

Correspondence: Dr. Sapna Desai

Email Id: serviceheb@gmail.com

Abstract:

Malnutrition remains a critical public health issue, particularly in rural areas where children face growth impairments and developmental delays due to inadequate nutrition and healthcare access. This study evaluated the nutritional status of 159 schoolchildren from Bakrol Prathmik Shala and Madhavnagar Prathmik Shala using anthropometric measurements, including weight, height, BMI, skinfold thickness, and skeletal proportions. The results indicated that 25.16% of students were underweight, 8.18% were overweight, and 91.2% had BMI values suggesting undernutrition. Additionally, 18.24% had abnormal height, while all students exhibited femur-length deficiencies, indicating chronic stunting. Body fat analysis showed 88% of males and 94% of females had low fat reserves, while 73% had reduced bone mass, increasing the risk of osteoporosis and frailty in adulthood. Socioeconomic factors significantly influenced malnutrition, as 23.13% of fathers and 27.46% of mothers were illiterate, and many families had limited financial resources, restricting access to nutritious food and healthcare. These findings highlight the urgent need for targeted interventions, including enhanced school nutrition programs, regular health screenings, parental education, and government-supported food security policies. Without timely action, malnutrition could lead to weakened immunity, cognitive impairment, and long-term health complications, affecting both individual well-being and societal development.

Keywords: Malnutrition, Anthropometric Measurements, Nutritional Deficiencies, Growth Stunting, School Nutrition, Socioeconomic Impact

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