

Confronting the Obesity Epidemic in Pakistani Children - Management, Causes, and the Role of Monogenic Factors

Sir,

Childhood obesity is becoming a growing concern in low- and middle-income countries (LMICs), including Pakistan, with significant health implications. This letter highlights the often-overlooked epidemic in Pakistan, discussing its underlying causes, management strategies, and the role of monogenic factors. By addressing this issue, we gain insights into its complexity, paving the way for the development of effective healthcare interventions.¹

Several factors contribute to the rising rates of childhood obesity in Pakistan. Epigenetics, the gut microbiota, intrauterine, and intergenerational influences have lately surfaced as significant reasons for the obesity epidemic.^{2,3} Other factors include small for gestational age (SGA) status at birth, formula feeding instead of breastfeeding during infancy, and the early introduction of protein in an infant's diet.^{3,4} The use of traditional diets is increasingly being replaced by processed foods high in sugar, fat, salt, and calories, signalling a shift in nutritional patterns. Rapid urbanisation has led to more sedentary lifestyles, with children engaging in less physical activities. Poor dietary choices are compounded by the lack of affordable, healthy food options. Furthermore, aggressive marketing campaigns specifically target children, shaping their preferences for unhealthy foods. Cultural norms and socio-economic disparities also play a crucial role in influencing dietary habits and levels of physical activity.^{5,6}

Recent data reveals that approximately 5.4% of Pakistani children aged 9-17 years are obese, with an additional 5.8% classified as overweight. Among children under the age of five years, the obesity rate stands at 2.5%, a figure that Pakistan is striving to prevent from rising further.^{5,6}

Genetic factors are as important as environmental and behavioural influences in childhood obesity. Mutations in single genes, such as MC4R (melanocortin-4 receptor), LEPR (leptin receptor), and LEP (leptin), can lead to monogenic obesity syndromes, which, though rare, have significant implications.⁷

Tackling childhood obesity in Pakistan demands a comprehensive approach that includes interventions at the individual, family, community, and policy levels, with dietitians and nutritionists playing a pivotal role. These professionals conduct thorough dietary assessments to understand children's eating

habits and nutritional gaps. By developing personalised nutrition plans tailored to each child's needs, they provide education and counselling on healthy eating, implement behavioural strategies to reduce emotional or stress-related eating, and offer ongoing monitoring and support to ensure adherence to nutrition plans. Their expertise is essential in crafting effective, individualised plans that foster lifelong health.

Promoting healthy diets, regular physical activity, and lifestyle changes, along with crucial nutrition education for both parents and children, is vital at the family level. Schools can contribute by implementing physical education and nutrition programmes, creating safe recreational spaces, and encouraging healthy diets. At the policy level, efforts should focus on regulating the marketing of unhealthy foods to children and integrating health education into school curricula. Community outreach programmes are also essential for raising awareness about childhood obesity and promoting healthy eating habits within the broader community. The integration of these strategies is essential for building a healthier future for Pakistani children.^{1,2}

Addressing childhood obesity in Pakistan requires a holistic strategy encompassing education, community engagement, policy reforms, and targeted healthcare interventions. By understanding the multifaceted causes and implementing robust management strategies, we can work toward a healthier future for Pakistani children. Dietitians and nutritionists are key players in this effort, offering their expertise to develop effective, individualised plans that support lifelong health.

COMPETING INTEREST:

The author declared no conflict of interest.

AUTHOR'S CONTRIBUTION:

VRR: Idea, identifying references, drafting, proofreading and final approval.

REFERENCES

- Butt F, Farooq Butt A, Alam F, Aslam N, Abdul Moeed H, Butt FA. Perception and management of obesity among Pakistani doctors. *Cureus* 2019; **11(2)**:e4156. doi: 10.7759/cureus.4156.
- Rinninella E, Raoul P, Cintoni M, Franceschi F, Miggiano GAD, Gasbarrini A, *et al.* What is the healthy gut microbiota composition? A changing ecosystem across age, environment, diet, and diseases. *Microorganisms* 2019; **7(1)**:14. doi: 10.3390/microorganisms7010014.
- Indrio F, Martini S, Francavilla R, Corvaglia L, Cristofori F, Mastrolia SA, *et al.* Epigenetic Matters: The link between early nutrition, microbiome, and long-term health development. *Front Pediatr* 2017; **5**:178. doi: 10.3389/fped.2017.00178.
- Kansra AR, Lakkunarajah S, Jay MS. Childhood and adolescent obesity: A review. *Front Pediatr* 2021; **8**:581461. doi: 10.3389/fped.2020.581461.
- Khan S, Abbas A, Ali I, Arshad R, Tareen M, Shah MI.

Prevalence of overweight and obesity and lifestyle assessment among school-going children of Multan, Pakistan. *Isra Med J* 2019; **11(4)**:230-3.

6. Mansoori N, Nisar N, Shahid N, Mubeen SM, Ahsan S. Prevalence of obesity and its risk factors among school children in Karachi, Pakistan. *Trop Doct* 2018; **48(4)**:266-9. doi: 10.1177/0049475518786664.
7. Niazi RK, Gjesing AP, Hollensted M, Have CT, Grarup N, Pedersen O, et al. Identification of novel LEPR mutations in Pakistani families with morbid childhood obesity. *BMC Med Genet* 2018; **19(1)**:199. doi: 10.1186/s12881-018-0710-x.

Versha Rani Rai

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Department of Paediatric Endocrinology, National Institute of Child Health, Karachi, Pakistan

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Correspondence to: Dr. Versha Rani Rai, Department of Paediatric Endocrinology, National Institute of Child Health, Karachi, Pakistan
E-mail: versharai.sg@gmail.com

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Received: May 26, 2023; Revised: September 12, 2023;
Accepted: October 02, 2024
DOI: <https://doi.org/10.29271/jcpsp.2024.12.1549>

