



Vitamin D Deficiency in Indian Adolescents—Time for Targeted Action

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Vitamin D deficiency has reached pandemic proportions with significant short- and long-term impacts [1]. Besides the evident adverse effects on bone health, vitamin D deficiency is associated with several comorbidities like diabetes, reactive airway disease, and metabolic syndrome [2]. The effects on bone health are exaggerated in adolescence, the phase of life where 40% of adult bone mass is formed. There is a paucity of information about the prevalence and covariates of vitamin D deficiency in Indian adolescents [3]. The information is vital for the development of targeted preventive strategies.

Chakrabarty S, in this issue of the Journal, reports the prevalence, distribution, and covariates of vitamin D deficiency in 11,822 Indian adolescents included in the CNNS study [4, 5]. Besides confirming the high burden of vitamin D deficiency, the study identified female gender, residence in North India, higher socioeconomic status, Hindu caste, obesity, and lower protein intake as the key covariates of the disorder. The large pan-Indian representative sample size makes the results of the study generalizable.

The study is limited by its cross-sectional nature, the use of WHO (and not regional) growth charts, and the lower vitamin D cutoffs. The cross-sectional nature precludes the implications of causality with the covariates and vitamin D deficiency. The use of WHO growth chart underestimates obesity in Indian adolescents and may explain the lower prevalence of obesity in the study [6]. While the exclusion of nonadolescents in the study may explain the lower prevalence of vitamin D deficiency compared to previous Indian data, the use of a reduced vitamin D cutoff (12 ng/mL as against 20 ng/mL) was also contributory [7].

The study provides valuable insights into the prevalence and covariates of vitamin D deficiency. Using the conservative estimate of 25% observed in the study, the burden of vitamin D deficiency in Indian adolescents exceeds 60 million. The significant regional, economic, anthropometric, and dietary variations in the prevalence of vitamin D deficiency highlight the role of targeted approaches in preventing the disorder. There is a need for evaluation of strategies targeting the at-risk individuals (northern region, obesity, girls, higher socioeconomic status, lower protein intake) before widespread implementation.

Declarations

Conflict of Interest None.

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