

# Vitamin D deficiency and its effects-a consequence of lack of knowledge and neglect - an editorial

H N Sarker<sup>1</sup> 

Vitamin D deficiency is one of the most paradoxical and neglected global health issues of the 21st century. Despite abundant sunlight in many parts of the world, particularly in South Asia, the Middle East, and Africa, hypovitaminosis D continues to affect a substantial proportion of the population of all age groups. This phenomenon reflects not merely a biological deficiency but a systemic failure-rooted in inadequate awareness, sociocultural practices, urban lifestyles, and clinical under-recognition.

Though traditionally associated with skeletal disorders such as rickets in children and osteomalacia in adults, vitamin D deficiency is now increasingly recognised as a multisystem disorder. Vitamin D, a secosteroid hormone, plays a crucial role in calcium homeostasis and bone metabolism, but its receptors are widely distributed in various tissues, including immune cells, cardiovascular structures, and the central nervous system. Consequently, deficiency states have been implicated in a wide spectrum of conditions ranging from osteoporosis and fractures to autoimmune diseases, infections, metabolic syndrome, and neuropsychiatric disorders<sup>[1]</sup>.

The persistence of vitamin D deficiency in sun-rich regions underscores the role of sociocultural and behavioural determinants. Urbanisation has led to indoor lifestyles with reduced sun exposure. Cultural clothing practices, excessive use of sunscreens, and air pollution further limit ultraviolet B (UVB) penetration, impairing cutaneous synthesis of cholecalciferol<sup>[2]</sup>. Moreover, dietary sources of vitamin D are limited and often insufficient in typical diets, particularly in low-resource settings where fortified foods are not widely available.

A critical but often overlooked factor is the lack of awareness among both the general population and healthcare providers. Vitamin D deficiency frequently presents with non-specific symptoms such as fatigue, musculoskeletal pain, and generalised weakness, leading to misdiagnosis or dismissal. In clinical practice, routine screening is not universally implemented, and supplementation strategies are

inconsistently applied. This gap between evidence and practice highlights a broader issue of neglect in preventive healthcare.

The consequences of this neglect are far-reaching. In children, vitamin D deficiency compromises skeletal development, leading to rickets and impaired growth. In adults, it contributes to osteomalacia, increased fracture risk, and reduced quality of life. Emerging evidence also suggests a role in susceptibility to infections, including respiratory illnesses, and modulation of immune responses<sup>[3]</sup>. Furthermore, associations with chronic diseases such as diabetes mellitus, cardiovascular disease, and certain malignancies suggest that vitamin D deficiency may have a broader public health impact than previously appreciated<sup>[4]</sup>.

Addressing this silent epidemic requires a multifaceted approach. Public health strategies must prioritise awareness campaigns to educate communities about the importance of safe sun exposure and dietary intake. Food fortification policies, particularly in regions with high prevalence, offer a cost-effective intervention. In clinical settings, guidelines for screening high-risk populations—such as pregnant women, elderly individuals, and those with limited sun exposure—should be standardised and implemented.

Equally important is the need for clinician education. Healthcare providers must recognise the diverse manifestations of vitamin D deficiency and adopt evidence-based supplementation protocols. Integration of vitamin D assessment into routine clinical practice, particularly in primary care, could significantly reduce the burden of undiagnosed cases.

Vitamin D deficiency exemplifies a preventable disorder that persists due to a combination of ignorance and inaction. In an era of advancing medical knowledge, its continued prevalence is difficult to justify. Bridging the gap between knowledge and practice is imperative. Without concerted efforts, vitamin D deficiency will remain not just a biochemical abnormality, but a marker of systemic neglect in global health.

1. Professor (Ex), Medicine, Sher-E-Bangla Medical College, Barishal, and Sheikh Sayera Khatun Medical College, Gopalganj, Bangladesh (ORCID: 0000-0001-6523-9395)

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