

Editorial

Vitamin-D deficiency and Psychiatric Morbidity

****Prof. S. Abdullah Al Farooq, Professor of Psychiatry, JIMCH***

** For Correspondence*

Vitamin D, the sunshine vitamin is a fat soluble secosteroid. Intestinal absorption of calcium, magnesium and phosphate is dependent on vitamin D and various roles on biological effects^{1, 2, 3}. Role of activated vitamin D in calcium homeostasis and bone health is identified about a century ago. Recent studies have also identified vitamin D has anti-inflammatory, anticancer, antimicrobial, immuno-modulatory functions. It also plays role in numerous brain processes including neuro-protection, regulation of neurotrophic factors, neuroplasticity, immuno- modulation and brain development⁴.

Vitamin D is produced in the body when the skin is exposed to sunlight, can be obtained from dietary sources such as oily fish, red meat, liver, egg yolks and fortified foods. Common forms are ergo-calciferol vitamin D₂ and cholecalciferol vitamin D₃. Daily requirement from birth is about 400 IU for infants, 600 IU up to the age of 70 years and 800 IU for 70 years and above⁵.

Vitamin D deficiency is a global health problem. About a billion people in the world have vitamin D deficiency due to inadequate sun exposure or not taking adequate amount of food containing vitamin D^{6, 7}.

It is well known that vitamin D deficiency lead to loss of bone density which can contribute to osteoporosis including weak bone, bone pain and muscle weakness and fracture in adults & Rickets in children. Several medical conditions like diabetes mellitus, high blood pressure, malignancy, auto-immune conditions such as multiple sclerosis, rheumatoid arthritis, neurological disorders like Parkinson's disease, Alzheimer's disease and autism spectrum disorders has been associated with vitamin D deficiency^{4, 5}.

Vitamin D is crucial not only for bone health also for proper brain development and psychological functioning. Taking into account the role of vitamin D into various neurological processes and brain development, vitamin D deficiency has role in developing different psychiatric disorders. Low levels of vitamin D are associated with depression, seasonal affective disorder and schizophrenia. Deficiency has also relationship with tiredness, general aches, other medically unexplained symptoms and somatoform disorders⁴.

Some studies also reported as association between vitamin D deficiency and cognitive impairment. Psycho-geriatric patients may be at risk for vitamin D deficiency due to their age, dietary factors and less exposure to sunlight. Both vitamin D deficiency and insufficiency are highly prevalent in adolescents with severe mental illness⁴.

Vitamin D deficiency is common health problem including psychiatric illness and an important public health issue but frequently un-recognized. Awareness about sunlight exposure, regular intake of vitamin D containing food, identification and management of vitamin D deficiency might play a major role for preventing a number of psychiatric illnesses and will decrease such disease burden. Therefore regular screening for vitamin D levels should be considered.

References

1. Railton D. vitamin D: Recent research uncovers new benefits. Medical news today. 1 August 2018.
2. Mehta R. vitamin D and Cancer risk – A potential magic bullet? American society for Nutrition 23 March 2018.

3. Holick MF. Sunlight and vitamin D for bone health and prevention of autoimmune disease, Cancer and Cardiovascular disease. *The American journal of clinical nutrition* 2004; 80 (6 suppl): 16785-885
4. Nematollah Sotodeh - Asl, Mohammad Reza Tamador, Farhad Malek, Mehrdad Zahmatkesh. Vitamin D deficiency and psychological disorders. *Journal of Parathyroid disease*, Volume 2, Number 1, March 2014.
5. Razzak MA, Rahman MA, Begum UH, Rahman QAA, Wahab MA. Effects of Vitamin D deficiency An update. *JAFMC Vol 14, No1 (June) 2018*; 78 – 83
6. Holick MF, Chen TC. Vitamin D deficiency; a worldwide problem with health consequences. *An J Clin Nutr* 2008; 87: 10805 – 65
7. Izi-Hajj. Fuleihan G. Vitamin D deficiency in the middle east and Its health consequences. In: Holick MF, *clinical Applications*. New York: Humana Fxss; 2010; 469-94