



# Prevalence of Vitamin D Deficiency in the East-Azarbaijan Province and Its Relationship with Demographic Factors

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## ABSTRACT

**Introduction:** Vitamin D is an essential fat-soluble vitamin that plays a crucial role in various physiological functions. Its deficiency can have significant implications for multiple physiological systems and lead to a range of adverse health consequences. Consequently, the prevalence of vitamin D has emerged as a global health concern. However, there is limited information regarding the prevalence of vitamin D deficiency in East Azerbaijan Province. Therefore, this study aimed to investigate the prevalence of vitamin D deficiency in the population of East-Azerbaijan Province and its relationship with demographic factors.

**Methods and Materials:** In 2017, this cross-sectional study was performed in the urban and rural areas of East-Azerbaijan Province and examined 1,500 households in Tabriz, Marand, Bonab, Otaku, Varzeghan, and Khadafarin. At least two individuals (one female and one male) from the eligible members of each household, aged between 15 and 65, were randomly chosen and investigated. Individuals with low alertness and confirmed mental illness, as well as those with cognitive disorders, blindness, deafness, and speech disorders, were excluded from the study. In this study, questionnaires relating to socio-economic and demographic status were completed. Also, the patient's serum vitamin D level was measured using the ELISA method. The relationship between vitamin D status and demographic factors was evaluated. The data was analyzed using SPSS software.

**Results:** A total of 2816 individuals were investigated in the present study. The age group between 45 and 55 was reported as the largest among the participants. More than 76.9% of the participants exhibited varying degrees of vitamin D deficiency. The prevalence of vitamin D deficiency in rural areas (64.6%) was significantly higher than in Tabriz City (37.7%;  $p = 0.001$ ). As the age increased to 45 years, the prevalence of vitamin D deficiency enhanced but relatively decreased. However, the age group between 35 and 45 years had the highest prevalence of vitamin D deficiency (84.2%). Vitamin D deficiency in men and women was reported as 40.6% and 61.9%, respectively ( $p = 0.01$ ). No significant difference was observed in any of the classifications between singles and married individuals ( $p = 0.05$ ).

**Conclusion and Discussion:** The current research findings indicate that the prevalence of vitamin D deficiency in rural areas is significantly higher than in Tabriz City. Also, the occurrence of vitamin D deficiency is notably higher in women compared to men. Thus, it is necessary to recognize the importance of this problem and take essential actions for its prevention. Further studies are needed to confirm these observations and elucidate the underlying mechanisms.

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