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Research Article

**VITAMIN D DEFICIENCY IN THE NORTHERN REGION OF  
AL-RIYADH CITY****Bassem Dalil Al-otaibi and Abdullah Fehaid ALotaibi**

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**Abstract:**

**Introduction:** There are multiple studies done in different countries regarding the prevalence of vitamin D deficiency. Vitamin D deficiency is worldwide problem and cost effective. Many studies showed high prevalence of vitamin D deficiency in Middle East countries. This study aimed to detect the prevalence of vitamin D deficiency in the northern region of Al-Riyadh City, Saudi Arabia.

**Method:** A cross-sectional study was carried out in 65 participants whom aged 9-61 years old Randomly chosen from the clinic in May 2018 then systemic sampling starting from the number (2,4,6,8....) and selected 32 participants (16 males and 16 females) for vitamin D deficiency evaluation.

**Results:** More than half of the participants whom involved in this study have vitamin D deficiency 22 (68.75%). Regarding the gender we found that vitamin D deficiency is more common on females than males (47% and 22%) respectively. Also, whom have normal values of vitamin D are 10 (31%) participants. All participants know the benefit of sunshine on the body but few participants do regular exercise and expose their bodies on the sun.

**Conclusions:** Vitamin D deficiency has a high prevalence in the northern region in Al-Riyadh City. In addition, it had been noticed that females are more common to have this deficiency than males. In order to avoid complications of vitamin D deficiency, public educations are needed to increase the level of awareness among general population and to supply dietary intake with vitamin D to compensate the deficiency.

**Key words:** vitamin D, prevalence, Saudi Arabia.

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**INTRODUCTION:**

Vitamin D deficiency means that there is not enough vitamin D in the body. Broadly speaking, this can occur in three forms which are the body has an increased need for vitamin D, The body is unable to make enough vitamin D and not enough vitamin D is being taken in the diet. There are many sources we can obtain vitamin D such as sunlight exposure, nutritious supplements and hormone our bodies make [1, 2]. The lack of sunlight leads to many complications such as bone-deforming disease rickets in children which was first recognized by Sniadecki in 1822 [3]. In the early 1930s. The US government set up an agency to provide recommendations to parents about the beneficial effect of sensible exposure to sunlight for the prevention of rickets [4-6]. Few type of foods are naturally rich in vitamin D, so the biggest dietary sources of vitamin D are fortified foods and vitamin supplements.

Vitamin D helps body to absorb and retains calcium and phosphorus; both are significant for building bone.

In Saudi Arabia women suffering from a lack of vitamin D though sunlight is available in the entire of the year. The reason behind that there is conservative culture which requires women to cover their bodies once they want to go anywhere outside their houses. Also, the social lives of Saudi women generally start after dark which further limits their exposure to sunlight. This study aimed to evaluate the prevalence and attitude towards vitamin D deficiency.

**METHOD AND MATERIAL:**

A cross-sectional study based on questionnaires which was filled by patients whom attended to clinic and have been asked about whether they have vitamin D deficiency or not. The sample size were 32 participants (16 males, 16 females) with the age ranged from 15- 65 years old. Participants have been interviewed in privacy and they were asked if they have vitamin D deficiency or not. Data entering and analysis was done by using SPSS.

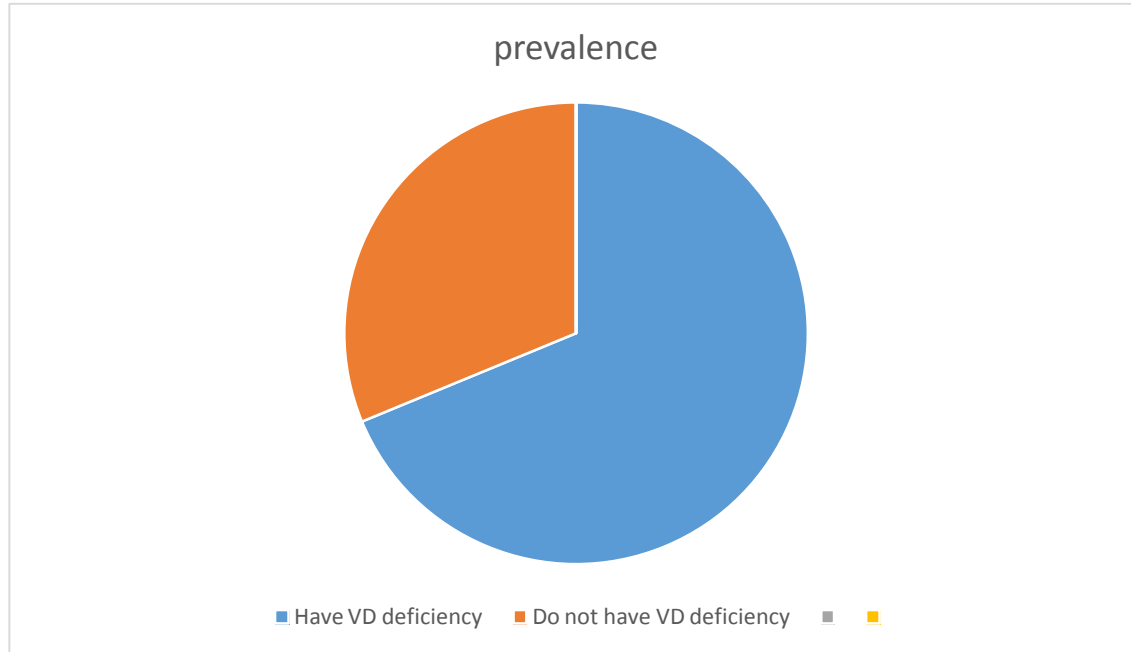
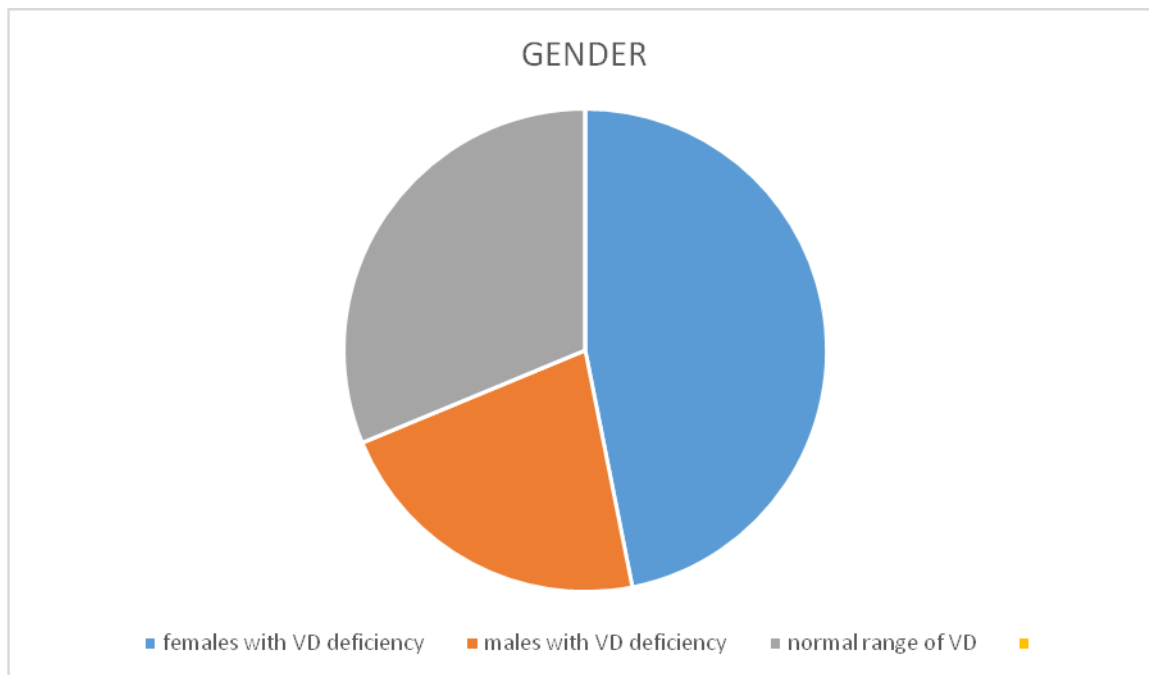
**RESULTS:**

32 participants have involved in this study (16 males and 16 females). Most of the participants were aged 18-25 year old (46%). Almost two-third of the participants do not do regular exercise and half of the participants are smokers. All participants know that sunshine exposure helps in obtaining vitamin D to strength the bones and keep body healthy but only (16%) of them go outdoor every day to expose their bodies to sunshine. More than (80%) of participants know that there are many complications of vitamin D deficiency such as osteoporosis.

Regarding the prevalence we found that more than half of the participants whom involved in this study have vitamin D deficiency 22 (68.75%). Regarding the gender we found that vitamin D deficiency is more common on females than males (47% and 22%) respectively and who have normal values of vitamin D are 10 (31%) participants.

**Table 1: shows the social-demographic information and public knowledge toward vitamin D deficiency (NO=32):**

Gender? 32(100%)	Male = 16 (50%)	Females = 16 (50%)
Aged?	Less than 18	(14%)
	18- 25	(46%)
	26- 39	(31%)
	More than 39	(9%)
Do you do regular exercise daily?	Yes (31%)	No (69%)
Do you know the complications of VD deficiency?	Yes (84%)	No (16%)
Do you have Vitamin D deficiency?	Yes (69%)	No (31%)

**Chart 1: illustrate the prevalence of vitamin D deficiency among participants****Chart 2: illustrate the prevalence of vitamin D deficiency among males and females****DISCUSSION:**

In this study we found a high percentage of the population have a low vitamin D serum level. Multiple studies have been carried out about the prevalence of vitamin D deficiency but they were mostly limited to a small sample size or assessed a

specific age group (especially elderly). In developed countries where vitamin D fortified foodstuffs are available (USA and some Scandinavian countries), prevalence of vitamin D deficiency is between 1.6–14.8% in different age groups. In other European countries where there is no vitamin D

supplementation, deficiency is more prevalent. The studies which assessed middle-aged and elderly people showed vitamin D deficiency prevalence of 14% to 59.6% in these age groups. Vitamin D deficiency prevalence is much higher in Middle Eastern countries.

Most studies have shown higher prevalence of vitamin D deficiency in the elderly. Elderly females demonstrated statistically significant higher serum levels of vitamin D compared with young and middle aged females. In this study the prevalence of vitamin D deficiency is high (69%) and it because of many contribution factors such as sunshine avoiding, lack of dietary supplements which rich of vitamin D.

#### CONCLUSION:

Despite the abundant sunlight in Saudi Arabia, the prevalence of vitamin D deficiency among young healthy Saudi males and females is 68.67%. This finding should be considered as a public health problem and health education and prevention should be encouraged.

#### REFERENCES:

1. Holick MF. Vitamin D deficiency. *N Engl J Med*. 2007; 357:266-81.
2. Boonen S, Lips P, Bouillon R, Bischoff-Ferrari HA, Vanderschueren D, Haentjens P. Need for additional calcium to reduce the risk of hip fracture with vitamin d supplementation: evidence from a comparative metaanalysis of randomized controlled trials. *J Clin Endocrinol Metab*. 2007; 92:1415-23.
3. Bischoff-Ferrari HA, Willett WC, Wong JB, Giovannucci E, Dietrich T, Dawson-Hughes B. Fracture prevention with vitamin D supplementation: a meta-analysis of randomized controlled trials. *JAMA*. 2005; 293:2257-64.
4. Cauley JA, Lacroix AZ, Wu L, et al. Serum 25-hydroxyvitamin D concentrations and risk for hip fractures. *Ann Intern Med*. 2008; 149:242-50.
5. Cauley JA, Parimi N, Ensrud KE, et al. Serum 25 HydroxyVitamin D and the Risk of Hip and Non-spine Fractures in Older Men. *J Bone Miner Res*. 2009.
6. Fractures with oral vitamin D and dose dependency: a meta-analysis of randomized controlled trials. *Arch Intern Med*. 2009; 169:551-61.