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Distribution of Vitamin D Status in a Group from Syrian Society

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ABSTRACT

Objective: The aim of this work is to study the serum levels of 25-hydroxyvitamin D3 in a sample of healthy Syrians in the city of Homs.

Method: A cross-sectional study, including 690 ostensibly healthy participants, was conducted at the National Hospital of Homs. Serum levels of 25-hydroxyvitamin D3 were measured using chemiluminescent immunoassay.

Results: The overall prevalence of vitamin D inadequacy (insufficiency, deficiency, and severe deficiency) in the study samples was 76.5%. Additionally, 49% of the samples had vitamin D deficiency, with 18.5% suffering from severe deficiency. Furthermore, levels of 25-hydroxyvitamin D3 in females were lower than in males (11.3±2.3 ng/ml versus 39.6±11.28 ng/ml, respectively, $p < 0.0001$). Veiled women had serum levels of vitamin D lower than non-veiled women, 11.3±2.5 ng/ml versus 25.5±3.2 ng/ml, respectively, $p < 0.0001$. Female gender and clothing style were identified as independent risk factors for vitamin D deficiency.

Conclusion: The prevalence of vitamin D deficiency was very common in the study population, despite the sunny weather in Homs city most of the year. Further studies with larger groups, including other Syrian governorates, are needed to elucidate lifestyle and sociocultural behavior risk factors for vitamin D deficiency.

Keywords: 25-hydroxyvitamin D3, vitamin D deficiency, vitamin D insufficiency, sunlight, Syria.

1. INTRODUCTION

Vitamin D deficiency is one of the most significant public health problems affecting various age groups, including men, women, pregnant women, newborns, children, adolescents, adults, and the elderly, even in countries with ample exposure to sunlight throughout the year. Interestingly, the Middle East, a region that experiences sunlight most days of the year, has recorded the lowest levels of vitamin D, especially among women. This global health issue, linked to malnutrition and inadequate sunlight exposure, threatens millions of people [1,2].

Vitamin D, a fat-soluble vitamin and considered a hormone precursor, plays a crucial role in bone metabolism. It controls calcium absorption, mediates bone mineralization with parathyroid hormone, maintains the internal stability of calcium and phosphorus, and contributes to various physiological and metabolic functions [3,4]. Vitamin D exists naturally in two biological forms: vitamin D2 ('ergocalciferol') in plant sterol and vitamin D3 ('cholecalciferol') in fish oil, produced after skin exposure to short ultraviolet light (UVB). UVB converts pro-vitamin D3 in the skin to vitamin D3, which is then transformed in the liver to 25-hydroxyvitamin D3 (25(OH) D3) and further converted in the kidney into the active form, 1,25 di-hydroxy vitamin D3. The final form can bind to nuclear receptors in target tissues, regulating target genes [5].

Vitamin D receptors are present in various body tissues, and studies have indicated that vitamin D deficiency is associated with autoimmune, neoplastic, and metabolic diseases [6,7,8]. Insufficient nutritional resources and the

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chronic use of certain medications that stimulate vitamin D metabolism are common causes of vitamin D deficiency.

Recently, several studies have revealed a significant association between vitamin D deficiency and the high risk of infection, hospitalization, and increased mortality rate of COVID-19 [9,10,11]. This suggests a key role for vitamin D supplementation in the treatment and/or prevention of COVID-19 patients.

Based on the above and due to the lack of information about vitamin D status in people residing in Homs City, this study was conducted. The aim of the study was to investigate the serological levels of 25(OH) D3 in a group of patients' companions who consulted the National Hospital of Homs.

The present work was approved by the Ethics Committee of Al Wataniya Private University in Syria (No. HERC4), with the date of issue being 15 May 2022.

2. MATERIALS AND METHOD:

A cross-sectional study was conducted in Homs, located in the middle region of Syria at latitude 34.7324° north, between June and October 2022. Patients' companions, ostensibly healthy individuals, were recruited at the National Hospital of Homs. Using a questionnaire distributed to those interested in participating, 690 subjects between the ages of 20 and 68 were included in this research (Figure 1). Exclusion criteria encompassed patients with chronic diseases such as diabetes, hepatitis, or chronic renal disease, and those taking medications that affect vitamin D metabolism or absorption, such as anticonvulsants, corticoids, oral contraceptives, or vitamin D supplements, including an extended-release form during the six months preceding data collection. Subjects with vitamin D intoxication, pregnant women, and individuals under 20 were not included in this study.

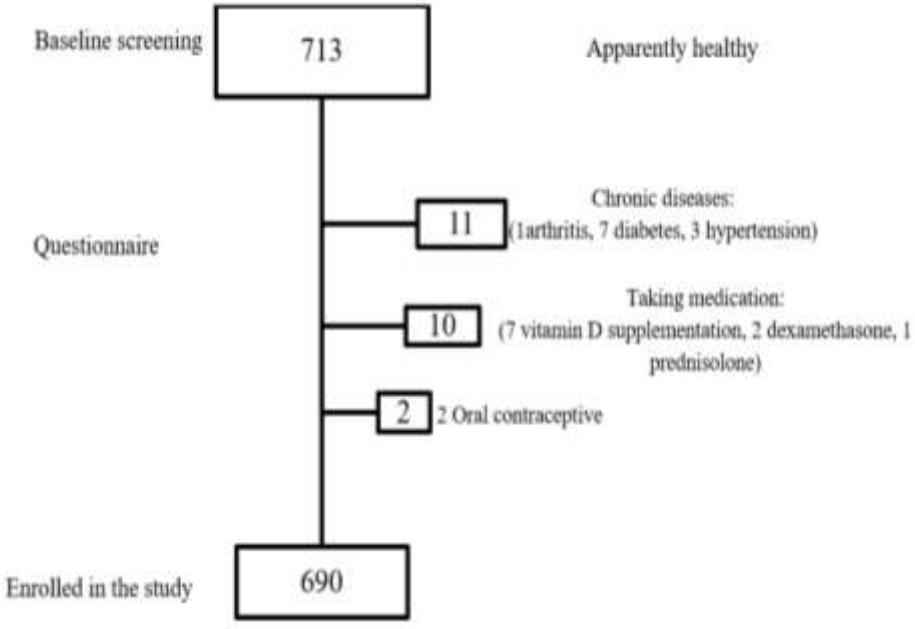

Figure 1. Subjects Recruitment

After obtaining personal written informed consent from all participants, 2-3 ml of venous blood samples were drawn using the Vacumed® blood collection system from FL MEDICAL, Italy. Subsequently, the samples were

centrifuged for 10 min at 1,700 ×g and stored at -20 °C until analysis. Serum 25(OH) D3 levels were analyzed using a chemiluminescent assay system (IMMULITE® 1000 immunoassay systems, Siemens, Germany), and 25(OH) D3 values were expressed as ng/ml.

Participants were divided into five groups according to age:

Group 1: Between 20 and 29 years old, Group 2: Between 30 and 39 years old, Group 3: Between 40 and 49 years old, Group 4: Between 50 and 59 years old, and Group 5: ≥ 60 years old. Additionally, women were classified into two groups: veiled (wearing a scarf on the head and covering the whole body) and non-veiled.

Vitamin D deficiency was classified as follows [12,13]:

Vitamin D insufficiency: serum levels of 25(OH) D3 ≤ 30 ng/ml

Vitamin D deficiency: serum levels of 25(OH) D3 ≤ 20 ng/ml

Severe vitamin D deficiency: serum levels of 25(OH) D3 ≤ 10 ng/ml

These levels were divided into four groups:

Group I: 30-100 ng/ml (sufficient)

Group II: 20-30 ng/ml (vitamin D insufficiency)

Group III: 10-20 ng/ml (vitamin D deficiency)

Group IV: Less than 10 ng/ml (severe vitamin D deficiency)

The prevalence of subjects in each gender group was determined.

2.1. Statistical Analysis

GraphPad Prism 5.0 was used for statistical analysis [14]. The data were presented as mean values ± standard deviation (SD). Student's t-test (for independent samples), Chi-square, and Mann-Whitney U test were employed to compare clinical and demographic parameters between the two groups, while the Kruskal-Wallis test was used for comparisons involving more than two groups. A p-value less than 0.05 was considered significant, based on a two-tailed test.

3. RESULTS

The study included 690 individuals aged between 20 and 68 years, comprising 210 males (30.4%) and 480 females (69.6%). The average age for males was 38.2±12 years, for females it was 36.5±15.5 years, and 75.5% of participants were under 50 years old.

3.1. Distribution of participants from both genders based on 25(OH) D3 levels:

Figure 2 revealed that 30.5% of participants from both genders exhibited the highest prevalence of vitamin D deficiency based on 25(OH) D3 levels.

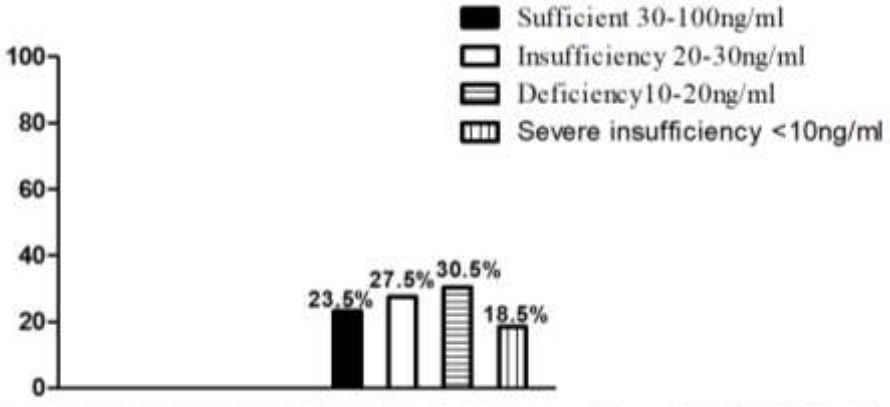

Figure 2: Distribution of participants from both sex according to 25 (OH)-D3 levels

3.2. Distribution of 25(OH)D3 levels according to age-group:

The lowest average level of vitamin D (11.79±8.79 ng/ml) was observed in the 20-29 years age group, while the highest average level was noted in the 40-49 years age group. The maximum prevalence (66.6%) of vitamin D deficiency was observed in the 50-59 years age group, whereas the lowest prevalence was seen in the 40-49 years age group (Figure 3). No significant differences in 25(OH) D3 levels among age groups were identified.

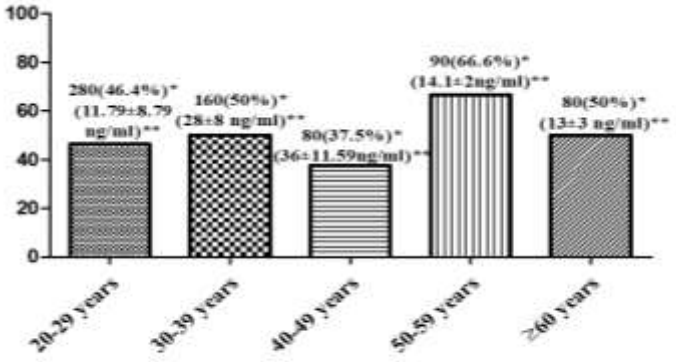

Figure 3. Distribution of vitamin D deficiency in each age group
***Number of participants(percentage of subjects with vitamin D deficiency)**
**** (average level of vitamin D ±standard deviation)**

3.3. Distribution of 25(OH)D3 levels according to gender:

The results demonstrated a significant statistical difference between females and males in terms of serum levels of 25(OH)D3, with values of 11.345±2.3 ng/ml for females and 39.65±11.28 ng/ml for males, respectively ($p < 0.0001$, Figure 4).

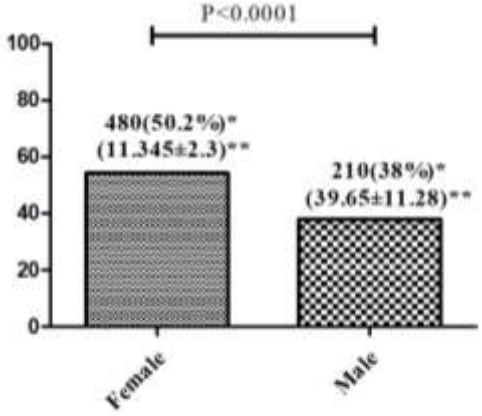

Figure 4. Distibution of vitamin D deficiency in each gender
***Number of participants(percentage of subjects with vitamin D deficiency)**
**** (average level of vitamin D ±standard deviation)**

3.4. Distribution of gender according to 25(OH)D3 levels:

Figure five revealed insufficient vitamin D levels in 18.8% of females and 8.7% of males. The prevalence of females suffering from vitamin D deficiency was approximately 19%, compared to 11.5% of males (the average level for both genders was 14.67±2.68 ng/ml). A significant severe vitamin D deficiency was reported in approximately 18.5% of females (mean level was 6.86±1.89 ng/ml), which was not detected in males who participated in this study.

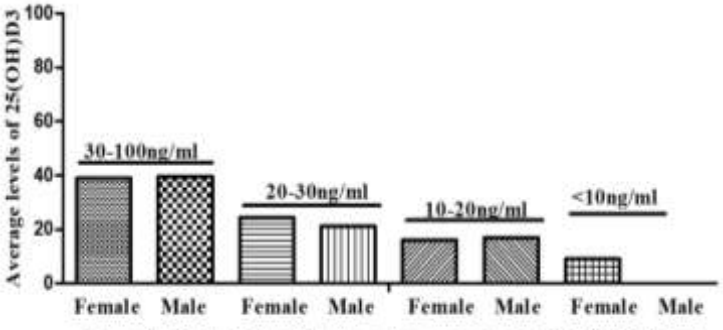

Figure 5. Distribution of both genders according to 25 (OH) D3 levels

3.5. Serum levels of vitamin D in veiled compared to non-veiled women:

In this study, 65% of females wore the hijab and exhibited serum levels of vitamin D lower than non-veiled females, with values of 11.3±2.5 ng/ml versus 25.5±3.2 ng/ml, respectively $p<0.0001$ (figure 6).

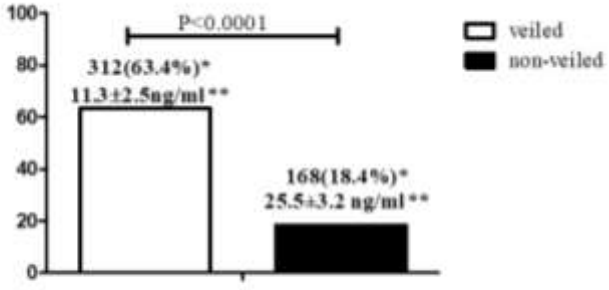

Figure 6: Distribution of vitamin D deficiency in veiled vs non-veiled women
***Number of participants(Percentage of subjects with vitamin D deficiency)**
**** (average level of vitamin D ±standard deviation)**

The female gender and clothing style were identified as independent risk factors for vitamin D deficiency, with p-values of 0.004 and <0.0001, respectively.

4. DISCUSSION

The primary finding of this research is the high prevalence of vitamin D deficiency identified in the study group, despite the predominantly sunny weather in Homs city throughout the year. The results indicated that 76.5%

of participants had an average vitamin D level of 22.4±6.4 ng/ml, signifying vitamin D inadequacy, with 30.5% exhibiting vitamin D deficiency (mean level 14.67±2.68 ng/ml). Severe vitamin D deficiency was observed in 18.5% of females in the study samples. Additionally, levels of 25(OH) D3 in females were significantly lower than those in males (11.345±2.3 ng/ml versus 39.65±11.28 ng/ml, respectively).

The findings of this study highlighted the lowest levels of vitamin D in the young population aged 20-29 years, with 46.4% of subjects having the lowest mean vitamin D level (11.79±8.79 ng/ml). Furthermore, vitamin D deficiency was observed in 54% of women and 50% of men under 35 years old. Additionally, 30.7% of females at reproductive age had levels ≤ 5 ng/ml. These low vitamin D levels could pose a risk of low bone density, fractures, and other complications associated with vitamin D deficiency.

This could be explained by common lifestyle patterns among the population. Nowadays, there is a notable inclination to avoid main meals containing ingredients that provide the body with vitamin D3, such as milk and eggs, or stimulate its absorption, such as tuna. This was corroborated by a study that identified a negative association between insufficient daily calcium and calorie intake with the concentration of vitamin D in older adults [15]. Additionally, there is a significant reliance on fast-food restaurants that are widely distributed in Syrian cities, including Homs, and offer reasonable prices. In fact, besides its negative impact on physical health, this food is rich in calories but poor in essential body nutrients and minerals, constituting a risk factor for vitamin D deficiency [16]. However, these aspects were not evaluated in this research.

Another crucial factor related to vitamin D is sun exposure, which significantly contributes to the endogenous production of the vitamin, thus fulfilling the daily requirements of vitamin D [17]. The impact of sunlight was evident in the presented work, as the levels of 25(OH)D3 in veiled women were lower than in non-veiled women, with values of 11.3±2.5 ng/ml versus 25.5±3.2 ng/ml, respectively. Moreover, 63.4% of women who wore the hijab suffered from deficiency. However, even non-veiled women exhibited vitamin D inadequacy, and 18.4% of them had vitamin D deficiency.

Apart from inadequate exposure to sunlight, dark skin, which is common in Mediterranean countries, and the use of sunscreen have also been proposed as reasons for low levels of vitamin D endogenously synthesized by the skin.

The results have also revealed the highest prevalence (66.6%) of vitamin D deficiency in the 50-59 years age group. This emphasizes the importance of vitamin D supplementation at this stage of life.

The obtained results were consistent with research conducted on a group of Syrians aged 18-62 from Damascus City. The outcomes showed that the majority of participants (61%) had vitamin D levels less than 10 ng/ml, 99.2% were below 30 ng/ml, and vitamin D deficiency was more prevalent in females than in males [18].

Comparing the results of this research with other studies carried out in neighboring countries, some findings are presented.

In Lebanon, several studies investigated the status of vitamin D levels in the Lebanese population at different ages and from both genders. A study on a group of samples aged between 19 and 60 years found an elevated percentage (83.5%) of vitamin D inadequacy and 63% of vitamin D deficiency in the studied population for both genders. Additionally, females between 19-39 years represented the highest prevalence (71.2%) of vitamin D deficiency [19]. Another research included a random sample of Lebanese adults, both females and males, with a mean age of 45.3 ± 15 years residing in the Greater Beirut area, and found that 39.1% of participants were deficient, using a conservative cut-off of 12 ng/ml [20]. In agreement with our results, low levels of vitamin D were highly represented in the Lebanese population at different ages.

In Jordan, recent research revealed an elevated

prevalence (89.7%) of low vitamin D levels (<30 ng/ml) among Jordanian adults. The highest distribution of vitamin D deficiency (<20 ng/ml) was found in females, which was selected as an independent risk factor associated with low vitamin D levels [21].

In Iran, several meta-analyses and systematic reviews involving more than 26,000 individuals reported that vitamin D deficiency was present in more than half of the study population, with the majority being female. Moreover, vitamin D deficiency was highly prevalent among the young and middle-aged (20-50 years), and the distribution of deficiency was significantly different between different geographical areas [22,23].

Concerning the Arabian Gulf region, a cross-sectional analysis including 102,342 participants attending primary healthcare centers in Qatar investigated vitamin D status in adults aged 18 - 65 years old. The study revealed that 14.1% suffered from severe vitamin D deficiency, 71.4% presented vitamin D deficiency, and 92.7% had vitamin D insufficiency. The higher prevalence rate of severe vitamin D deficiency (28.4%) was observed in young females between 19-28 years old [24]. In the United Arab Emirates (UAE), a large study conducted in Abu Dhabi found a high prevalence rate (72%) of participants being deficient and (10%) insufficient in vitamin D, with no difference between genders [25]. A new, interesting research aimed to evaluate the distribution of vitamin D deficiency and related risk factors among female migrants from Arab, South Asian, and Philippines countries inhabiting the UAE. Vitamin D deficiency was significantly prevalent in the study population, particularly in Arabs (87%) and South Asians (83%). Some associated risk factors identified were low physical exercise and being obese (BMI $\geq$ 30) [26].

In Kuwait, a descriptive study on Kuwaiti adults assessed the prevalence of vitamin D deficiency and its associated socio-demographic and daily lifestyle risk factors by measuring serum levels of 25-hydroxyvitamin D (25(OH) D3). The outcomes showed that vitamin D deficiency was highly distributed among adults, with some risk factors involving the age of 23-39 years, being single, consuming fast food, clothing style, and an indoor working environment [16]. A cross-sectional analysis studied the related risk factor of vitamin D deficiency in the Kuwaiti population aged over 65. Findings revealed that 63% of participants had vitamin D deficiency, and those who had not received vitamin D supplementation presented the highest prevalence [27].

In Saudi Arabia, one of the largest cross-sectional studies included participants of all ages and followed their vitamin D levels from 2008 to 2017. The results provided hope, as some improvement in the prevalence of vitamin D deficiency across all ages and both genders had been found. However, low levels of 25(OH)D3 remain a considerable public health problem in Saudi Arabia. Moreover, young teenagers under 18 years old presented a higher prevalence of vitamin D deficiency than the elderly [28].

Regarding the Arab countries of North Africa, the situation is not better. A study in Morocco investigated the relationship between sun exposure and vitamin D status among 331 Moroccan adults, finding that hypovitaminosis D was very prevalent, representing 94% of the study population, especially in females. Clothing code is attributed to vitamin D deficiency, as 76.4% of subjects exposed only their faces [29].

In Tunisia, a study involving 209 healthy participants found that 92.3% had 25(OH)D3 serum levels less than 30 ng/ml, and 47.6% had levels <10 ng/ml. The distribution of deficiency was statistically higher in females than in males. The primary associated risk factors were veiling, inhabiting rural areas, and regular sunscreen application [30].

Hence, the results of studies carried out in neighboring countries are similar, and vitamin D deficiency is highly prevalent in the Middle-East region. According to several studies, the required serum levels of 25(OH)D3 must be at least 30 ng/ml to maintain a healthy body and normal bone

density, preventing fractures, muscle weakness, colon cancer, and dental health [31].

The strength of this study lies in the fact that the samples were collected during the same period when exposure to sunlight was substantial. Additionally, the participants in this research were apparently healthy; they did not have any chronic diseases that could prevent them from going out and being exposed to sunlight, nor had they received any medication that might affect vitamin D levels. They lived in different regions of Homs and were from both genders. Moreover, the 25(OH)D3 level was measured by the chemiluminescent method using the Immulite®/Immulite 1000 Systems, which is a gold standard laboratory method for measuring vitamin D.

5. CONCLUSION

This study draws attention to the significant prevalence of vitamin D inadequacy and deficiency among participants. Vitamin D deficiency was highly prevalent in the study group, despite the predominantly sunny weather in Homs city throughout the year. Moreover, females exhibited lower levels than males, and veiled women had lower serum concentrations than non-veiled individuals. Female gender and clothing patterns were identified as independent predictors of vitamin D deficiency. It is recommended to conduct a larger-scale study covering multiple Syrian governorates to assess the prevalence of vitamin D deficiency in Syria and examine the relationship between serum levels of vitamin D and socio-demographic and daily lifestyle factors. Measures are proposed, including food fortification policies for dairy products commonly consumed among Syrian citizens with vitamin D, and increasing community awareness of the crucial role of vitamin D supplementation after a certain age.

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Conflicts of interest

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Remelli F, Vitali A, Zurlo A, et al. Vitamin D Deficiency and Sarcopenia in Older Persons. *Nutrients*. 2019; 21;11(12):2861.
2. Merker M, Amsler A, Pereira R, et al. Vitamin D deficiency is highly prevalent in malnourished inpatients and associated with higher mortality. *Medicine (Baltimore)*. 2019; 98(48): e18113.
3. Portales-Castillo I , Simic P. PTH, FGF-23, Klotho and Vitamin D as regulators of calcium and phosphorus: Genetics, epigenetics and beyond. *Front Endocrinol (Lausanne)*. 2022; 29;13:992666.
4. Beckett E. More Than Bone Health: The Many Roles for Vitamin D. *Nutrients*. 2020; 10;12(8):2388.
5. Sun J, Zhang Y-G. Vitamin D Receptor Influences Intestinal Barriers in Health and Disease. *Cells*. 2022;11(7):1129.
6. Holic MF. Sunlight, UV Radiation, Vitamin D, and Skin Cancer: How Much Sunlight Do We Need?. *Adv Exp Med Biol*. 2020; 1268:19-36.
7. Dupuis ML, Pngo MT, Pierdominici M, et al. The role of vitamin D in autoimmune diseases: could sex make the difference?. *Biol Sex Differ*. 2021;12, 12.
8. Al-Nema, M, & Gaurav, A. Schizophrenia: The Ambiguous Mechanism behind the Disorder. *Jordan Journal of Pharmaceutical Sciences*. 2022;*15*(2), 239–257. https://doi.org/10.35516/jjps.v15i2.323
9. Sooriyaarachc P, Jeyakumar DT, King N, et al. Impact of vitamin D deficiency on COVID-19. *Clin Nutr ESPEN*. 2021;44:372-378.
10. Kaya MO, Pamukcu E, Yakar B. The role of vitamin D deficiency on COVID-19: a systematic review and meta-analysis of observational studies. *Epidemiol Health*. 2021;43:e2021074.

11. Jude EB, Ling SF, Allcock R, et al. Vitamin D Deficiency Is Associated With Higher Hospitalization Risk From COVID-19: A Retrospective Case-Control Study. *J Clin Endocrinol Metab*. 2021;17: dgab439.
12. Sizar O, Khare S, Goyal A. Vitamin D Deficiency. StatPearls. 2022. https://www.ncbi.nlm.nih.gov/books/NBK532266. Accessed 22.12.2022
13. Yousif S, Muhsin JM, Serum Vitamin-D Levels in Bronchial Asthmatic Patients in Baghdad City. *Indian J Public Health Res Dev*. 2019;10(9):2139 – 2144.
14. Hasen, E. The Potential Effects of the Essential Oil of Coriander Seeds on Bacterial Biofilm and Immune Cells. *Jordan Journal of Pharmaceutical Sciences*. 2023;*16*(2), 473. https://doi.org/10.35516/jjps.v16i2.1530
15. Kim SH, Oh JE, Song DW, et al. The factors associated with Vitamin D deficiency in community dwelling elderly in Korea. *Nutr. Res. Pract*. 2018;12:387–395.
16. Sayed-Hassan R, Abazid N, Alourfi Z. Relationship between 25-hydroxyvitamin D concentrations, serum calcium, and parathyroid hormone in apparently healthy Syrian people. *Arch Osteoporos*. 2014;9:176.
17. Meshari Alsejari M. Prevalence and Risk Factors of Vitamin D Deficiency among a sample of Kuwaiti population: A sociocultural Study. *Collegium antropologicum*. 2018;42 (2), 101-109, Retrieved from https://hrcak.srce.hr/205645
18. Choi JH, Lee B, Lee JY, et al. Relationship between Sleep Duration, Sun Exposure, and Serum 25-Hydroxyvitamin D Status: A Cross-sectional Study. *Sci Rep*. 2020;10, 4168.
19. Salman S, Khouzami M, Harb M, et al. Prevalence and Predictors of Vitamin D Inadequacy: A Sample of 2,547 Patients in a Mediterranean Country. *Cureus*. 2021; 13(5): e14881.
20. Arabi A, Chamoun N, Nasrallah MP, et al. Vitamin D Deficiency in Lebanese Adults: Prevalence and Predictors from a Cross-Sectional Community-Based Study. *Int J Endocrinol*. 2021;20; 2021:3170129.
21. El-Khateeb M, Khader Y, Batieha A, et al. Vitamin D deficiency and associated factors in Jordan. *SAGE journals*. 2019;13;7:2050312119876151.
22. Tabrizi R, Moosazadeh M, Akbari M, et al. High Prevalence of Vitamin D Deficiency among Iranian Population: A Systematic Review and Meta-Analysis. *Iran J Med Sci*. 2018;43(2):125-139.
23. Vatandost S, Jahani M, Afshari A, Amiri MR, H, et al. Prevalence of vitamin D deficiency in Iran: A systematic review and meta-analysis. Nutrition and Health. 2018;24(4):269-278.
24. Zainel AAL, Qotba H, Al Nuaimi, et al. Vitamin D status among adults (18–65 years old) attending primary healthcare centres in Qatar: a cross-sectional analysis of the Electronic Medical Records for the year 2017. *BMJ Open*. 2019;9:e029334.
25. Al Zarooni AAR, Al Marzouqi FI, Al Darmaki SH, et al. Prevalence of vitamin D deficiency and associated comorbidities among Abu Dhabi Emirates population. *BMC Res Notes*. 2019; 14;12(1):503.
26. Anouti FA, Ahmed LA, Riaz A, et al. Vitamin D Deficiency and Its Associated Factors among Female Migrants in the United Arab Emirates. *Nutrients*. 2022;3;14(5):1074.
27. ALbuloshi T, Kamel AM, Spencer JPE. Factors Associated with Low Vitamin D Status among Older Adults in Kuwait. *Nutrients*. 2022;14, 3342.
28. Al-Daghri NM, Hussain SD, Ansari MGA, et al. Decreasing prevalence of vitamin D deficiency in the central region of Saudi Arabia (2008-2017). *J Steroid Biochem Mol Biol*. 2021;212:105920.
29. Dadda S, Azekour K, Sebbari F, et al., Sun exposure, dressing habits, and vitamin D status in Morocco, *E3SWebConf*. 2021;319,01097.
30. Bahlous A, Krir A, Mrad M, el al. Vitamin D in healthy Tunisian population: Preliminary results. *J Med Biochem*. 2022;41(2):168-175.
31. Bouillon R, Van Schoor NM, Gielen E, Boonen S, et al. Optimal vitamin D status: a critical analysis on the basis of evidence-based medicine. *J Clin Endocrinol Metab*. 2013;98(8).

توزع مستويات فيتامين د لدى مجموعة من المجتمع السوري

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ملخص

هدف البحث: دراسة المستويات المصلية لـ 25–هيدروكسي فيتامين د3 لدى عينة من السوريين الأصحاء في مدينة حمص. وذلك عن طريق دراسة مقطعية لـ 690 مشاركًا – أصحاء ظاهرياً – حضروا إلى مستشفى حمص الوطني. تم قياس المستويات المصلية لـ 25–هيدروكسي فيتامين د3 باستخدام المقايسة المناعية الكيميائية. بينت النتائج أنّ معدل الانتشار العام لنقص فيتامين (د) (القصور والنقص والنقص الشديد) في العينة المدروسة بلغ 76.5٪. علاوة على ذلك، فإن 49٪ من العينات كانت تعاني من نقص فيتامين (د)، 18.5٪ منها كانت تعاني من نقص حاد. بالإضافة إلى أن مستويات 25–هيدروكسي فيتامين د3 للإناث أقل من الذكور (11.3 ± 2.3 نانوغرام / مل مقابل 39.6 ± 11.28 نانوغرام / مل، على التوالي، .($p<0.0001$) وقد كانت المستويات المصلية لدى النساء المحجبات أقل من غير المحجبات، 11.3 ± 2.5 نانوغرام / مل مقابل 25.5 ± 3.2 نانوغرام / مل، على التوالي، .($p<0.0001$) كما تبين أن جنس الأنثى ونمط اللباس من عوامل الخطر المستقلة لنقص فيتامين (د). إنّ نقص فيتامين (د) كان شائعًا جدًا في العينة المدروسة، على الرغم من الطقس المشمس في مدينة حمص معظم العام إلا أنّه يجب متابعة البحث ليشمل مجموعة أكبرمن المحافظات السورية لدراسة عوامل الخطر المتعلقة بنمط الحياة والسلوكيات الاجتماعية والثقافية المرتبطة بنقص فيتامين د.

الكلمات الدالة: 25–هيدروكسي فيتامين د 3، نقص فيتامين د، عوز فيتامين د، أشعة الشمس، سوريا.

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