

## ORIGINAL ARTICLE

## Usage Of Vitamin D Supplements During Covid19 Pandemic In Baghdad City, Iraq

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### ABSTRACT

**Background:** The aim of the current study is to determine vitamin D supplement usage among adults living in Baghdad city, Iraq during COVID19 pandemic.

**Methods:** A cross-sectional study was conducted among 480 adults living in Baghdad city, Iraq through convince sampling. An online administered questionnaire was used to collect the data from respondents.

**Results:** Around two-thirds of respondents used Vitamin D supplements (65%). There was a significant association between taking Vitamin D3 supplements and educational level, getting COVID19 infection with P value of (0.01, <0.001, <0.001) respectively.

**Conclusion:** As a conclusion, two-thirds of our study respondents took Vitamin D supplements during COVID19 pandemic. More education is needed for population about the use of vitamin D in boosting immunity and preventing infections.

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## Introduction

The world is presently encountering its third significant scourge of Covid (CoV) contaminations. Another CoV contamination pestilence started in Wuhan, Hubei, China, in late 2019, initially called 2019-nCoV<sup>1</sup> and renamed Coronavirus by the World Wellbeing Association on February 11, 2020. Past CoV pandemics incorporate extreme intense respiratory disorder (SARS)- CoV, what began in China in 2002<sup>2</sup>, and the progressing Center East respiratory condition (MERS)- CoV in the Center East, first detailed in 2012.<sup>3</sup>

A few audits consider the manners by which Vitamin D has numerous systems by which it diminishes the danger of microbial disease and demise. A study with respect to the job of vitamin D in decreasing the danger of the regular virus assembled those instruments into three classes: actual boundary, cell common invulnerability, and versatile resistance<sup>4</sup>. Vitamin D supplementation additionally upgrades the outflow of qualities identified with antioxidation (glutathione reductase and glutamate–cysteine ligase modifier subunit).<sup>5</sup>

A recent study relates to the role of vitamin D in reducing the risk of developing a cold by grouping these mechanisms into three categories: physical barrier, adaptive immunity, and cellular natural immunity.<sup>4</sup> Adherent junctions, narrow junctions, gap junctions. (For example, by E-cadherin).<sup>6</sup> There is many research looking on how to damage the integrity of the connections, leading to an increase in infection with the virus and other microorganisms.<sup>7</sup>

Aim of the current study is to determine vitamin D3 supplement usage among adults in Baghdad city.

## Methods

A cross-sectional study design was conducted among 480 adults living in Baghdad city, Iraq. The study period was from February till August 2021. The questionnaire consisted of 17 questions, and it consisted of three parts, where the first part include social and demographic questions (age, gender, marital status, occupation and educational level), and the second part include questions related to Covid 19 infection (have you had Covid 19 infection before, in which A month I contracted Covid, how many days did the infection last, did you use medication, did you take preventive measures), and the third part included questions

about vitamin D (did you take a blood test to find out the level of vitamin D, 19- Have you ever taken nutritional supplements or multivitamins that Contains Vitamin D During the COVID-19 Pandemic How Long Have You Been Taking Vitamin D Motivation to Start Taking Vitamin D.

The inclusion criteria were adults living in Baghdad city Iraq who are willing to participate in the study while exclusion criteria were people who do not want to participate, People with mental problems. Sampling method is convenience sampling (non-probability).

Participation in the study is on voluntary bases. Consent was taken from all the respondents. The details will be used for research purpose only. Ethics approval was taken from college of Nursing, Al-Bayan University

## Statistical Analysis

Data collected was analysed using Statistical Package of Social Science (SPSS) version 24.0 Mean and SD was used for numerical variables while frequency and percentage for categorical variables, chi square test was used to test association between variables.

## Results

A total of 480 adults between the ages of 18 and 56 participated in the study. Table 1 describes demographic data. The percentage of female participants in the study was greater than males, (59.8%). As for the social situation, the percentage of unmarried people was (64.2%), while the percentage of married people was (32.3%). As for the job, the percentage of students was greater than the employees, which amounted to (42.9%), while the percentage of employees in the government sector was (37.9%).

**Table 1: Socio-demographic characteristics of the respondents**

	N	%
<b>Gender</b>		
<b>Male</b>	287	59.8
<b>Female</b>	193	40.2
<b>Marital Status</b>		
<b>Married</b>	155	32.3
<b>Single</b>	308	64.2
<b>Divorced</b>	17	3.5

<b>Occupation</b>				
<b>Housewife</b>	18		3.8	
<b>Student</b>	206		42.9	
<b>Government Worker</b>	182		37.9	
<b>Private Sector Worker</b>	16		3.3	
<b>Unemployed</b>	58		12.1	
	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>SD</b>
<b>Age</b>	18	57	26.55	6.334
<b>How long infection last</b>	1	60	13.79	8.092

Table 2 shows descriptive statistics, where it is mentioned that the minimum age of the participant in the study is (18) years. The oldest participants in the study are 57 years old, with a mean age of (26.55) years. The table also shows that the percentage of university students was more than high school students, where the percentage of university students participating was (50.8%,) while the percentage of high school students was (31.9).

**Table 2: COVID 19 infection & management history**

<b>Did you get covid19</b>		
	<b>N</b>	<b>%</b>
<b>NO</b>	269	56.0
<b>YES</b>	211	44.0
<b>Which month got infected in 2020</b>		
<b>March</b>	25	5.2
<b>April</b>	19	4.0
<b>May</b>	18	3.8
<b>June</b>	19	4.0
<b>July</b>	31	6.5
<b>August</b>	18	3.8
<b>September</b>	24	5.0
<b>October</b>	22	4.6
<b>November</b>	19	4.0
<b>December</b>	16	3.3
<b>Admission to hospital</b>		
<b>no</b>	188	39.2
<b>yes</b>	23	4.8
<b>Use medication</b>		
<b>no</b>	28	5.8
<b>yes</b>	183	38.1
<b>Use anticoagulant</b>		
<b>no</b>	169	35.2
<b>yes</b>	42	8.8

<b>Use antibiotics</b>		
<b>no</b>	54	11.3
<b>yes</b>	157	32.7
<b>Family member infected</b>		
<b>no</b>	276	57.5
<b>yes</b>	204	42.5
<b>Family member died</b>		
<b>no</b>	461	96.0
<b>yes</b>	19	4.0

Table 3 shows the descriptive statistics of COVID 19. The percentage of people who were not infected with Covid19 was higher than the infected people, as the percentage of healthy people who were not infected was (56.0%), while the percentage of infected people was (44.0%). As for the period of infection, the rate of infection in the month (7) was the highest, reaching (6.5%). As for the people who were admitted to the hospital and who were not admitted, the percentage of people who did not go to the hospital was more than those who were admitted to the hospital, where their percentage was (39.2%). As for people who took medical treatment, their percentage was (38.1%), which is more than those who did not take medical treatment (5.8%). As for people who took anticoagulant, their percentage reached (5.8%), which is much lower than those who did not take anticoagulant, their percentage reached (35.2%).

The proportion of people who took antibiotics was higher (32.7%) than those in the study who did not take, while the proportion of people who did not take antibiotics (11.3%).

The percentage of answers to the question: Was a family member infected, the answers were the most? No family member was injured, where it was (57.5%). As for the answers about the death of a family member, the most answers were (96.0%) that no family member died.

**Table 4: Prevention control after infection & Vitamin D**

<b>Safety after recovery</b>		
	<b>N</b>	<b>%</b>
<b>NO</b>	55	11.5
<b>YES</b>	425	88.5
<b>Wearing the mask</b>		
<b>NO</b>	70	14.6
<b>YES</b>	410	85.4
<b>Hand washing</b>		
<b>NO</b>	46	9.6
<b>YES</b>	434	90.4

<b>VITAMIN D Blood test</b>			<b>2000 IU</b>			29	6.0
<b>NO</b>	324	67.5	<b>5000 IU</b>			90	18.8
<b>YES</b>	156	32.5	<b>Vit D usage motivation</b>				
<b>Vitamin D Supplements before</b>			<b>Internet</b>		89	18.5	
<b>NO</b>	168	35.0	<b>Doctor Advice</b>		149	31.0	
<b>YES</b>	312	65.0	<b>Friend</b>		54	11.3	
<b>Vit. D dosage</b>			<b>Family Member Takes It</b>		20	4.2	
<b>Do not know</b>							
<b>1000 IU</b>	57	11.9					

**Table 5: Association between gender, Covid-19 factors and Vitamin D Supplements usage**

		Vitamin D Supplements usage		P value
		No	Yes	
		N (%)	N (%)	
<b>Gender</b>	Male	112 (39.0)	175 (61.0)	0.024
	Female	56 (29.0)	137 (71.0)	
<b>Did you get covid19</b>	No	122 (45.4)	147 (54.6)	<0.001*
	Yes	46 (21.8)	165 (78.2)	
<b>Family member infected</b>	No	117 (42.4)	159 (57.6)	<0.001*
	Yes	51 (25.0)	153 (75.0)	
<b>Family member died</b>	No	166 (36.0)	295 (64.0)	0.022
	Yes	2 (10.5)	17 (89.5)	

\*chi square test was performed, level of significant at  $p < 0.05$

Overall, these data refer to the use of prophylactics and vitamin D3 in the daily lives of college students. As for the use of prevention and wearing a mask, the acceptance rate was significant (85.4%). The rejection rate was very low (14.6%) As for the students who used vitamin D3 and were not infected with the Covid 19 virus, the percentage reached (65.0%).

## Discussion

The main findings of the current study are that two-thirds of the respondents took Vitamin D supplements during COVID19 pandemic in Baghdad city, Iraq. The results showed that the percentage of people who took vitamin D before infection with Covid 19 was (65.0%), where the percentage of males (61.0%) who take vitamin D more than females. These results are consistent with

a study by <sup>8</sup>(Annweiler et al., 2020). In the intervention group, 82.5% (n=47).

Our results were supported by previous studies that multivitamin supplements are quite prevalent (64.2%) in the community of urban areas of Bikaner. Our findings are quite comparable with those of a National Health and Nutrition Examination Survey.<sup>9,10</sup> Likewise, a study conducted by Reinert et al. reported that about 40% of the population were consumers of vitamin or mineral supplements.<sup>11</sup> The results also showed the respondents' high knowledge of preventive measures, namely wearing a mask and using sterilizers, in addition to the relationship of vitamin D3 with social and occupational status, the results showed that the percentage of unmarried people was higher than non-married people (62.7%).

As for the job relationship, the percentage of the housewife in taking vitamin D3 was more (83.3%). As for education and its relationship to vitamin D3, as we previously explained that the percentage of knowledge most is among university students (70.5%). The results also showed the number of COVID-19 cases where the percentage of injuries for those who took vitamin D3 (54.6%) was lower compared to people who did not take vitamin D3, and this confirms the role of vitamin D3 in preventing Covid 19 disease. (P value < 0.001). As for the familial deaths who took vitamin D3 as well, it was low compared to the people who did not take vitamin D3 before infection.

Similar to previous studies, in this study also multiple reasons were mentioned by the participants for using vitamin supplements.<sup>12</sup> In our current study, most of the respondents received knowledge about the multivitamin supplements from their physician (31.0.%). This finding is in accordance with the research by (Guraya, 2018)<sup>13</sup> who concluded that knowledge about the multivitamin supplements from their physician with (54.8%).

### Conclusion

As a conclusion, Two-thirds of our study respondents took Vitamin D supplements during COVID19 pandemic. People at high risk of developing vitamin D deficiency during this pandemic should consider taking vitamin D supplements. More education and promotion are needed to educate people on the importance of Vitamin D in enhancing the immunity and prevent infection. We recommend that future studies to be performed in other Provinces of Iraq and not only in Baghdad and also to focus on COVI19 patients and whether talking Vitamin D had benefit them.

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### Conflicts of Interest

There are no conflicts of interest declared by the author.

### References

- Zhu, N. *et al*. A Novel Coronavirus from Patients with Pneumonia in China, 2019. *N. Engl. J. Med.* **382**, 727–733 (2020).
- Zhong. Epidemiology and cause of severe acute respiratory syndrome (SARS) in Guangdong, People's Republic of China, in February, 2003 Elsevier Connect , the company ' s public news and information. *Lancet* **362**, 1353–1358 (2003).
- Abdullah Assiri, M.D, Allison McGeer, M.D, Trish M. Perl, M.D, Connie S. Price, M.D *et al*. NIH Public Access. *Bone* **23**, 1–7 (2014).
- Rondanelli, M. *et al*. Self-Care for Common Colds: The Pivotal Role of Vitamin D, Vitamin C, Zinc, and Echinacea in Three Main Immune Interactive Clusters (Physical Barriers, Innate and Adaptive Immunity) Involved during an Episode of Common Colds - Practical Advice on Dosages and on the Time to Take These Nutrients/Botanicals in order to Prevent or Treat Common Colds. *Evidence-based Complement. Altern. Med.* **2018**, (2018).
- Lei, G., Zhang, C., Cheng, B. & Lee, C. crossm Supplemental Therapy for Pneumocystis. **61**, 1–13 (2017).
- Marcos, A. Editorial: A review of micronutrients and the immune system—Working in harmony to reduce the risk of infection. *Nutrients* **13**, (2021).
- Neale, R. E. *et al*. Environmental effects of stratospheric ozone depletion, UV radiation, and interactions with climate change: UNEP Environmental Effects Assessment Panel, Update 2020. *Photochem. Photobiol. Sci.* **20**, 1–67 (2021).
- Annweiler, G. *et al*. Vitamin D Supplementation Associated to Better Survival in Hospitalized Frail Elderly COVID-19 Patients: The GERIA-COVID Quasi-Experimental Study. *Nutrients* **12**, 3377 (2020).
- Bailey, R. L. *et al*. Best Practices for Dietary Supplement Assessment and Estimation of Total Usual Nutrient Intakes in Population-Level Research and Monitoring. *J. Nutr.* **149**, 181–197 (2019).
- Gahche, J. J. *et al*. Dietary Supplement Use among Infants and Toddlers Aged <24 Months in the United States, NHANES 2007-2014. *J. Nutr.* **149**, 314–322 (2019).
- Reinert, A., Rohrmann, S., Becker, N. & Linseisen, J. Lifestyle and diet in people using dietary supplements. *Eur. J. Nutr.* **46**, 165–173 (2007).
- Dickinson, A., MacKay, D. & Wong, A. Consumer attitudes about the role of multivitamins and other dietary supplements: report of a survey. *Nutr. J.* **14**, 66 (2015).
- Guraya, S. Y. & Almaramhy, H. H. Mapping the factors that influence the career specialty preferences by the undergraduate medical students. *Saudi J. Biol. Sci.* **25**, 1096–1101 (2018).