Assessment Telafer University Students Knowledge about Vitamin D Deficiency

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Abstract

As it is known that nutrition plays a crucial role in entire human body and determining general health. Scientific studies shows that most deaths in entire world caused by malnutrition. Vitamin D is one of the has a great impact on the human health because it is involved in bone and teeth building.

A descriptive cross-sectional study was performed in in Telafer City to measure the knowledge of Telafer University students about vitamin D deficiency, the sample of study was consisting of (200) students selected from Telafer University distributed as (100) students from the College of Nursing and (100) students from the College of Basic Education for the period from 1st February, 2023 to 1st May, 2023.

A special questionnaire tool was constructed by the researchers to collect data which consists of two portions: Part (I): Demographic Characteristics of the students and Part (II): Questionnaire Sheet includes information related to assessing students' knowledge of vitamin D deficiency.

The study showed that the High percentage 78.5% of the total sample are at age (< 25) and majority of the participants in this study lacked in knowledge about vitamin D.

The study recommends conducting additional studies for knowledge about vitamin D deficiency as well as developing educational program curriculum to include knowledge about vitamin D.

Keywords: Vitamin D, Fat soluble, Deficiency, Knowledge,

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Introduction

Vitamin D is belonged to fat-soluble vitamins that plays an important role in calcium homeostasis and bone metabolism and it is deficiency occurs when the body doesn't get enough vitamin D from diet or inadequate exposure to sunlight which cause loss of bone density, osteoporosis, and even broken bones. Vitamin D deficiency is a condition in which the its level is lower than 20 ng/mL or 50 nmol/L [1].

Vitamin D is one of the micronutrients, fat soluble that has a great impact on the health of the body because it is involved in building and forming bone and teeth in addition to many important functions in human body [2].

Vitamin D deficiency is a global public health issue it is expected that one billion people around the world have vitamin D deficiency, while 50% of the population has vitamin D insufficiency [3].

The highest prevalence of vitamin D deficiency is in the elderly, home residents, obese, and hospitalized patients [4,5].

According to literature, the vitamin D deficiency prevalence in Middle East has been reported to range from 25 to 95% [6].

In United States, about 60% of either hospitalized patients and home residents had vitamin D deficiency [7].

Vitamin D deficiency can be considered a significant health problem in Iraq, that is because decreased levels of exposure to sunlight due to climatic, and demographic factors (WHO, 2005)

Vitamin D is important for bone, teeth, and muscle function so, deficiencies can cause muscle weakness, teeth problems, and osteoporosis [8,9].

Some research suggests that vitamin D deficiency may be linked to depression and other mood disorders, hair loss [10].

Diagnosing vitamin D deficiency typically involves measuring the concentration of 25-hydroxyvitamin D in blood, calcium, phosphate, parathyroid hormone (PTH), and alkaline phosphatase (ALP) levels [11,12].

Methods

A descriptive cross-sectional study was performed in in Telafer City to measure the knowledge of Telafer University students about vitamin D deficiency. Official and ethical approvals were obtained from Telafer University / College of Nursing on January 14, 2023 and from Telafer University / College of Basic Education on January 26, 2023. The target population for this study were student from Telafer University, Iraq, Ninawa, Telafer, during the period from 1st February, 2023 to May 1, 2023. A sampling frame consisted of (200) students selected from Tal Afar University distributed as follows (100) students from the College of Nursing were randomly selected from all levels (100) students from the College of Basic Education were randomly selected from all educational levels. A Purposive convenience sampling method was selected for present study.

The data was collected from the people in Telafer Primary Care Centers by the questionnaire for the period form 1st February 2023 to 10th February 2023.Then data analyzed by using of Statistical Package for Social Science SPSS (version 25).

Results

Demographical Characteristics of the Study Participants (n=200)

Characteristics	Items	F	%
Age	< 25	157	78.5
	> 25	43	21.5
	Mean (SD)	22.82 (2.31)	
Gender	Male	97	48.5

	Female	103	51.5
Ethnic	Arabic	59	29.5
	Turkman	125	62.5
	Yezidi	14	7.0
	Kurdish	2	1.0
College	Nursing	100	50.0
	Basic Education	100	50.0
Stage	First	25	12.5
	Second	59	29.5
	Third	58	29.0
	Fourth	58	29.0
Type of Study	Morning	125	62.5
	Evening	75	37.5

F: Frequency; %: percentage

This table indicates that the mean age of participants is (22.82 ±2.31) years old. It's clear that the majority of participants (78.5%) are in the age group of (18-25) years old. Concerning other demographical characteristics, the table shows that the most of participants are female (51.5%), Turkman (62.5%), and continuing their university study in the morning shift (62.5%). These results agreed with Bouillon et al., (2019) that 58% percent of participants was female and 42% as male. The sample was almost homogeneous in terms of education and age with majority being 16–25 years old (88%) [13].

Vitamin D Deficiency Knowledge According to the Participants College

Domain	**College**	**Level of Knowledge**							
		Low		**Moderate**		**High**			
		F	**%**	**F**	**%**	**F**	**%**	χ^2	***P***
Causes	Nur	34	34.0	52	52.0	14	14.0	**19.501**	**.000**
	Edu	64	64.0	32	32.0	4	4.0		
Risky Group	Nur	10	10.0	46	46.0	44	44.0	2.269	.322
	Edu	14	14.0	36	36.0	50	50.0		
Symptom	Nur	19	19.0	52	52.0	29	29.0	**42.321**	**.000**
	Edu	64	64.0	26	26.0	10	10.0		
Source	Nur	6	6.0	36	36.0	58	58.0	1.696	.428
	Edu	11	11.0	36	36.0	53	53.0		
Complication	Nur	31	31.0	47	47.0	22	22.0	**35.601**	**.000**
	Edu	73	73.0	20	20.0	7	7.0		
Total	Nur	12	12.0	61	61.0	27	27.0	**50.371**	**.000**

	Edu	60	60.0	30	30.0	10	10.0

F: Frequency, %: percentage, Nur: Nursing College (n=100), Edu: Basic Education College(n=100), $\chi^{2:}$ Chi-square, *p: P-Value*

Level of knowledge cut-off points:

cut-off points	causes, risky groups, and symptom	Source	Complication	Total
1. low	(0-1)	(0-1)	(0)	(0-7)
2. moderate	(2-3)	(2-3)	(1)	(8-15)
3. high	(4-5)	(4-6)	(2-3)	(16-24)

This table shows the level of knowledge about Vitamin D Deficiency among Telafer university students. Regarding nursing college, the table indicates that the level of knowledge is low in the study domain of causes, risky group, symptom, source and complication among (34%, 10%, 19%, 6%,31%) of student respectively. Total knowledge is low among (12%) of nursing students.

Concerning Basic education students, the table reveals that the level of knowledge is low in the study Despite university students have access to the google and health information, the knowledge towards vitamin D was quite poor. This Problem in their knowledge could be due to conflicting information available about vitamin D and lack of clear localized messages about exposure to sunlight. Similar limitations to the knowledge toward vitamin D have been reported in studies across Bangladesh, Iran, Lebanon and also among immigrants from South Asian countries living across Europe. Similar to our study, most studies have found their participants were not able to identify sources of vitamin D in the food and sunlight as critical enabler in vitamin D production [14].

domain of causes, risky group, symptom, source and complication among (64%, 14%, 64%, 11%,73%) of student respectively. Total knowledge is low among (60%) of Basic education students.

Finally, the table indicates that there are high statistically significant differences in students' knowledge regarding Vitamin D deficiency between Nursing College and Basic Education college in each of causes, symptoms, complication and total knowledge level (p<0.000).

However, our results are in contrast to those reported in the UK where the participants did demonstrate good level of knowledge about vitamin D [15,16]. This perhaps is indicative of the increased public awareness and food fortification practices in the developed communities. Multi-prong strategies and mechanisms are required to appraise public knowledge and awareness toward vitamin D. People should receive information, in local languages, that reflects the actual state of knowledge regarding vitamin D and its association with health institutions, along clear information on vitamin D sources [17].

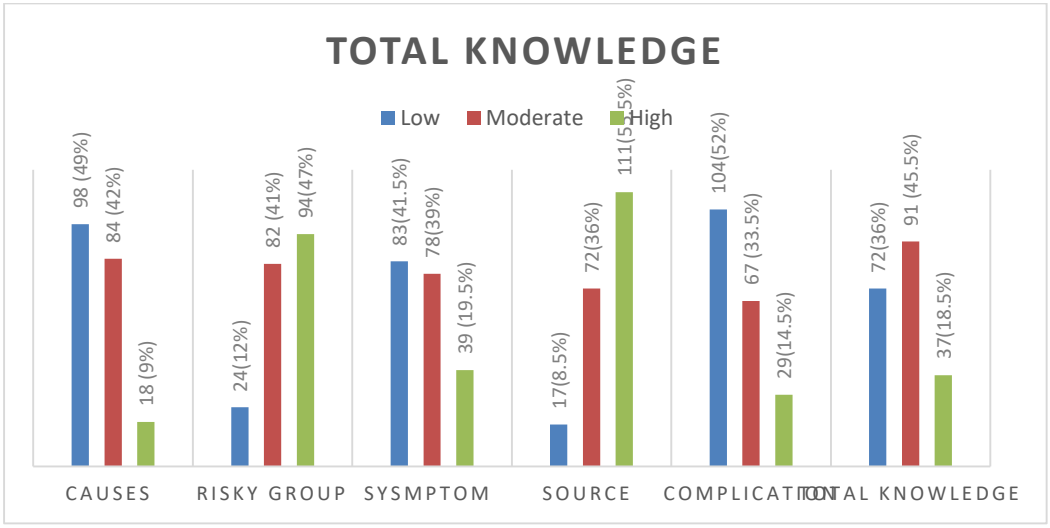

Figure 4.1 Vitamin D Deficiency Knowledge Among Study Participants (n=200)

This Figure illustrate that the level of knowledge is low in the study domain of causes, risky group, symptom, source and complication among (49%, 12%, 41.5%, 8.5%,52%) of student respectively. Total knowledge is low among (36%) of students.

Association Between Participants Sociodemographic, and Vitamin D Deficiency Knowledge (n= 200)

Characteristics	Items	Vitamin D Deficiency Knowledge						χ2	P
		Low		Moderate		High			
		F	%	F	%	F	%		
Age	< 25	18	75.0	101	81.5	38	73.1	1.720	.423
	> 25	6	25.0	23	18.5	14	26.9		
Gender	Male	9	37.5	67	54.0	21	40.4	4.053	.132
	Female	15	62.5	57	46.0	31	59.6		
Ethnic	Arabic	6	25.0	39	31.5	14	26.9	5.344	0.501
	Turkman	16	66.7	72	58.1	37	71.2		
	Yezidi	2	8.3	11	8.9	1	1.9		
	Kurdish	0	00	2	1.6	0	00		
Stage	First	5	6.9	16	17.6	4	10.8	**34.664**	**.000**
	Second	29	40.3	23	25.3	7	18.9		
	Third	31	43.1	21	23.1	6	16.2		
	Fourth	7	9.7	31	34.1	20	54.1		
Type of study	Morning	16	66.7	74	59.7	35	67.3	1.112	.573
	Evening	8	33.3	50	40.3	17	32.7		

F= Frequency; %= Percentage; χ2= Pearson Chi-Square

This table shows that there are high statistically significant differences between participants

knowledge regarding vitamin D deficiency knowledge according to their stage of study (*p=.000*).

Conclusion

The majority of the sample are female gender, high percentage 78.5% of the total sample are at age (< 25), the majority of the study participants lacked in knowledge about vitamin D.

Conflict of interest

There are no conflicts of interest to declare.

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