

A Study about Awareness of Vitamin D Deficiency among Female in ALMAAREFA College in 2013-2014

¹Dr. Mona alfadeel, ²Manar alshammary, ³Amjaad almarjan, ⁴Aishah alqahtani, ⁵Seetaalsaadoun, ⁶Afnan alotebei, ⁷Dalal alanazi, ⁸Zinah alqahtani, ⁹Hajar aljarallah, ¹⁰Rafeef alsaleem

Abstract: Vitamin D deficiency is a significant problem for a growing proportion of the ALMAAREFA College population. Individuals with dark or covered skin are at particularly high risk due to ethno-cultural, environmental and genetic factors. We assessed the level of awareness of vitamin D deficiency among at-risk patients in order to identify groups most in need of education. This study was aimed to estimate the proportion of women with vitamin D deficiency in Almaarefa college (MCST). And to describe the awareness among female (MCST) about vitamin D deficiency. In the current study that done in Almaarefa about complications related to vitamin D deficiency had greater percentage than the study done in Europe and this is mainly related to low physical activity , unawareness of symptoms of vitamin D deficiency, but female in western countries more aware than males . However, although the higher percentage goes to Almaarefa College almost women didn't know that vitamin D deficiency will cause preeclampsia that affect fetus in first 26 weeks and approximately three fourth of women know about low muscle strength.

Keywords: Vitamin D deficiency, Awareness of vitamin D.

1. INTRODUCTION

Now vitamin D deficiency has become a pandemic disease in all over the world without any exception, due to multiple of causes and risk factors. This will cost the countries and health ministry's around the world a lot of money and efforts to treat it's complications. 1,25dihydroxycholecalcaiferol is necessary for normal mineralization of bone matrix, the main defect in this condition is failure to deliver adequate amounts of Calcium and phosphate to the sites of mineralization. Vitamin D deficiency causes defective calcification of bone matrix and causing in children which appears clinically as bone deformity, and oseomalacia in adults which increase the susceptibility of bone fracture .(9)

This study is intended to explore behaviors that most common lead to this deficiency in women , like inadequate exposure to the sun in smoggy cities or due to in adequate intake of provitamins on which the sun acts in the skin. Sometimes the deficiency occur due to inactivating mutation of the gene for renal Alpha-hydroxyl's, in which case there is no response to 1,25-dihydroxycholecalciferol.

This can be the basis for making an easy way for the patient to understand her problem and also, to educate women in our society about this problem and it's harmful effect on their health.

2. RESEARCH OBJECTIVES

1-To estimate the proportion of women with vitamin D deficiency in Almaarefa college (MCST) .

2-To describe the awareness among female (MCST) about vitamin D deficiency .

3. LITERATURE REVIEW

Higher Prevalence of Vitamin D Deficiency Is Associated with Immigrant Background among Children and Adolescents in Germany(16) .In recent years, a high prevalence of vitamin D deficiency among children and adolescents has been reported in countries with moderate climates. Those with an immigrant background living under these conditions are at especially high risk. Vitamin D Deficiency among Newborns in Amman (2)-(1) , Jordan Vitamin D deficiency is well recognized in selected Middle Eastern countries, but neonatal vitamin D status is not well studied in Jordan and other nearby countries. The aim of this study is to determine the prevalence of vitamin D deficiency in Jordanian newborns and risk factors associated with low levels. The prevalence of severely low vitamin D levels in newborn infants in Amman, Jordan, is substantial, even in newborns born during the spring and summer months. Vitamin D supplementation is needed in this population.

Vitamin D deficiency in Turkey Vitamin D-deficient rickets ‘once prevalent in Turkey’ is now reduced greatly after a nationwide program that included free distribution of vitamin D drops to all newborns and infants (0–12 months), visiting primary health stations throughout the country, by primary care doctors and nurses. Free disposal of vitamin D to infants is an effective way of preventing rickets in populations where rickets is prevalent and compliance with supplementation.

Vitamin-D-deficiency rickets in Kuwait: two hundred and fifty children with clinical, biochemical and radiological evidence of vitamin-D-deficiency rickets were studied over a period of 5 years. This report reveals that vitamin-D-deficiency rickets is common in Kuwait in spite of abundant sunlight all through the year because children are wrapped up and kept indoors. insufficient intake of vitamin D is another important factor in the pathogenesis of vitamin-D-deficiency rickets in Kuwait. In contrast, oral vitamin D did not provide such satisfactory results, presumably owing to poor patient/parental compliance.(17)

Vitamin D deficiency in a menopausal Europeans women A group of Europeans experts has prepared a report on vitamin D supplementation for menopausal women after it was revealed that Europeans have suffered an alarming decrease in their levels of this vitamin. Vitamin D is essential to the immune system and processes such as calcium absorption .We believe that many diseases can be aggravated by a chronic deficiency of vitamin D, states Faustino R. Pérez-López, researcher at the University of Zaragoza. In particular, this is worse during the menopause as low levels of vitamin D in the blood are associated with an increased risk of osteoporosis, loss of motor coordination and bone fractures.

High Prevalence of Vitamin D deficiency in China: Relationship with the Levels of Parathyroid Hormone and Markers of Bone Turn over ,this study clearly demonstrated that there is a high prevalence of vitamin D deficiency among healthy adults living in Shanghai during the winter season. During the winter, the zenith angle is increased, and UVB photons are absorbed by the earth's ozone layer. In addition, this population has a low vitamin D intake because food in China is not fortified with vitamin D. (10)

Vitamin D deficiency is common and unrecognized among recently arrived adult immigrants from The Horn of Africa. The prevalence of and risk factors for vitamin D deficiency were examined for recent adult immigrants from East Africa living in Melbourne. Demographic data were collected via a face-to-face questionnaire and risk factors predicting deficiency were examined. Lower levels were more likely in: (i) patients with a longer duration of residence in Australia, (ii) patients who were mostly covered when outdoors and (iii) women. Routine assessment for vitamin D deficiency should be considered for male and female immigrants from East Africa.(11)

A new study out of Brazil has found that many older Brazilian men are vitamin D deficient, despite living in the tropics. The researchers speculated that there are a few different reasons that might explain the low vitamin D levels found in this population. To start, since it was an older population, they may not seek enough sun exposure for their darker skin types. They also noted that it's more difficult for older populations to produce vitamin D because their skin gets thinner and is unable to produce as much vitamin D as younger persons.The researchers lastly mentioned that food fortification is low in Brazil, and many cannot afford supplement.(18)

4. METHODOLOGY

Study design:

This study was community base cross section study.

Study area:

It was in Riyadh (Almaarefa college) .

Study population:

Female age between 18 to 40 (workers –students).

Sample size:

179 women.

Sample technique:

We selected our sample by random sampling .

Collecting tool :

The Collected of date was done by 3 part questionnaire : about the Personal data, level of knowledge and awareness among female and prevention from developing deficiency.

Analysis:

The data was collected , then clearance and coding was done, also entered data and analysis was done by SPSS .

5. RESULT ANALYSIS

This research is about (Vitamin D deficiency) in Almaarefa college over female section for both students and employees and we have collect about 179 results to see if there is a well awareness of vitamin D deficiency , and that result shows :

Table 1 shows that almost **92%** of the sample were of the age of 18-25 years old , and **91%** were students , which means that the survey is done among educated people .

In table 2 shows that almost **92%** of women heard about vitamin D deficiency which indicates the well awareness of the disease among the community and specially women.

in table 3 that almost **95%** of women were well aware that Vitamin D prevents from osteoporosis , however about **69.3%** and **57.0%** of the women didn't know that Vitamin D protects from breast cancer and heart diseases and blood pressure.

in table 4 that almost **94 %** of women were aware of the later complications of Vitamin D deficiency mainly low physical activity by reducing muscle tone that know approximately **76%** that effected by life style here that a lot f people not doing exercise , however **75%** of women didn't know that vitamin D deficiency will cause preeclampsia that affect fetus in first 26 weeks .

Table 5 shows that most women they know about the three sources of vitamin D respectively and that indicates the well awareness among Almaarefa College.

All the above results shows that now a day's most of people and specially women heard about vitamin D deficiency. Most of those women are aware of the vitamin D functions specially those related to the bones , however the other functions are still unknown among them.

Fortunately, the sources of vitamin D that have been asked are all known among those women but also they do not get enough to improve their level of vitamin D that of bad food habit.

Table 6 above about **54.7%** of women are did not do the test of vitamin D maybe the cause of neglect and careless of their health, even that **48%** of women suffering from vitamin D deficiency and approximately **40%** they don't take medicine .

The result shows that the majority of women more than half haven't ever done the vitamin D test. And about most of those who done the test are suffering from vitamin D deficiency, the result which was expected. The most upset result is that only of women which is quite low percent of women are on treatment despite the awareness among the community of the importance of vitamin D and the risk consequences of its deficiency.

Table 7 shows that about **50%** of the asked women were exposed to sun light as it is one of vitamin D source .

Table 1: personal information

Age	Frequency	Percentage
18-25 years	164	91.60%
26-30 years	11	6.10%
31-35 years	2	1.10%
36-40 years	2	1.10%
Total	179	100.00%

Occupation	Frequency	Percentage
Student	162	90.50%
Employee	17	9.50%
Total	179	100.00%

Table 2: Hearing of Vitamin D deficiency

Hearing about vitamin D deficiency	Frequency	Percentage
Yes	163	91.10%
No	16	8.90%
Total	179	100.00%

Table 3: awareness of vitamin D functions

Total		I do not know		No		Yes		Functions
percentage	frequency	Percentage	frequency	percentage	Frequency	Percentage	frequency	Of Vit D in body:
100%	179	4.50%	8	1.10%	2	94.40%	169	A - Prevent from osteoporosis
100%	179	69.30%	124	7.80%	14	22.90%	41	B- protection from breast cancer
100%	179	57.00%	102	4.50%	8	38.50%	69	c-protection from Heart disease

Table 4: awareness of vitamin D deficiency complication

Total		I do not know		No		Yes		The later dangerous related to Vitamin D deficiency:
Percentage	Frequency	Percentage	frequency	Percentage	Frequency	Percentage	Frequency	
100%	179	4.50%	8	1.70%	3	93.90%	168	A- Lack of physical activity
100%	179	75.00%	136	11.70%	21	12.30%	22	B- Preeclampsia during the first 26 weeks
100%	179	19%	34	5.60%	10	75.40%	135	C-- Low muscle strength

Table 5: awareness of vitamin D sources

Resources of vitamin D deficiency	YES		NO		I DON'T KNOW		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	frequency	Percentage
Egg yolk	115	64.4%	12	6.7%	52	29.0%	179	100%
Fish oil	133	74.3%	9	5.0%	37	20.07%	179	100%
Liver	121	67.7%	9	5.0%	49	27.4%	179	100%

Table 6: vitamin D deficiency test

Total		NO		YES		vitamin D deficiency test
Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	
100%	179	54.70%	98	45.30%	81	Level test

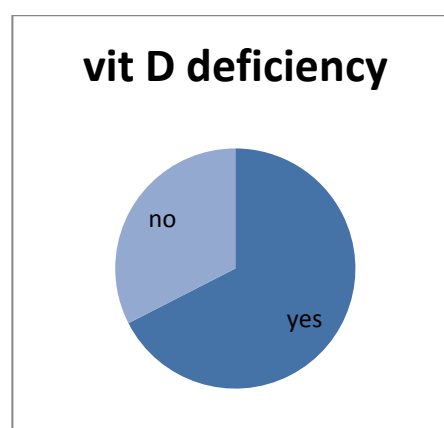
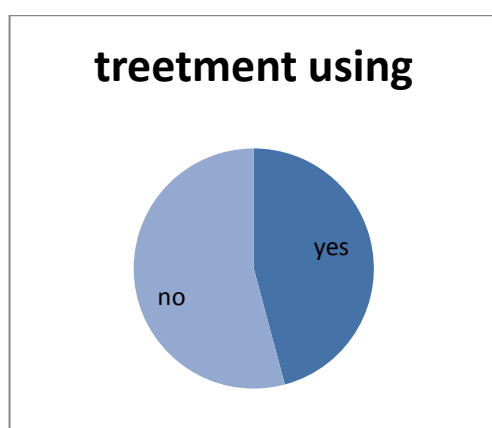


Table 7: exposure to sun light

Total	Never	Rarely	sometimes	Always	Sun exposure
178	24	67	76	11	Frequency
99.40%	13.40%	37.40%	42.50%	6.10%	Percentage

6. CONCLUSIONS

There was a higher proportion of study population they hear about vitamin D. The majority of people they measure knew about vitamin D deficiency but more than half they did not know that vitamin D it has a role in prevent heart disease and breast cancer. The high proportion knew of vitamin D deficiency related complications was known it cause a lack of physical activity and low muscle strength. However, there was a higher majority of people they are aware of vitamin D resources. People who did not do the test of vitamin D deficiency more than half they do not all take medication and exposed to sun, that is the main problem of vitamin D deficiency and cause related complications. People who did the test they knew that they were deficient and not taking correction measures.

7. DISCUSSION

Vitamin D deficiency is a significant problem for a growing proportion of the UK population. Individuals with dark or covered skin are at particularly high risk due to ethno-cultural, environmental and genetic factors. We assessed the level of awareness of vitamin D deficiency among at-risk patients and result was:

A cross-sectional survey using a piloted questionnaire was conducted among consecutive at-risk patients without a diagnosis of Vitamin D deficiency over a five day period. The mean age was 25 years. 92% of them had heard about vitamin D. And we find that the majority of at-risk patients are aware of vitamin D; nevertheless, there is a significant lack of knowledge among older people, who have higher morbidity. A programme of targeted education of the at-risk population is recommended. And when we made comparison between the result in Almaarefa collage and other studies in different countries the result was as the following.

In Almaarefa the survey was completed by 179 participant, most of them reported that there awareness of vitamin d deficiency was higher than European society and this is related to different education and lifestyle .there are also another study done in Kuwait in 2008 found that they had less knowledge than Almaarefa and this is referred to the same cause that we mentioned in the previous study which is different lifestyle. Adding on this greater proportion of men had not heard about it they had never prior to completing the survey.[3]

In addition another study was done at Almaarefa collage for awareness of vitamin D function Such as Prevention of osteoporosis, protection from breast cancer and protection from heart disease. Out of 179 participant 169 know that vitamin D prevent osteoporosis. 124 they don't know that vitamin D help to protection from breast cancer and 102 they don't know that also help to protection from heart disease and blood pressure. people always think that is only related to bone disease, in contrast to study was done on 221 participant in Europe the result was markedly lower than that in Almaarefa and the reason behind this was that most of Europeans did not know the exact function of vitamin in their body and half of them did not expose their skin other than their face to the sun, and few percentage did not include vitamin D their diet 3,14. While in Germany study done in 2009 shows the highest percentage of people aged 30 and older .they are well educated and also they had a good background about all vitamins and anything related to their health. In the current study that done in Almaarefa about complications related to vitamin D deficiency had greater percentage than the study done in Europe and this is mainly related to low physical activity , unawareness of symptoms of vitamin D deficiency ,but female in western countries more aware than males . However, although the higher percentage goes to Almaarefa College almost women didn't know that vitamin D deficiency will cause preeclampsia that affect fetus in first 26 weeks and approximately three forth of women know about low muscle strength. But in Kuwait the result was almost the same, and this suggests that they have similar lifestyle adding on this women depend on cars and they don't walk too much also they don't expose to the sun. [15],[14].

The students at Almaarefa College who are suffering from vitamin D deficiency there awareness of sources was higher than the study done Europ , but they were different than each other and that's why there was variability in value. When we

talk about sun exposure which is one of the sources so, the higher percentage group goes to Europe other than Almaarefa. In contrast the study done on Australia in 2007 was lower than Almaarefa , One of the reason was study suggest that Australian people get skin cancer in high rate .[3],[11],[12].

In Almaarefa, most of the result reported low percentage of students haven't ever done the vitamin D test comparing to Australia that had the highest percentage because they think if they expose their skin to the sun continuously they don't have to do any test, in Kuwait one third of participant did not expose to the test at all and this again related to their lifestyle, most of them are male than female.[13],[12],[14]

8. RECOMMENDATION

- The awareness of community should be raised about vitamin D important & sources.
- Exposure to the early morning sun and using vitamin D supplement regularly to Maintain normal level.

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