



RESEARCH ARTICLE

PREVALENCE OF VITAMIN D DEFICIENCY AND RISK FACTORS, COMPLICATION AMONG FEMALES AGED 18-35 YEARS

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Manuscript Info

Abstract

Manuscript History

Received: 14 October 2019

Final Accepted: 16 November 2019

Published: December 2019

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Introduction:-

In females from age 18-35 have demonstrated an association of low vitamin D concentrations. This study to limit the number of females who have vitamin D deficiency and who have the probability to have vitamin D deficiency by subtracting all the symptoms and signs. The females who already have deficiency I have explained the complication involved. This problem is a problem of the times because it is unknown and is not interested by the majority of society.

Rationale:

This research it's important to know how many females are deficient in vitamin D, and how many females have had complications due to the deficiency of vitamin D.

Especially females because there is relation of Vitamin D because it's regulated the immune system and the immune disease it's more common in the females.

And another relation between the vitamin D and progesterone hormone play the role in regulating the immune system. The vitamin D receptor (VDR) is induced in T cells by progesterone.

Literature review:-

According to the other previous study like:

Screening for Vitamin D Deficiency In Females In Madina Region; Saudi Arabia. Vitamin D Deficiency in A Sunny Environment (Nagib and A, 2012).

The result was: 6 female patients (10%) showed significant vitamin D deficiency with 25(OH) D < 20 ng/ml. However, 54 female patients (90%) showed severe vitamin D deficiency with 25 (OH) D < 10 ng/ml.

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The number of females showed severe vitamin D deficiency was a big number in proportion to the time since 2010 this mean this study was strong in terms of credibility. (Nagib and A, 2012)

On the other hand: this study very primitive because it's not associated with other disease can leading to vitamin D deficiency, even they mentioned the associated disease (hypothyroidism, type 2 diabetes) but in general.

-Vitamin D status and breast cancer in Saudi Arabian women: case-control study (Yousef et al., 2013).

The result was: An inverse association exists between serum 25(OH)D concentrations and breast cancer risk in Saudi Arabian women. (Yousef et al., 2013).

The same condition in our research about how much important association between the vitamin D deficiency and the cancer in general and the breast cancer in particular.

The current research aims to determine the prevalence of vitamin D deficiency among females aged (18-35).

Research Objectives:-

1. How many females have a risk factors of vitamin D deficiency?
2. How many females have a complications of vitamin D deficiency?
3. Relation of Vitamin D deficiency and another vitamins deficiency.
4. Association between the vitamin D deficiency and the cancer.

Methodology:-

Study design:

This is an analytical cross-sectional study.

Study Setting and period:

This is an analytical cross-sectional study conducted at Universities, schools and hospitals (from the general population), KSA from may 2019 till December 2019.

Study population and sampling:

Study participants and sampling method:

Participants were conducted study by carrying the questionnaire during the period of data collection from 14/5/2019 till 1/11/2019. Inclusion criteria; Females ≥ 18 years old. Exclusion criteria; Males and females those younger than 18 years old.

Sampling size:

Sample size was calculated using OpenEpi for sample size calculation for cross sectional studies 516-19, hypothesizing the true answers. Accordingly, 891 participants were gathered, but 80 participants were excluded from them, as it became clear from their answers that they are male, and this particular question was asked to mention the need for the research and its results to be specific to females. score of prevalence of who having vitamin D deficiency higher than the 50th percentile from the number of responses of females.

According to the prevalence study, 29% of patients who discover the vitamin D deficiency in the hospital accidentally, 45% the know about the deficiency in duration of one year and less which is mean they may have been suffering from vitamin D deficiency for a longer time, but they do not know, 40% of them they are don't know the level of vitamin D in their bodies.

Measurements:-

Explanatory variables:

1. Sociodemographic characteristics: age, sex, Region, marital status, nationality.
2. Disease-related information: Having a vitamin D deficiency, Discovery method, duration, level of vitamin D, receive treatment, the type of dealing with the disease in terms of seriousness, presence of complications, etc.

Outcome measure:-**By measuring the proportion of females with vitamin D deficiency this will be measured using:**

By determining how the disease is discovered and by knowing the level of vitamin D in patient who having vitamin D deficiency.

The outcome has been divided accordingly: People with vitamin D deficiency without any relationship with other vitamin deficiencies, People with vitamin D deficiency with a relationship with depression, People with a vitamin D deficiency with a relationship to chronic diseases such as diabetes and high blood pressure

Prevalence study: will be carried to test the questionnaire if easily understood and the response of the participants. Data from the pilot study will be used to calculate the sample size.

Statistical analysis:

Data were entered and analyzed using Statistical Package for the Social Sciences (SPSS) version 17. Descriptive statistics were displayed as frequencies and percentages for categorical variables. Measures of central tendencies (the median), and measures and dispersion (minimum – maximum) were used to summarize continuous variables, as the continuous variables were not normally distributed when tested by Shapiro-Wilk test. Univariate analysis was performed to investigate the association between the exposure factors (age, sex, Region, marital status, nationality, having a vitamin D deficiency, Discovery method, duration, level of vitamin D, receive treatment, the type of dealing with the disease in terms of seriousness, presence of complications, etc.

With the outcome on the one hand, receiving the cure, and on the way of looking at this health problem. This was performed using chi-squared test and mann-whitney test. Multivariate analysis to investigate factors independently was performed using binary logistic regression. P value was set at a significance level of < 0.05 .

Results:-

In this study, the aim was to determine the prevalence of vitamin D deficiency among females aged (18-35), 811 female's participants and 523 from this number they having vitamin D deficiency, were consecutively recruited from outpatient clinics, during a period from 14/5/2019 to 1/11/2019. Socio-demographic characteristics of the studied group and to make sure of that, the question of determining gender was asked to limit the study only to females, most of the participants were Saudis 92.4% and living in abha city 37.5%. The most age from 21-23 years old 31.2%. According to marital status of the participants, most of them were single 73.1%. The majority 58.7% were suffering from vitamin D deficiency. the most of them they know hospital accidently 29.1%, according to how long have they been suffering from vitamin D deficiency 45.8% for one year or less, 40.2% they don't know the level of vitamin D in their body, the study has identified the risk factors: 48% no dark skin, 69.2% they eat the fish but the rate of fish intake monthly was 43.1%, 75.6% they eat dairy products and the rate of intake 42% daily, who not exposed to sunlight 50.6%, who always feel tired and fatigue for no reason 51%, feel bone pain 61.5%.

According to the complications: 58.9% they don't have osteoporosis, 61.8% feel back pain, 51.5% don't have noticeable depression, 72.7% no impaired wound healing. Regarding the complications and associated diseases: 36.7% they don't have iron deficiency, 39.8% they don't know if they have calcium deficiency, 59% they don't know if they have vitamin B1 deficiency, 60.6% they don't know if have vitamin B6 deficiency, 62.4% they don't know if have vitamin B9 deficiency, 57.9% they don't know if have vitamin B12 deficiency, 72.3% they don't have HTN, 79.8% they don't have DM, 83.5% they don't have any cardiac disease, 79.6% they don't suffer from asthma, 95.1% they don't suffer from any malignant disease, 60.9% don't receive treatment, 51.6% think it's a serious problem.

Correlations			
		Do you have vitamin D deficiency?	Are you exposed to sunlight?
Do you have vitamin D deficiency?	Pearson Correlation	1	-.104**
	Sig. (2-tailed)		.002
	N	891	891
Are you exposed to sunlight?	Pearson Correlation	-.104**	1
	Sig. (2-tailed)	.002	
	N	891	891

** . Correlation is significant at the 0.01 level (2-tailed).

Table 1:-Shows P value is 0.002 which is less than 0.05 which means there is a strong relationship between vitamin D deficiency and not being exposed to sunlight.

Correlations			
		Do you have vitamin D deficiency?	Do you have DM?
Do you have vitamin D deficiency?	Pearson Correlation	1	.095**
	Sig. (2-tailed)		.005
	N	891	891
Do you have DM?	Pearson Correlation	.095**	1
	Sig. (2-tailed)	.005	
	N	891	891

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2:-Shows P-value is 0.005 which means there is a strong relationship between having DM and vitamin D deficiency.

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Correlations			
		Do you have vitamin D deficiency?	Do you have osteoporosis ?
Do you have vitamin D deficiency?	Pearson Correlation	1	.101**
	Sig. (2-tailed)		.003
	N	891	891
Do you have osteoporosis?	Pearson Correlation	.101**	1
	Sig. (2-tailed)	.003	
	N	891	891

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3:-Shows P-value is 0.003 which means there is a strong relationship between having osteoporosis and vitamin D deficiency.

Correlations			
		Do you have vitamin D deficiency?	Do you have any cardiac disease?
Do you have vitamin D deficiency?	Pearson Correlation	1	.088**
	Sig. (2-tailed)		.009
	N	891	891
Do you have any cardiac disease?	Pearson Correlation	.088**	1
	Sig. (2-tailed)	.009	
	N	891	891

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4:-Shows P-value is 0.009 which means there is a strong relationship between having cardiac disease and vitamin D deficiency.

Correlations			
		Do you have vitamin D deficiency?	Do you suffer from noticeable depression?
Do you have vitamin D deficiency?	Pearson Correlation	1	.113**
	Sig. (2-tailed)		.001
	N	891	891
Do you suffer from noticeable depression?	Pearson Correlation	.113**	1
	Sig. (2-tailed)	.001	
	N	891	891

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5:Shows P-value is 0.001 which means there is a strong relationship between suffering from depression and vitamin D deficiency.

Correlations			
		Do you have vitamin D deficiency?	Do you feel back pain?
Do you have vitamin D deficiency?	Pearson Correlation	1	.119**
	Sig. (2-tailed)		.000
	N	891	891
Do you feel back pain?	Pearson Correlation	.119**	1
	Sig. (2-tailed)	.000	
	N	891	891

** . Correlation is significant at the 0.01 level (2-tailed).

Table 6:Shows P-value is 0.000 which means there is a strong relationship between back pain and vitamin D deficiency.

Discussion:-

This study was based on a number of 891 participants, but to ensure the accuracy of the filling and the correctness of the information entered, a question was asked about sex, as the study is limited to females only, and males were excluded from this study as the number of females is 811 and 58.7% of them suffer From vitamin D deficiency, 259 of them discovered a vitamin deficiency hospital accidentally which may mean that a vitamin D deficiency may not give unhealthy signs to the patient, which requires going to the doctor for a health check-up, Or it may be because of health negligence or because this health problem is not given its true size.

The current study showed statistically significant association between vitamin D deficiency and not being exposed to sunlight ($p=0.002$) this means that the importance of exposure to sunlight may be among the reasons that prevent vitamin D deficiency.

there is a strong relationship between having DM and vitamin D deficiency ($p=0.005$) because the low of vitamin D leading to associated with high body fat, high blood glucose, and decreased insulin sensitivity, a strong relationship between having osteoporosis and vitamin D deficiency ($p=0.003$) strong relationship between having cardiac disease and vitamin D deficiency, strong relationship between suffering from depression and vitamin D deficiency ($p=0.001$) As this is a very good indication of the association of vitamin D deficiency with depression, or it may be a complication of the disease itself.

Conclusion:-

The study findings show that vitamin D deficiency is the most common vitamins deficiency than other vitamins and the females which is more susceptible to suffering from the osteoporosis and relationship with it and the depression and the important chronic disease like diabetes mellitus and hypertension. It is recommended to provide healthcare workers with launch specific awareness programs on not neglecting the vitamins deficiency and effective of ease of treatment and methods.

Replication of this study in multiple hospitals or areas across different caregiver staff is recommended, thus making vitamin D deficiency problem in the domain of evidence-based medicine.

Recommendation:-

we recommend setting up health education programs about the vitamin D deficiency This health problem must be presented broadly and beneficially and, in a way, that everyone understands, as most deal with the deficiency of vitamins by ignoring and not being important, work should be done on health conferences and medical discussions on that.

Acknowledgement:-

The authors would like to thank the participants for their great cooperation, Amnah Hazaa Gefri, Ahlam Rashed Alshahrani, Raghad Saeed Almoaiedh, Manar Ahmed Alsaedi and Maryam Abdulaziz Dighriri for collecting data from the (general population). They worked hard to collect data greatly, and a large sample number was collected for their great effort.

Ethical considerations:-

Administrative approval will be sought from the unit of biomedical ethics research committee Ethical approval will be sought from the ethical committee of the faculty of medicine, king Abdulaziz university. An informed consent will be sought from the participants. All procedures of the research will be according to the declaration of Helsinki on ethical principles for medical research involving human subjects [8]

Source of funding: self-funded:-

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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