



Knowledge and Practices Regarding Vitamin D Deficiency among Women Attending Imam Hussein Medical City in Karbala 2018

A Thesis

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Family Medicine

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

(يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ
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Dedication

I dedicate my thesis to my father, my mother and my brothers for their continuous help and support.

A special feeling of gratitude to my mother, Who help me in data entering and the writing language of this research in addition to her affection, encouragement and prayers all over the times that make me able to get success.

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List of Abbreviations

| | |
|-------------------|---|
| 1,25(OH)2D | 1,25-dihydroxyvitamin D |
| 25OHD | 25-hydroxyvitamin D |
| IU | International unit |
| KAP | Knowledge, Attitude and Practice |
| Mcg | Micrograms |
| Mg | Milligrams |
| ml | Milliliters |
| mmol/l | Millimoles per Liter |
| Ng | Nano grams |
| Nm | Nanometer |
| nmol/L | Nano moles Per Liter |
| PTH | Parathyroid Hormone |
| SD | Standard Deviation |
| UVB | Ultra violet Beta |
| UVR | Ultra violet ray |
| VD | Vitamin D |
| VD2 | Vitamin D2 |
| VD3 | vitamin D3 |
| VDD | Vitamin D Deficiency |

Abstract

Background: vitamin D deficiency is a global health problem. It is significantly associated with skeletal and non-skeletal problems. Prevention can be maintained mainly by effective sun exposure or supplementation and to lesser extent by dietary intake.

Objectives: To determine the knowledge and practices level of women towards vitamin D deficiency.

Methods: A cross sectional study, purposive sample of 442 women was approached (clients and companion of clients) who attended consultants' clinics of Imam Hussein Medical City in Karbala. Data collection done between 2nd March – 30th June 2018 through direct interview using a questionnaire adapted from similar researches. Statistical Package for the Social Sciences (SPSS) program version 20 was used for data analysis and P value of a level < 0.05 considered significant.

Results: less than half (45.2%) of the women had heard about vitamin D; their source of information was from relatives and friends then from health care provider. The mean score for the participants' knowledge about vitamin D deficiency was 4.25 out of 9.0 (47%). It has significant association with higher educational level and urban residence. There is no significant difference regarding age, marital status or occupation. The mean score for the participants' practice about vitamin D deficiency was 2.47 out of 4 (61.75%). There is no influence of practice score by socio-demographic factors.

Conclusions: Over all knowledge was suboptimal with a fair level of regarding practices towards VDD.



Chapter One

Introduction

Definition of vitamin D and its deficiency:

Vitamin D (VD) also called the sunshine vitamin or steroid pro hormone, is one of the fat soluble vitamins synthesized in the body mainly in response to sun exposure , also it can be obtained from food or supplements. It has an important role in skeletal and non-skeletal health (1-3) .

The Endocrine Society had been defined vitamin D deficiency (VDD) as a serum circulating 25-hydroxyvitamin D level (25(OH)D) < 20 ng/ml, and VD insufficiency as a 25(OH)D of 21–29 ng/ml (4).

Epidemiology of Vitamin D deficiency

Nowadays the whole world is complaining of unhealthy lifestyle and incorrect habits that can lead to several disorders like VDD which affecting about 1 billion people worldwide (5). A great attention has been given to VD and referred as the drug of the decade (6).

Vitamin D deficiency is a global epidemic problem and yet, it is mostly unknown by majority of population (7). This public health problem affects all regions of the world, specially the Middle East (8) and particularly in girls and women (9). The discovery of VD has been occurred in the early 20th century. Since then, the understanding of its role has been evolving from being a simple vitamin to a steroid pro-hormone (10).

Lack of awareness about the role of VD, its health benefits, and prevention of deficient states can be contributed to this worldwide spread (11). Vitamin D deficiency is found to be more prevalent in Middle East than Western countries (12).

A meta-analysis study revealed that 20–80% of healthy persons in the Middle East have a VDD ⁽¹²⁾. A study done in *Iraqi Kurdistan* showed a significant prevalence of VDD among the Kurdistan women ⁽¹³⁾. Darwish 2018 study showed a prevalence of VDD in females in holy city of Karbala ⁽¹⁴⁾.

Metabolism of VD

Vitamin D arises in 2 forms: vitamin D₂ (VD₂) or ergocalciferol which is synthesized by plants and is not produced by the human body and vitamin D₃(VD₃) or cholecalciferol, the more power form ⁽⁵⁾. Vitamin D₃ is produced in the skin from 7- dehydrocholesterol by exposure to UVB rays from sunlight. It is converted in the liver to 25(OH) D₃ (calcidiol), which is the form that mainly checked to determine blood levels. Then by metabolic activation in the renal system the primary active metabolite, calcitriol (1,25(OH)₂ D₃) is synthesized ⁽¹⁵⁾.

The metabolic activation in the renal system is enhanced by parathyroid hormone (PTH) and suppressed by phosphate. The production of 1, 25(OH)₂ D₃ is controlled by a powerful feedback mechanism by serum calcium and phosphate directly and by calcium indirectly by decreasing PTH. All forms of VD In the circulation are linked to carrier proteins, mostly vitamin D-binding protein (DBP) and albumin ⁽¹⁶⁾. Vitamin D₂ is less potent than VD₃ because it has lower ability for binding to proteins and therefore it has a fast clearance. Thus, it's recommended to prescribe VD₃ as it has the appropriate ability to increase the serum levels of VD ⁽¹⁷⁾.

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Among different forms of VD, the level of 25(OH)D is the best indicator of VD storage, as it is the major circulating form of VD and has a half-life around two to three weeks ⁽¹⁷⁾.

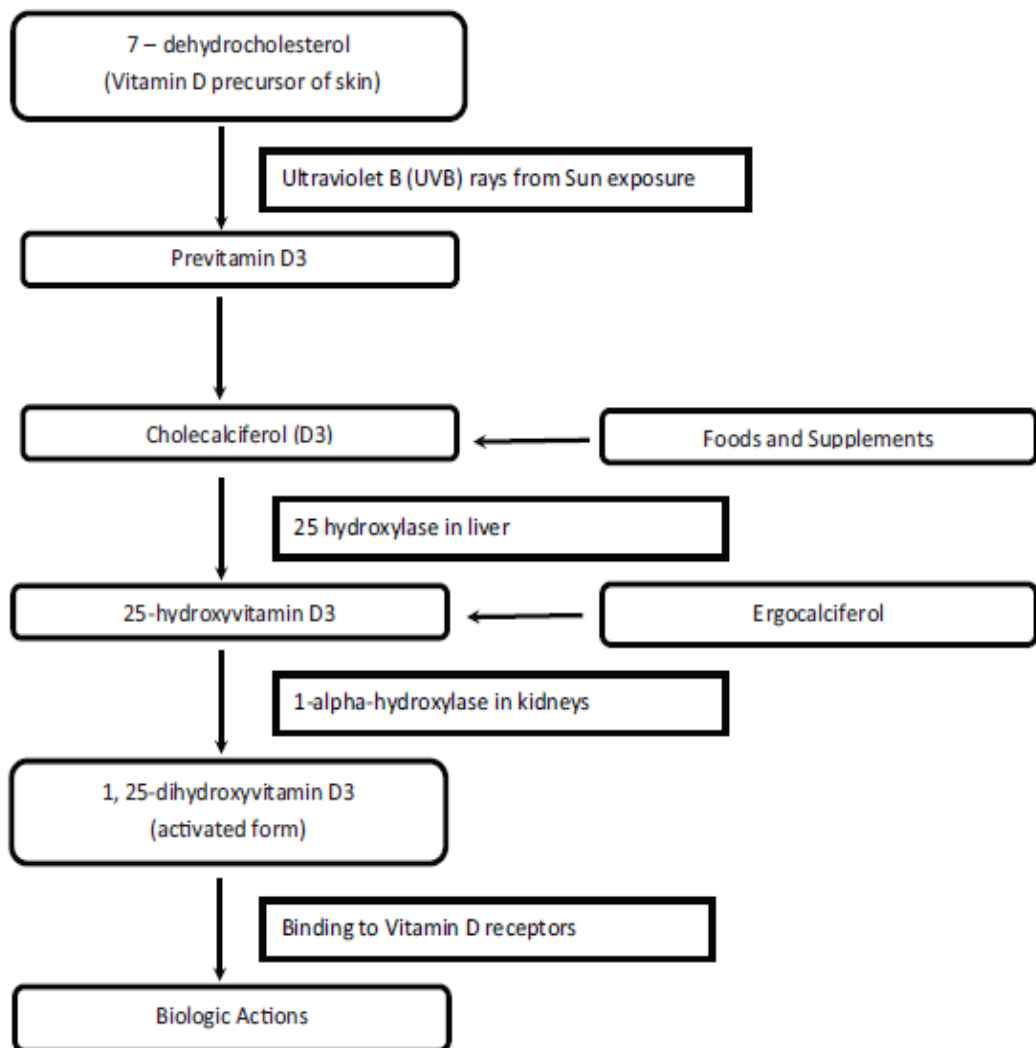


Fig.1. synthesis of vitamin D ⁽¹⁸⁾

Vitamin D sources

Vitamin D can be provided through Sun exposure ,dietary sources and supplements ⁽¹⁹⁾. Sunlight exposure has many health benefits and risks. Improve energy and mood elevation has been linked to sunlight Exposure ⁽²⁰⁾.

The best-known advantage of sunlight is its ability to supply the human body with VD ⁽²¹⁾. Exposure to the ultraviolet radiation (UVR) in sunlight is the major source of VD ⁽²²⁾.

Ultraviolet-Beta (UVB) radiation (290-320) nm is the only part of the solar UVR that initiates VD synthesis in the skin and it is believed that more than 90 % of the required VD is provided by this type of radiation ⁽²³⁾. A large amount of UVB radiation is absorbed by the ozone layer, about 0.1% can reach the surface of the earth at noon period at the equator in the summer ⁽²⁴⁾.

In humans, it is thought that, about 10,000 units of VD are produced within 30 min of full body exposure to the sun ⁽²⁵⁾. It is believed that approximately 5–30 min of exposure to sunlight between 10 a.m. to 3 p.m. in most human populated latitudes, at least twice a week, to the face, arms, legs, or back without using sunscreen can produce the required amount of VD ⁽²⁵⁾. Many factors affect UVB exposure and subsequent VD production such as increasing age, skin pigmentation, using of sunscreen, time of sun exposure through the day, air pollution and geographical locations (e.g., higher latitude) ⁽²⁶⁾.

Application of sunscreen with a sun protection factor (SPF) of 30 reduces the ability of the skin to produce VD as it absorbs about 95–98%

of solar UVB radiation ⁽²⁷⁾ also, indoor sunlight exposure through a window does not initiate VD synthesis by the skin, because UVB radiation is not able to pass through glass ⁽²⁸⁾. The amount of VD that being from the sun is stored in the body 2 to 3 times longer than supplements taken orally ⁽²⁹⁾. Over exposure to UVR has some adverse risks such as malignant melanoma which is an a malignant tumor of the skin ⁽³⁰⁾. Researches are needed to detect what amount of UVB exposure is required for the production of VD without increasing the risk of developing skin cancer ⁽²¹⁾.

Studies have established that women with active sunlight exposure have more life expectancy than those who avoided sun exposure; although risk of skin cancer increased in sunlight exposed group ⁽³¹⁾. A risk-benefit analysis of sunburn versus VD synthesis shows that the best time for brief sun exposure is in the middle of the day ⁽³²⁾. It is impossible to reach toxic VD levels by sun exposure alone ⁽²³⁾ Possibly because prolonged UVB radiation determines local inactivation of pre-vitamin D3 and vitaminD3 ⁽³³⁾.

Diet

Vitamin D can be obtained from various types of foods in small amount and from fortified foods and supplements in more extent amount ⁽³⁴⁾. The dependence on dietary sources to provide adequate intakes of VD especially in vulnerable groups during winter month is increased If sunlight exposure is limited ⁽³⁵⁾.

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The natural sources of VD can be obtained through the diet from a limited number of foods such as fatty fish like salmon, mackerel or tuna, mushrooms, egg yolks and dairy products.

It is also can be obtained from food fortified with VD, such as cereal products, bakery products, baby food, milk, butter, cheese and margarine^(36, 37). Unfortunately, Vegetables and fruits are not rich sources of VD. Mushroom is the only natural type contains VD according to the United States Department of Agriculture (USDA). Orange juice can be considered as a source when it is fortified with VD ⁽³⁸⁾. As natural food types containing VD without fortification are limited ⁽³⁹⁾, the intake of fortified foods and supplements are necessary for maintaining the state of VD that is mandatory to ensure health and prevent VDD ⁽¹⁰⁾.

Fortified foods are types of foods to which one or more essential nutrients have been added for prevention or correction purposes of a demonstrated deficiency ⁽⁴⁰⁾. Different policies in the world for food fortification with VD has been existed; milk fortified successfully in some countries, fortification of margarine and infant formula is mandatory in the United Kingdom ⁽⁴¹⁾. Vitamin D₂ and VD₃ are used in fortified foods and in VD supplements ⁽⁴⁾. Vitamin D is stable and doesn't deactivate when the diet is stored or heated for long times⁽⁴²⁾.

Vitamin D Health Benefits

Vitamin D is responsible for a lots of functions in the human body ⁽⁴³⁾. It has an important function in variant metabolic processes and neuromuscular activities ⁽¹⁷⁾. It is showed that VD is very important for the absorption of calcium by the intestine ⁽⁴⁴⁾.

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It regulates the absorption of calcium and phosphorus from the diet and their deposition in bone ⁽⁴¹⁾. Without VD, 60% of phosphorus and only 10 % of dietary calcium is absorbed ⁽²⁷⁾.

The importance of VD in bone mineralization and bone health has been documented, particularly in relation to rickets and osteomalacia⁽⁴⁰⁾. Vitamin D has been used in the treatment and prevention of rickets and osteomalacia and later in prevention and treatment of osteoporosis⁽¹⁵⁾.

Vitamin D receptors are found in different tissues and organs, thus a multiple conditions are linked to VDD ⁽¹⁵⁾; These include: hypertension, diabetes mellitus types 1 and 2, coronary artery disease, heart failure, metabolic syndrome, hyperthyroidism, osteoporosis, chronic fatigue syndrome, chronic backache and depression ⁽⁴⁵⁾. Vitamin D has an important immune modulating effects and its deficiency exacerbates autoimmune diseases such as inflammatory bowel disease.

A suggestion of new studies that VD has anti-inflammatory properties in autoimmune conditions such as multiple sclerosis, influencing the proliferation and differentiation of B cells and T cells⁽¹⁵⁾. Other studies revealed that VD levels below 20 ng/mL is associated with a 30 to 50 % increased risk of colon, prostate and breast cancers; in addition to increase mortality rate from these cancers ⁽⁴⁶⁾. Vitamin D can affect the cardiovascular system by several mechanisms; It acts to inhibit the renin-angiotensin-aldosterone system and enhance the endothelium function, in addition to its role in regulating lymphocytes and monocytes and limiting the release of inflammatory cytokines that can increase the retention of cholesterol in the vascular walls ⁽⁴⁷⁾.

Vitamin D deficiency has been associated with myocardial infarction and cardiac failure in very ill patients. It has been revealed that low VD levels contribute to cardiovascular diseases, like left ventricular hypertrophy, hypertension, coronary artery calcification, endothelial dysfunction, heart failure and stroke⁽⁴⁸⁾.

Vitamin D has an important role in frightening bacterial and viral infections in at least two ways: one is by inducing cathelicidin, a polypeptide with antimicrobial and anti-endotoxin properties, the second way is by shifting cytokine production toward diseases less prone to cause inflammation⁽⁴⁹⁾. In 2014 Researchers showed that VD regulates the synthesis of serotonin inside and outside the brain, this mechanism links the risk of autism to VDD ⁽⁵⁰⁾. They also revealed that increasing 25(OH) D concentrations might alleviate some features of autism.

A study reviewed the evidence that VD decrease the risk of autism spectrum disorder ⁽⁵¹⁾. Its function in preserving the epidermal barrier and modulating antimicrobial peptides and the immune response influences the pathogenesis of atopic dermatitis, and its deficiency has been linked to the development of diseases like psoriasis and vitiligo. Vitamin D promotes the synthesis of folliculogenesis-regulating genes, thus inducing regeneration and follicle maturation⁽⁵²⁾ therefore, VDD can lead to hair loss⁽⁵³⁾.

Pregnant women with VDD had an increased risk of spontaneous abortions, preeclampsia, bacterial vaginosis and preterm labor and can harm the baby by growth retardation, physical deformity and more health risks in the future⁽⁵⁴⁾.

Assessment of Vitamin D

Clinical presentations of VDD include lethargy, increased vulnerability to bacterial and viral infections, exacerbation of existing chronic illness, the difficulty to lose weight and visceral obesity, insulin resistance, low back ache, proximal muscle weakness muscle pain and spontaneous throbbing bone pain. Painful skeletal sites at times can be identified as pseudo-fractures using routine plain x-rays ⁽⁵⁵⁾.

Groups at risk of VDD include: Persons with limited sun exposure, elderly, Breastfed infants, individuals with dark skin, Persons with fat malabsorption, obese Persons or those who had a gastric bypass surgery⁽¹⁸⁾. Total body VD stores can be determined by measuring the serum concentration of total 25 (OH) D ⁽¹⁷⁾.

Despite 1, 25(OH) 2 D is the active form of VD, it should not be measured to assess VD status. Usually it is normal or even elevated in patients with VDD as the result of secondary hyperparathyroidism associated with VDD⁽⁵⁶⁾. Despite there is no assent on optimal levels of 25(OH)D as measured in serum, by most experts VDD is defined as a 25(OH)D level of less than 20 ng per milliliter (50 nmol per liter) ⁽⁵⁶⁾. It is found that a level of 25(OH)D of 21 to 29 ng per milliliter(52 to 72 nmol per liter) can indicate of VD insufficiency and a level of 30 ng per milliliter or greater can indicate of VD sufficiency⁽⁵⁷⁾.

Parathyroid hormone level is inversely associated with 25(OH)D level until the later reach 30 to 40 ng per milliliter (75 to 100 nmol per liter), at which point PH levels begin to level off ⁽⁵⁸⁾.

Also, there is an increment of intestinal calcium transport by 45 to 65% in women when 25(OH)D level were increased from an average of 20 to 32 ng per milliliter (50 to 80 nmol/L) ⁽⁵⁹⁾.

Table 1 Classification of Vitamin D Status by Serum 25-Hydroxyvitamin D ⁽⁶⁰⁾

| Classification | ng/mL | nmol/L |
|-----------------------|--------------|---------------|
| Deficient | ≤ 20 | ≤ 50 |
| Insufficient | 21-30 | 51-75 |
| Sufficient | > 30 | > 75 |

Treatment of VDD

Complementary VD supplements is important and it is more effective at increasing and maintaining the VD level in blood in conditions where it is difficult to provide adequate amounts of VD through exposure to solar radiation and dietary sources⁽²⁹⁾. Nowadays, nutritional supplement industries had a fast developing market and variable inexpensive supplements of VD (in two forms D₂ or D₃) are readily exist as over the counter drugs with or without calcium⁽⁶¹⁾.

Table 2 Recommended dietary allowance (RDA) of VD by the institute of medicine ⁽⁶¹⁾

| Age (in years) | RDA (international unit, IU) |
|----------------|------------------------------|
| ≤1 | 400 |
| 1-70 | 600 |
| ≥70 | 800 |

The treatment of VDD can be promoted by increasing consumption of food fortified with VD or oral VD supplements. Commonly, The two forms of VD are exist in a variable options (tablet and gel capsule), dosages (200 to 500 000 IU), and dosing regimens (for example, daily, weekly, monthly, or yearly) and can be combined with oral calcium⁽⁶²⁾. The goal of the treatment is to neutralize serum level of VD, to alleviate symptoms and reduce the risk of fractures, falls, and other unfavorable health outcomes ⁽⁶³⁾.

It has been shown that a combination of VD supplements with calcium can prevent hip and non-vertebral fractures in old men and women ⁽⁶⁴⁾. There is a suggestion that all adults with VDD to be managed with 50,000 IU of VD₂ or VD₃ once weekly for eight weeks or 6000 IU of VD₂ or VD₃ once per day to maintain serum level of VD more than 30 ng/ml, then continued by maintenance treatment of 1500–2000 IU per day ⁽⁴⁾. Serum level of VD begins to increase at four hours after oral intake of VD supplement, peak by 12 hrs, then it will return near the baseline at 72 hrs.

This state give a useful clinical check to evaluate adequacy of VD absorption ⁽³⁹⁾.

Recommendation for retesting VD level during 3 months after starting supplementation ⁽⁶⁵⁾. It is observed that VD intoxication can occur when serum levels of 25(OH)D are greater than 150 ng/mL⁽²⁷⁾. Vitamin D toxicity rarely results from diet sources or sun exposure, but it can occur from iatrogenic sources which can cause catastrophic problems that shown in animals and sometimes in children and adults, leads to vomiting, hypercalcemia, thirst and polyuria, ectopic calcifications and widespread tissue damage and lethality⁽⁴³⁾. Vitamin D toxicity can occur when the dose of more than 50,000 IU / day as it will increase levels of 25 (OH) D to more than 150 ng/ml. While, a Dose of 10,000 IU of VD3 / day for up to five months don't predispose to VD toxicity ⁽⁶⁶⁾ .

An effective way for preserving the level of VD above 30 ng/mL is by taking 50,000 IU of VD2 every two weeks for the treatment and prevention of further VDD for up to six years ⁽⁶⁷⁾.

Knowledge and practices towards VDD

Knowledge and practice has an important role in the prevention and control of diseases. The knowledge means what people understand of any given subject. Practice means how the people behave, in another meaning its refers to the habits in which they demonstrate their knowledge through their behaviors⁽⁶⁸⁾.

Several researches have been conducted to demonstrate and assess the awareness about VD around the world. All of these studies revealed that increasing the awareness about VD is necessary ⁽⁶⁹⁾ .

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In Iraq, There is a limited research concerning VD knowledge and practices as it is a novel subject. One study done in Baghdad Al-Rusafa 2016 explored A KAP of Iraqi mothers regarding VD supplementation⁽⁷⁰⁾.

Globally, multiple studies have focused on the biological association that lead to VDD; anyhow, some studies had been investigated the knowledge and practices towards VDD performed in different countries (46, 71, 72). Specific studies had been performed to investigate the awareness of women about VDD (73-78).

The results revealed that low levels of knowledge towards VD and poor consumption of VD supplements may have linked to the higher prevalence of VDD⁽⁷⁹⁾.

For example, a qualitative study conducted in Saudi Arabia explored KAP-related VDD (73). This study, which involved a sample of female Saudi students, produced qualitative data through eight in-depth, semi-structured interviews and one focus group. The study investigated KAP through sun exposure, supplementation, and fortification. Participants showed minimal understanding of vitamin D; for instance, they knew it was important for musculoskeletal reasons but had no further information about any other health benefits.

Furthermore, many participants were aware of sun exposure benefits, but they were not really clear about the period of sun exposure, time of day affecting intensity, direct sunlight, and the need to expose specific body parts for the body to create optimal vitamin D.

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The researchers concluded that knowledge of vitamin D was limited amongst Saudi female students, who had limited practices and attitudes toward improving vitamin D states ⁽⁷³⁾.

Habib, Al-Motairi, and Al-Mutairi (2014) carried out a study in Saudi Arabia to explore the knowledge and practices of Saudi women regarding vitamin D and vitamin D deficiency. In that study, researchers used a descriptive design, and the sample consisted of 310 Saudi females around age 20 and above. The results showed that 29% of the participants had accurate knowledge about the importance of vitamin D, but only 19% used vitamin D supplements. Forty-six percent of the participants did not expose themselves to sun daily; however, out of that group 16.6% exposed themselves to the sun for fewer than 10 minutes daily ⁽⁷⁵⁾.

The study indicated that there was a positive connection among information of females and their practices toward improving vitamin D level. In general, lack of awareness about vitamin D deficiency was noted. The conclusion highlighted the need to increase women's information and practice toward vitamin D ⁽⁷⁵⁾.

Also, a study in Australia investigating knowledge of vitamin D within an adult workforce, also found low rates of accurate knowledge of vitamin D, including where it came from and its health benefits ⁽⁷¹⁾.

In this study, only 69% of subjects had heard of vitamin D and of the 69%, less than half correctly identified bone health as a vitamin D health benefit ⁽⁷¹⁾.

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It is important to know about the awareness of the women about the VD and its deficiency as women are at high risk of calcium deficiency due to frequent hormonal changes in their body. If the women had got a VDD, the calcium deficiency would be worse. There are many causes for VDD differing from culture to culture or region to region therefore, it is important to know the knowledge and practices of the women regarding the VDD.

Objectives of the study

- 1) To determine the magnitude of knowledge and practices towards Vitamin D deficiency among women.
- 2) To identify the socio-demographic factors associated with knowledge and practices.



Chapter Two

Subject and Methods

Chapter Two SUBJECTS AND MEHTHOD

Study design, setting and time:

A cross sectional study was carried out at consulting clinics of Imam Hussein Medical City in Karbala. Data collection done between 2nd March and 30th June _2018.

Sampling method:

A purposive sample of 442 women was approached (clients and companion of clients) who attended consulting clinics of Imam Hussein Medical City in Karbala.

Data collection procedure:

Data was collected through a direct interview with women; the time needed for each interview was between 5 and 15 minutes. Data collection takes about three hours per day, three days weekly from 10:00 AM to 1:00 PM.

Inclusion Criteria:

The inclusion criteria include: females aged 18 years old and over who were not previously diagnosed with VDD and agree to participate.

Exclusion criteria:

Very ill and mentally retarded women.

Women who were previously diagnosed with VDD assumed to have a high knowledge concerning VDD that's why the exclusion of them was done and this would shift the findings into a biased higher knowledge and practice regarding VD and its deficiency. Subjects who had a previous diagnosis of VDD were also excluded in the studies by (Salmanpour et al. 2016) and (Alemu and Varnam 2012) (46, 72).

Ethical consideration

1. Study protocol was approved by the ethical committee in Kerbala University /Collage of medicine.
2. Written agreement was obtained from Karbala health directorate.
3. Verbal consents were obtained from the women prior to interviewing, after explaining the objectives of the study.

Questionnaire form:

A specially designed questionnaire (appendix) has been prepared; it was partially adapted from previous studies that assessing the knowledge and practices regarding VDD (6, 46, 72, 75, 78, 80, 81). It was in English form then translated to Arabic one. It has been evaluated by two specialists in community medicine and internal medicine.

The questionnaire consisted of 3 parts.

The first part contains the socio-demographic data like age, marital status, residency, educational level and occupation.

The second part of the questionnaire consists of 8 knowledge related questions (mostly multiple choices questions) that included: the presence of knowledge about VD or not, if they had no knowledge, they would leave the questionnaire and their level of knowledge would be considered as poor.

Then the other questions had been continued with those who had knowledge about VD by asking them about other information like: source of their knowledge, main source of VD, food sources-rich in VD, its importance, its relation to calcium, problems associated with VDD and factors linked to its deficiency.

Chapter Two

SUBJECTS AND MEHTHOD

The third part was about practices related to VDD (4 close ended questions; yes or no). The first question was about daily sun exposure; if yes: they would be continued to answer the duration of exposure and body parts that exposed to sun, but if the answer was no; they would be asked about the reasons for not being exposed to sunlight. Other questions were about the inclusion of VD rich foods to meals, the usage of sunscreen, and usual intake of VD supplements)

Pilot study

The clearance and time needed to complete the questionnaire was assessing by a pilot study, the study was involved 30 women and the questionnaire was clear with some modification. It's not involved in the analysis of data.

Knowledge score calculation.

Questions 3-8 were used to calculate the knowledge score. As each question investigates different aspects of VD, all eight questions included in the knowledge score were weighted equally. Each question was worth one and half (1.5) point.

Questions 4, 5, 7 and 8 had multiple correct responses; so their point Calculated using the above mentioned method. The total number of right responses for question 4, 5, 7 and 8 are 3, 3, 5, and 3 respectively.

Questions 3 and 6 were simply marked as (1.5 point) for the correct response and 0 point for the incorrect or "I don't know" response. The total points scored for questions 3-8 were added together to get a total knowledge score.

Chapter Two
SUBJECTS AND MEHTHOD

For a maximum score of 9 points (100%), and the total knowledge score was calculated as:

$$\frac{\text{subject's knowledge score}}{\text{maximum knowledge score}(9)} \times 100\%$$

If a subject got 4.5 points of corrected responses, their knowledge level would be 50% ($4.5 / 9 \times 100\%$). Questions that included multiple correct answers, each of the correct responses was worth a part of the overall point; for example: if the question included three correct responses, each correct response would worth 0.5 ($1.5/ 3$) points.

Incorrect and “I don’t know” responses were given zero.

Levels of knowledge were Classify into 3 groups:

Poor knowledge: 0 - 49%, fair knowledge: 50 - 69% and good knowledge: 70 - 100%.

Practice score calculation:

All four practice questions were included in the practice score and were weighted equally; where given one point for the right health practice towards VD and 0 point to the wrong one. Each question was worth 1 point, for a maximum score of 4 points (100%). So the total practice score was calculated as:

$$\frac{\text{subject's practice score}}{\text{maximum practice score}(4)} \times 100\%$$

Levels of practice were Classify into 3 groups:

Poor practice: 0 - 49%, Fair practice: 50 - 69% and good practice: 70 - 100%.

Chapter Two SUBJECTS AND MEHTHOD

Statistical Analysis

Statistical Package for social sciences version 20 (SPSS v.20) was used for data input and analysis.

Continuous variables presented as means and discrete variables presented as numbers and percentages. T test, ANOVA were used to test the significance of observation variation in mean scores. Correlation was analyzed using Pearson correlation coefficient. The statistical methods were verified, assuming a significance level of $p < 0.05$ and a highly significant level of $p < 0.001$.



Chapter Three

Results

A total of 442 women aged 18 years and above were approached and 430 (97%) of them participated (The response rate). Fifty-eight (13.5 %) were excluded because they have a previous diagnosis of VDD, leaving 372 (86.5 %) responses for analysis as shown in table 3.

Table 3 Participant categories

| Details | Number(Percentage) | Remarks |
|-------------------------------|--------------------|----------|
| Total women approached | 442 (100%) | |
| Agree to participate | 430 (97%) | |
| Previously Diagnosed with VDD | 58 (13.5%) | Excluded |
| Non diagnosed with VDD | 372 (86.5%) | included |

- The minimal age of the participants was 18 years old, maximum age was 71 years old and the mean age was 41.16 years \pm 13.15years. The majority of the participants had an aged range of 36-55.
- Most of the participants (81.5%) were housewives, small percent of them (16.1%) were employee and 28% of them had been completed primary level. Other characteristics are shown in table 4.

Table 4 General characteristics of participants.

| Variables | Categories | Number (N = 372) | Percent |
|------------------|-----------------------------|------------------------------|----------------|
| Age (year) | 18-35 | 118 | 31.7 |
| | 36-55 | 178 | 47.8 |
| | Older than 55 | 76 | 20.4 |
| Marital status | Single | 43 | 11.6 |
| | Married | 280 | 75.3 |
| | Divorced | 14 | 3.8 |
| | Widow | 35 | 9.4 |
| Education | Not read and write | 103 | 25.0 |
| | Read And Write | 27 | 6.5 |
| | Primary | 112 | 28.0 |
| | Secondary | 63 | 18.5 |
| | Institute/College Or Higher | 67 | 22.0 |
| Occupation | Student | 6 | 1.6 |
| | House Wife | 303 | 81.5 |
| | Employee | 60 | 16.1 |
| | Retired | 3 | 0.8 |
| Residential Area | Urban | 308 | 82.8 |
| | Rural | 64 | 17.2 |

Knowledge about VD

One hundred-sixty-eight participants (45.2%) had heard about VD, leaving 204 (54.8%) who had never heard about it prior to completing the questionnaire. As shown in fig.2

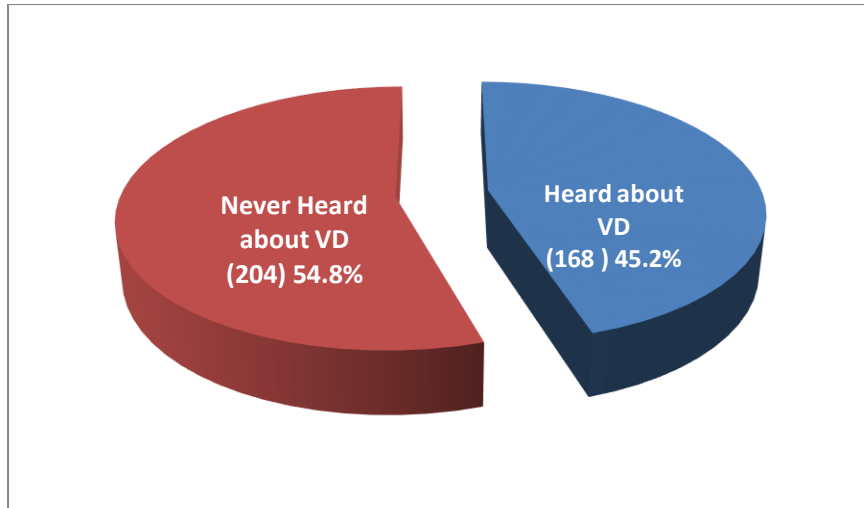


Fig.2 Participants’ knowledge about vitamin D.

The source of knowledge:

The top two sources of participants’ knowledge were: friends / relatives followed by Health care provider. Others are shown in table 5.

Table 5. Frequency distribution of the source of information of the subjects about VD

| Source of information | Frequency | Percent |
|--------------------------|-----------|---------|
| Friends / Family members | 64 | 38 |
| Health Care Provider | 45 | 26.8 |
| School / University | 31 | 18.5 |
| Media | 28 | 16.7 |
| Total | 168 | 100.0 |

Knowledge about the main source of VD:

Sun was the most (72.6 %) source of VD that reported by the participants.

As shown in table 6

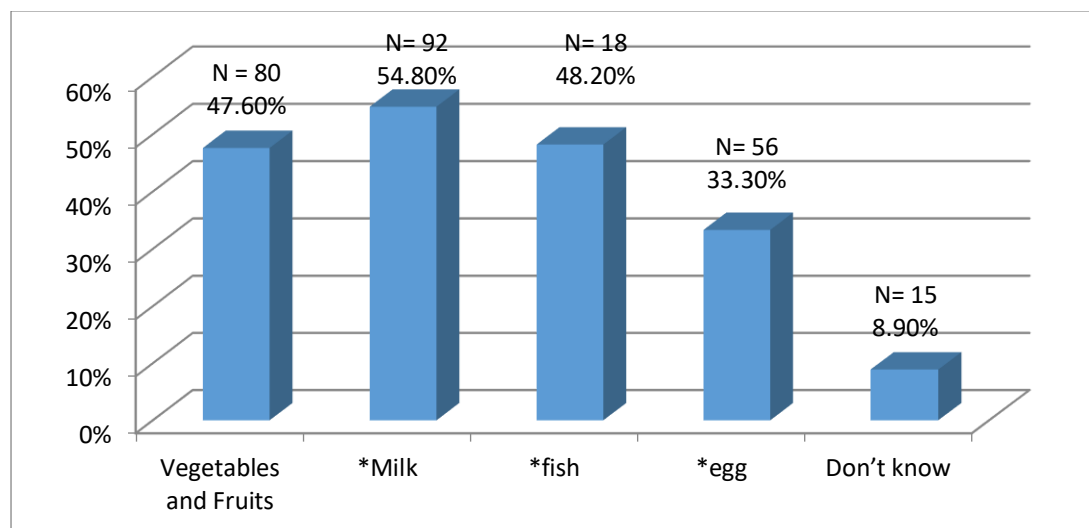
Table 6. Participants’ response to the main source of VD

| main source of VD | Frequency | Percent |
|----------------------|------------|-------------|
| Food that rich in VD | 31 | 18.5 |
| *Sun | 122 | 72.6 |
| Air | 7 | 4.1 |
| Don’t Know | 8 | 4.8 |
| Total | 168 | 100.0 |

asterisk (*) means the right response// Participant must choose only one option (N=168)

Knowledge about food sources that contain VD:

The top 3 food sources that identified by the participants were: milk (54.8%), fish (48.2%) then vegetables and fruits (47.6%) as shown in figure 3



asterisk (*) means the right response

Figure 3 Knowledge about food sources that contain VD (N=168)

Knowledge about the importance of VD:

One hundred twenty eight (76.2%) percent of the responses was for “Strengthens bones” followed by 53% for “Prevention of rickets” and 29.2% for “Improves the immune system of the body”. Others are shown in figure 4

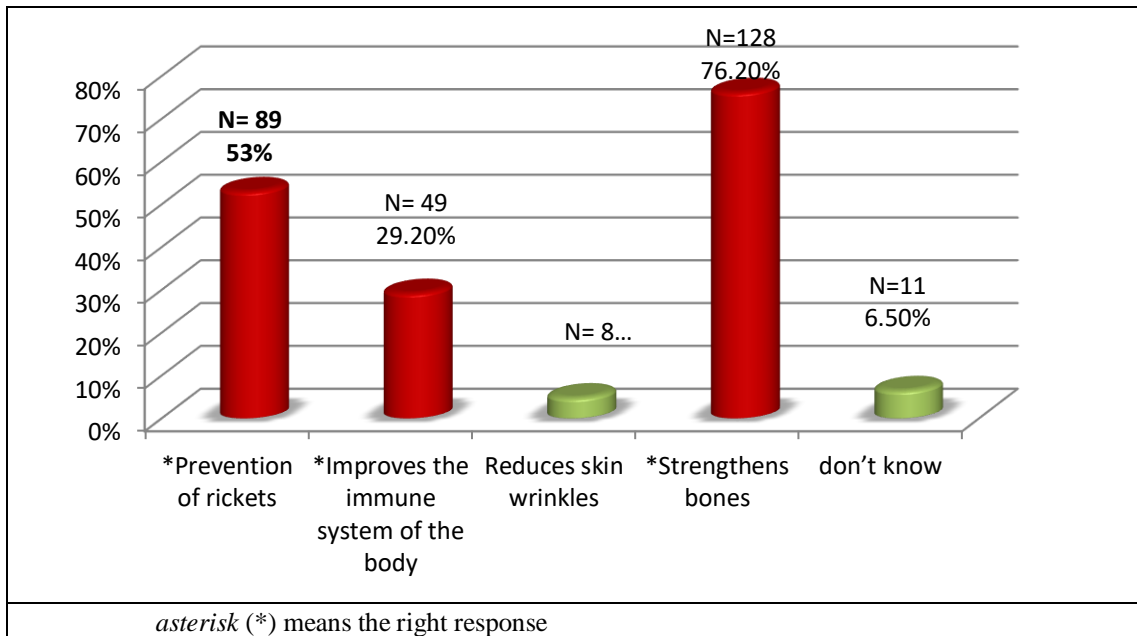


Figure 4 Participants’ knowledge about the importance of VD (N=168)

Knowledge about the relationship between VD and calcium:

Seventy eight (46.4%) of the subjects were knew that there is a relation between VD and calcium as shown in Figure 5.

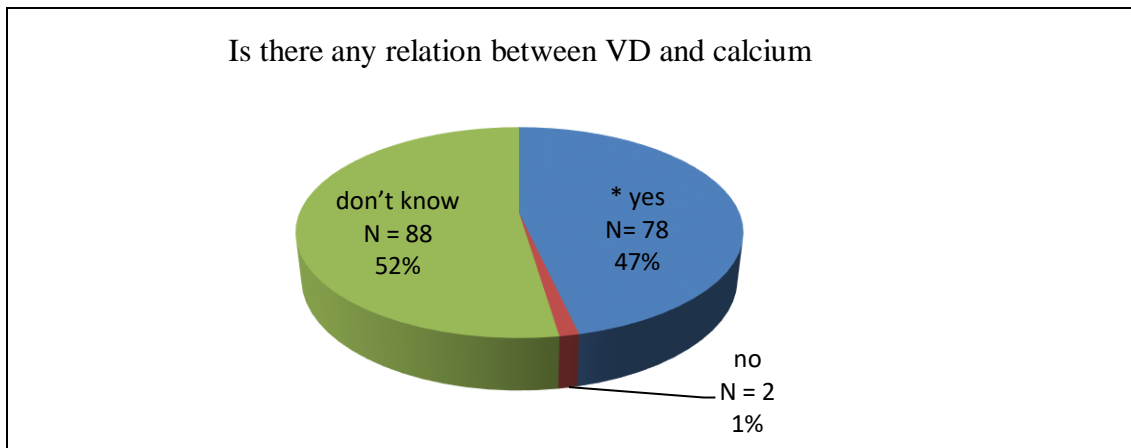
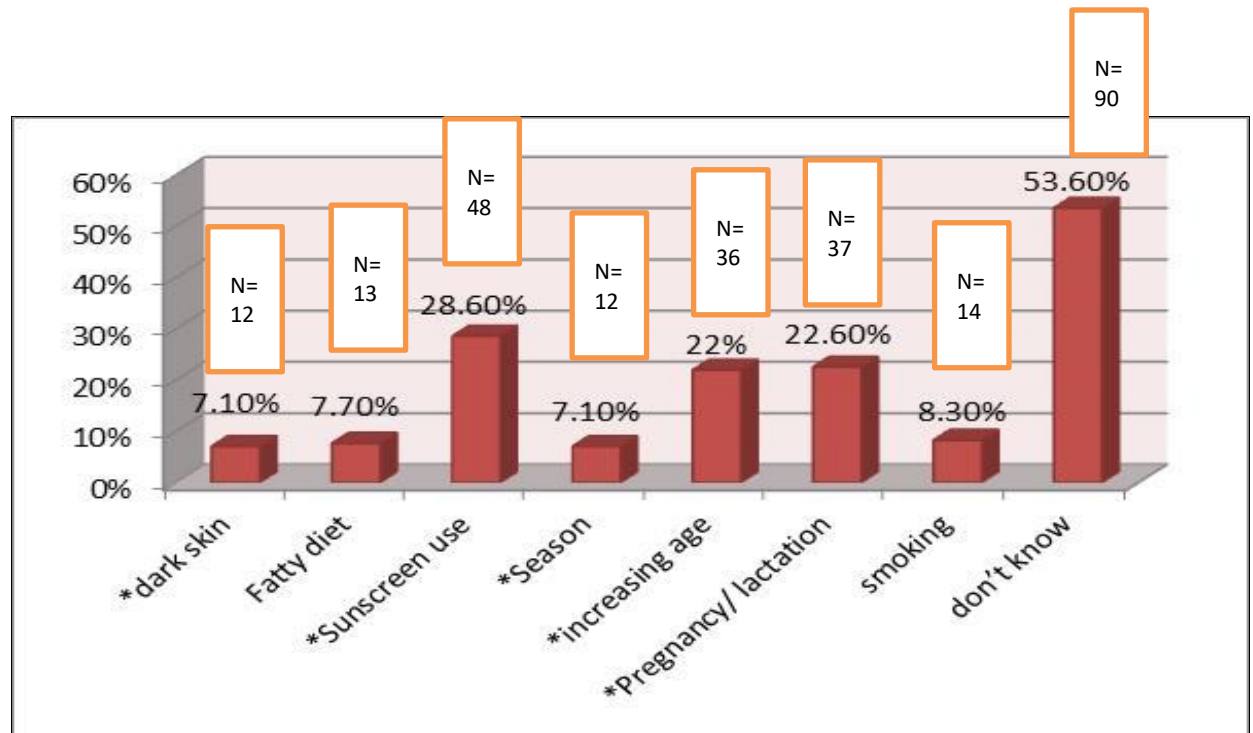


Figure 5 Participants’ knowledge about the relationship between VD and calcium. (N=168)

Knowledge on factors affecting VD:

Most (53.6%) of the participants were unaware about factors that can decrease the amount of VD in the body .Other responses are shown in 6

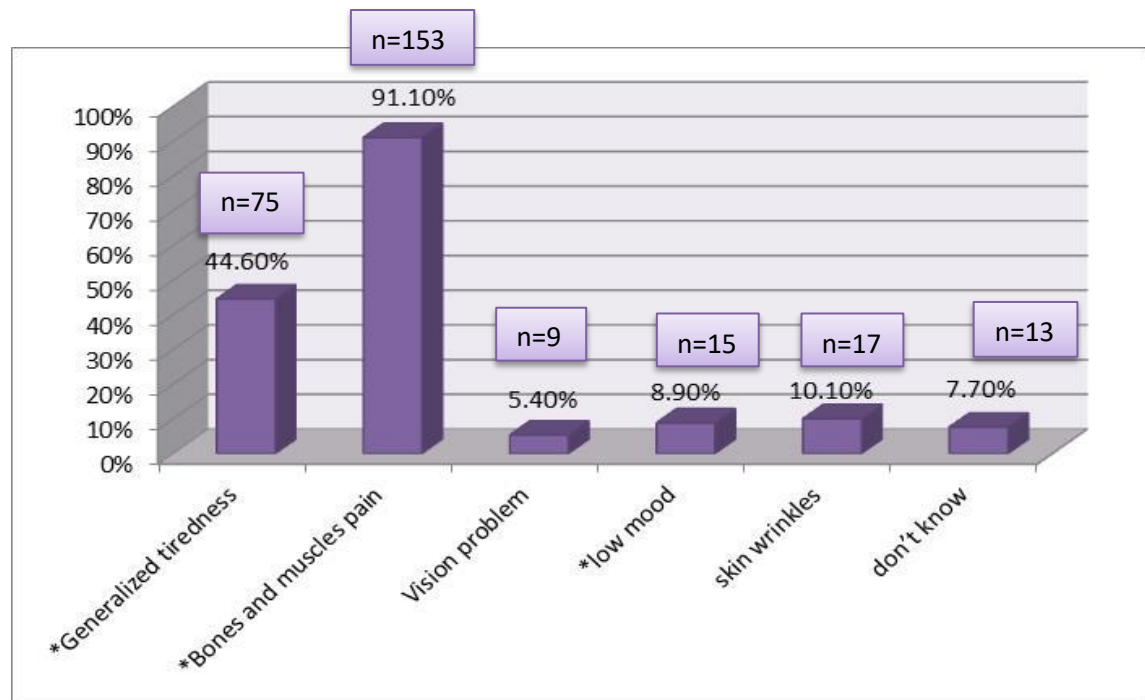


(asterisk (*) means the right response)

Figure 6 Participants’ knowledge about factors that decrease the amount of VD in the body (N=168)

Knowledge about the problems associated with VDD:

The percentages of the corrected answers were as follows: 91.1% for "bones and muscles pain" followed by 44.6% for "generalized tiredness" and 8.9 % was for "low mood". Other responses are shown in figure 7



(asterisk (*) means the right response)

Figure 7 Participants’ knowledge about the problems associated with VDD (N=168)

Knowledge scoring:

- The mean score for the participants’ knowledge about VDD was 4.25 out of 9.0 (47.16%)
- Thirty Two (19%) of the subjects had a good level of knowledge as shown in figure 8

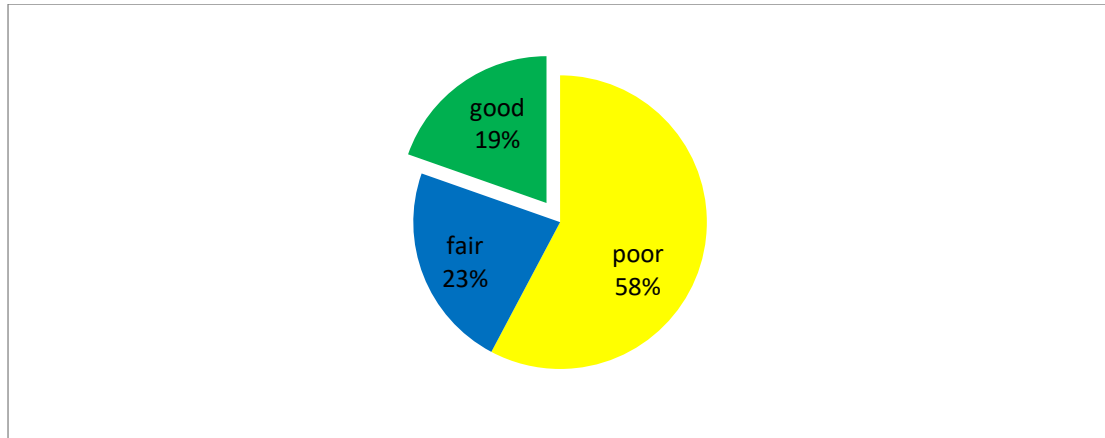


Figure 8 Frequency distribution of total knowledge score. (N=168)

- The knowledge score is affected by level of education (those who completed Institute/college or higher having the higher knowledge score),there was a significant statistical association between them (P value < 0.05) as shown in Table 7

Table 7 The association between socio-demographic factors and knowledge score

| Variable | Categories | Numbers (N=168) | Mean \pm SD | P value |
|-------------------|------------------------------|--------------------|--------------------|---------|
| Age | 18-35 | 58 | 3.7 (\pm 1.9) | 0.097* |
| | 36-55 | 92 | 4.5 (\pm 2.2) | |
| | older than 55 | 18 | 4.2 (\pm 1.0) | |
| Educational level | Not read and write | 12 | 2.625 (\pm 1.2) | 0.0001* |
| | Primary | 37 | 3.538 (\pm 1.3) | |
| | Secondary | 52 | 4.2(\pm 2.1) | |
| | Institute/ college or higher | 67 | 4.9 (\pm 2.1) | |
| Occupation | Student | 6 | 3.667 (\pm 1.8) | 0.259* |
| | Housewife | 103 | 4.050 (\pm 1.8) | |
| | Employee | 56 | 4.604 (\pm 2.3) | |
| | Retired | 3 | 5.400(\pm 1.2) | |
| Marital status | single | 26 | 3.3 (\pm 2.3) | 0.060* |
| | married | 131 | 4.375 (\pm 1.9) | |
| | Divorced | 6 | 5.5 (\pm 1.9) | |
| | Widow | 5 | 4.0 (\pm 1.8) | |
| Residency | Urban | 158 | 4.3 (\pm 2.0) | 0.007** |
| | Rural | 10 | 2.5 (\pm 1.7) | |

*ANOVA test ** Student T test

Significant p value < 0.05.

Practice analysis:

Eighty one (48.2%) of the participants had a regular sun exposure. One hundred forty four of the participants (85.7%) had been included foods rich in VD to their meal. Few numbers (8.9%) were usually used sunscreen. Thirty seven (22%) were usually taken VD supplements as shown in table 8

Table 8 participants' Practices toward VDD

| practices' questions | Frequency (N= 168) | Percent |
|---|-------------------------|--------------|
| Do you expose to sun light, Regularly? | *Yes:81 No :87 | 48.2 51.8 |
| Do you include foods that contain VD such as milk, fish or eggs in your meal? | *Yes:144 No :24 | 85.7 14.3 |
| Do you usually use sunscreen? | Yes:15 *No :153 | 8.9 91.1 |
| Do you usually take over-the-counter VD supplements? | *Yes:37 No :131 | 22 78 |

asterisk () means the right response*

Duration of daily sun exposure of the participants:

The more (51.9%) reported duration of sun exposure was 10 - 20 min. Others are shown in table 9

Table 9 Duration of sun exposure of the participants

| Duration of sun exposure | Frequency(N= 81) | Percent |
|--------------------------|-------------------|---------|
| < 10 min | 7 | 8.6 |
| 10 - 20 min | 42 | 51.9 |
| > 20 min | 25 | 30.9 |
| Unknown | 7 | 8.6 |

Distribution of the participants according to body parts that exposed to the sun:

Face and hands were the most parts that had been exposed to sun by the participants as shown in figure 9

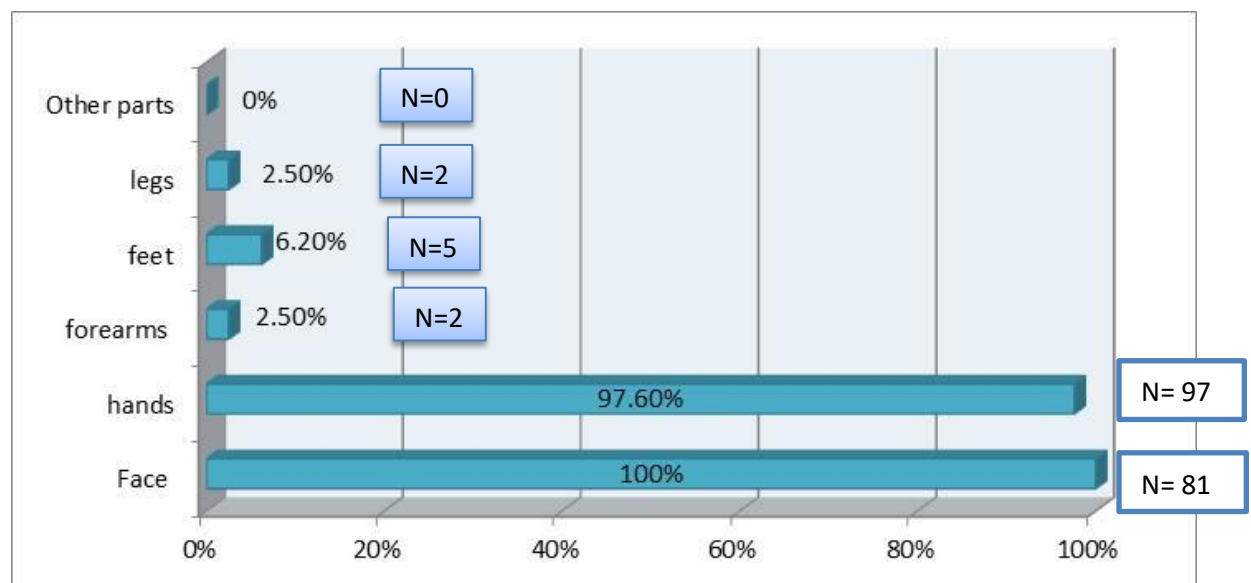


Figure 9 Distribution of the participants according to body parts that exposed to the sun. (N=81)

The reason for being not exposed to sunlight:

The main reasons that were reported in our study were hot weather & indoor life style as shown in figure 10

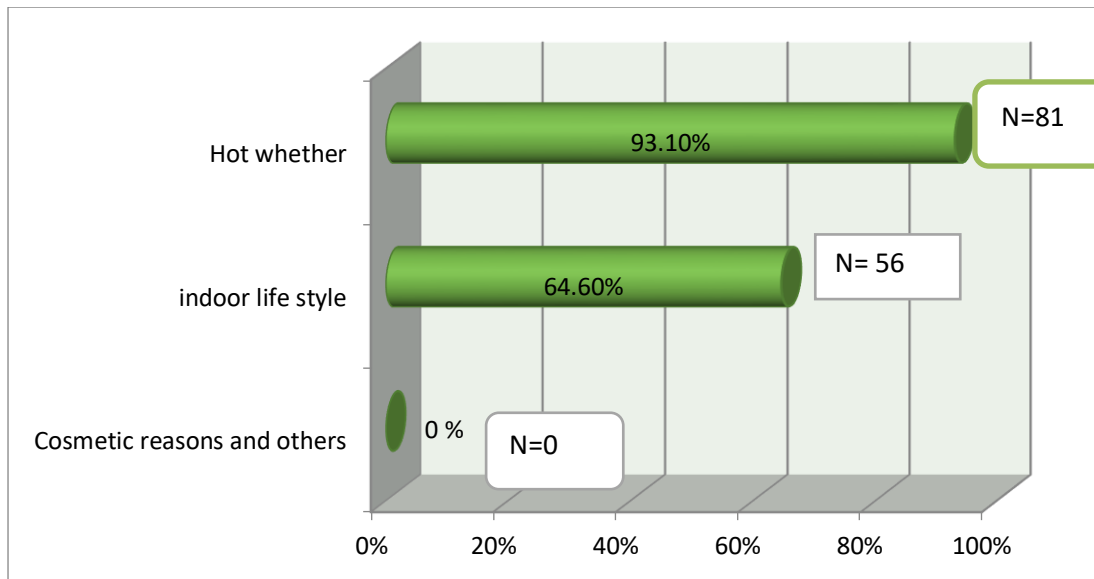


Figure10 the reasons for being not exposed to sunlight (N=87)

Practice scoring

- The mean score for the participants’ practice about VDD was 2.47 out of 4 (61.57%)
- Eighty six (51.2%) of the subjects had a good level of practice as shown in figure 11.

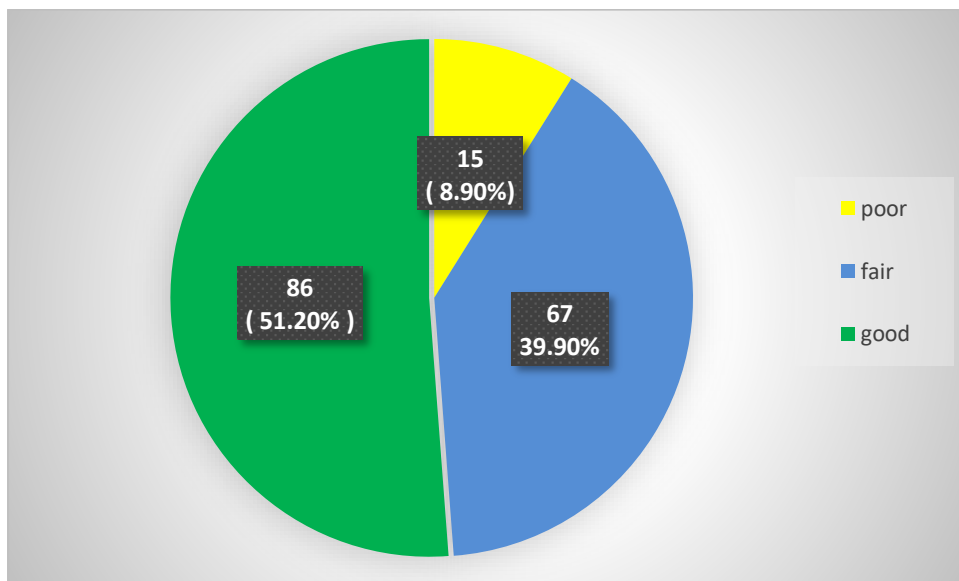


Figure 11 Frequency distribution of total practice score.

Chapter Three / Results

- There is no statistical association between age, education, marital status or occupation and the mean practice score (P value >0.05) as shown in table 10.

Table 10 the association between socio-demographic factors and practice score

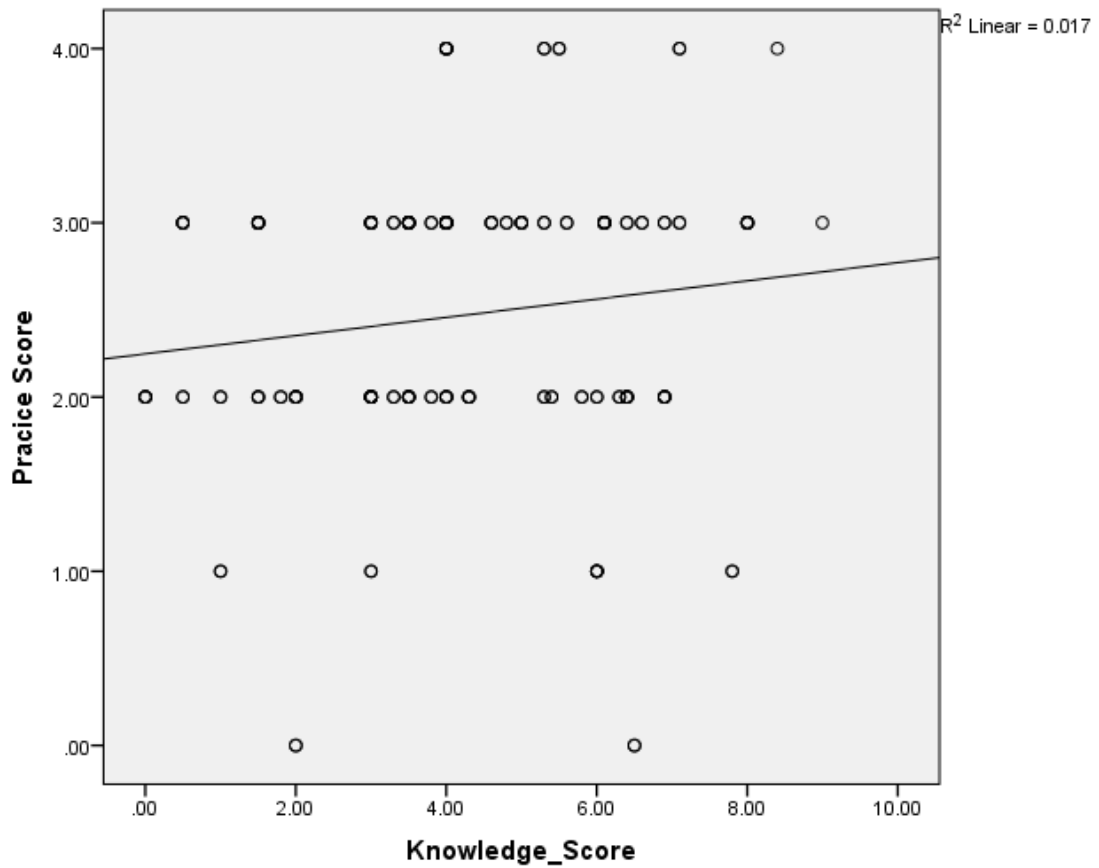
| Variable | Categories | Numbers (N=168) | Mean \pm SD | P value |
|-------------------|-----------------------------|-----------------|---------------------|---------|
| Age | 18-35 | 58 | 2.3 (\pm 0.83) | 0.34* |
| | 36-55 | 92 | 2.5 (\pm 0.38) | |
| | Older than 55 | 18 | 2.3 (\pm 0.70) | |
| Educational level | Not read and write | 12 | 2.1 (\pm 0.71) | 0.50 * |
| | Primary | 37 | 2.4 (\pm 0.76) | |
| | Secondary | 52 | 2.4 (\pm 0.87) | |
| | Institute/college or higher | 67 | 2.5 (\pm 0.80) | |
| Occupation | Student | 6 | 2.0 (\pm 0.89) | 0.380* |
| | Housewife | 103 | 2.4 (\pm 0.75) | |
| | Employee | 56 | 2.5 (\pm 0.93) | |
| | Retired | 3 | 3.0 (\pm 0.0001) | |
| Marital status | Single | 26 | 2.4 (\pm 0.80) | 0.49* |
| | Married | 131 | 2.2 (\pm 0.71) | |
| | Divorced | 6 | 2.3 (\pm 0.87) | |
| | Widow | 5 | 2.5 (\pm 0.76) | |
| Residency | Urban | 158 | 2.4 (\pm 0.81) | 0.67** |
| | Rural | 10 | 2.8 (\pm 0.78) | |

*ANOVA test ** Student T test

Significant p value < 0.05.

Chapter Three / Results

Figure 12 showed the correlation between total knowledge score and total practice score. There was a weak positive association between the total knowledge score and the total practice score ($r = 0.13$) without statistical significance ($P = 0.08$)



$P = 0.08$

Pearson Correlation (r) = 0.13

Fig. 12 Correlation between total Knowledge Score, and total Practice Score.



Chapter Four

Discussion

Vitamin D is a very important element for women's health⁽⁸²⁾. The effective health education programs are partly depended on knowledge and practices of individuals within the community⁽⁸³⁾. Health education of young people is important to increase good health behaviors that continue throughout and protect from the development and progression of disease later in life ⁽⁸⁴⁾. Keeping proper bone health is important in middle and old age women, especially in reducing the risk of osteoporosis ⁽⁷⁴⁾. Our study provides a comprehensive view regarding the recent knowledge and practices towards VD among women attending the consulting clinics of Imam Hussein Medical City in holy Karbala.

Unfortunately, less than half of the subjects (45.2%) in the current study (who were not diagnosed with VDD) were learnt or heard about VD. Leaving 54.8% of the subjects who were not heard or learnt about it before completing the questionnaire.

While in studies performed in United Arab Emirates, Australia and Manchester about one third of the subjects were not heard or learnt about VD (37%, 31% and 28% respectively) ^(46, 71, 72).

Our findings were nearly in line with the results by Oudshoorn et al. (2011) study, who studied the association between knowledge, VD status and dietary calcium intake in older people (mostly were females) in the Netherlands. It was found that 38% of the subjects had heard about VD ⁽⁸⁵⁾.

The differences from the above mentioned studies may be attributed to different sample's characteristics and different cultures of the participants. Also a novelty of this subject may be attributed to these results and the awareness could be increased in the future.

The first source to provide knowledge towards VD identified by the study subjects was friends and relatives.

This result was differed from the result by Habib et al (2014) study in Saudi Arabia who studied: knowledge and practice of VDD among adult Saudi females, he found that the most popular source of knowledge was doctors⁽⁸⁶⁾. While media was the main source of knowledge by Zhou et al.(2016)study in Nanjing, China who studied: KAP regarding VD among university students ⁽⁸⁷⁾.

While health care providers were not reported as a most popular source of knowledge in this study, which can be contributed to their inadequate knowledge of VDD or they may not take up their proper role to provide health education.

Interestingly, most (72.6%) of the subjects had been identified the sun as a main source of VD like what was reported by Arora et al.2016 study, who studied knowledge and practices of VD and attitude regarding sun among indian students⁽⁶⁾. While a small percent of the subjects were identified the sun as a main source of VD in Salmanpour et al. 2016 study, who studied knowledge and practices regarding VDD among the adult population in Sharjah, United Arab Emirates ⁽⁴⁶⁾.

Our result indicates that the subjects had a good knowledge about the importance of sunlight as a source of VD. This could be a part of their previous information that the sun exposure is a treatment of weak bones.

A higher percent of the subjects (54.8%) were identified milk as good food sources of VD followed by fish (48.2%) then egg (33.3%). These results were in line with the findings by Babelghaith et al. 2017 study, who studied knowledge and practice of VDD among people in Saudi Arabia⁽⁸⁸⁾.

A good knowledge by the subjects regarding milk as a good food sources of VD more than fish and egg may be attributed to their previous information about dairy products and its importance in bone health while little knowledge about fish and egg.

On the other hand a large percent (47.6%) of the subjects had been identified incorrect food sources of VD (vegetables and fruits). This result was higher than a similar study of premenopausal women in Jeddah 2016⁽⁸⁹⁾.

This result may belong to the inappropriate concept of the subjects that vegetables and fruits generally contains most of the important nutrients and minerals that may cause them to relinquish the actual food resources of VD. Strict vegetarian person has risk of VDD⁽⁹⁰⁾.

With regards to the importance of VD, most of the participants had knowledge about its role in bone health while a small percent were aware of its role in improving immune health.

Our findings were better than what were mentioned in the studies by Salmanpour et al 2016 and Kavitha 2015^(46, 80).

Subjects in the current study were less knowledgeable regarding the relationship between VD and calcium than those in Khan et al 2017 study (78), perhaps due to different sampling techniques as in the later study, the subjects were university students and might had a better nutritional knowledge than the current subjects.

A large percent (53.6%) of the subjects in the current study were unaware about the factors that affect VD level. Also a high percent(65%) of the subjects in Kavitha et al 2015 study were didn't know about the factors that affect VD level (80).

This result was expected might be due to limited studies about factors that affect VD level and it is difficult to be concluded (91).

A considerable knowledge regarding the problems associated with VDD was existed among the subjects while a small percent of them were unaware about these problems. This result was differed from the result by Habib et al 2014 study (75).

The mean knowledge score percentage of the study subjects towards VDD was suboptimal (47.16%). It was affected by levels of education (those who had completed Institute/college or higher were found to have the higher knowledge score), there was a significant statistical association between them (P value < 0.05).

The direct correlation between the education and VD knowledge in this study is not surprising, as it was identified by other previous studies (46, 83). These findings were consistent with the results by Salmanpour et al. study 2016 (46).

The mean knowledge score of urban participants was more than that in rural participants, there was a significant statistical association between them (P value < 0.05). A cultural variation may contribute to this difference.

Although a large percent of the subjects had identified the sun as a main source of VD, Less than half (48.2%) had an average daily exposure to sunlight. While 51.8% of them did not expose to sunlight daily. These findings were similar to the previous finding in Habib et al. 2014 and Babelghaith et al. 2017 studies ^(75, 88).

Regarding to those who had no regular sun exposure; the main reasons that were reported in this study: hot weather & indoor life style. These results were similar to the results by Salmanpour et al. 2016 ⁽⁴⁶⁾. Indoor lifestyle is a major predisposing factor for VDD in adults and children in most of the Middle East countries ⁽⁹²⁾.

More than half (51.9%) of the subjects (who had a regular sun exposure) exposed to sunlight at a period between 10 to 20 minutes per day. Our findings were differed from the results by Habib et al. 2014 study ⁽⁷⁵⁾.

Although, the duration for sun exposure to get enough VD varies depending on time of day, skin type, season and altitude ⁽⁹³⁾, there is an evidence about the recommended time for VD production without skin burn; 10 to 30 minutes in the sun at time between 11:00 a.m. and 3:00 p.m. without usage of sunblock, on average three-five times per week at appropriate season ⁽³⁷⁾.

Regarding body parts that exposed to the sun, the face and hands were the most exposed parts by the study subjects, while little percent of them exposing their long bones to the sun. These findings were similar to the results by Salmanpour et al. 2016 study ⁽⁴⁶⁾.

Religious rules related to the type of clothing worn and cultural norms can be attributed to that behavior in our society.

A study done in Jeddah, Saudi Arabia showed that fully veiled females had lower VD status than partly veiled or unveiled girls ⁽⁹⁴⁾.

Majority (85.7%) of the study subjects include VD rich foods such as milk, fish or eggs to their meals, similar findings in Alemu and Varnam 2012 study ⁽⁷²⁾.

Most (91.1%) of the study subjects did not use sunscreen, similar findings in Ho-Pham and Nguyen 2012 and Kung and Lee 2006 studies ^(74, 83). While in the studies by Khan et al.2017 and Habib et al. 2014 nearly half of the participants were used sunscreen ^(75, 78). This result might be attributed to the cost of the sunscreen or poor knowledge about sunscreen as a protective method against adverse effects of sun exposure.

Sunscreen products prevent the absorption of UV-B rays by the skin and consequently prevent the production of VD ⁽⁸⁷⁾.

Sunscreen is one of the preferred ways to protect the skin from the adverse effects of sunlight but it is suggested that persons should avoid applying sunscreen when they exposed to midday sun for up to thirty minutes two times per week, in order to maintain adequate amount of VD ⁽⁹⁵⁾.

The present study showed a low percent (22%) of the subjects taking VD supplements. Also a low percent was reported in the studies by Alemu and Varnam 2012 ⁽⁷²⁾. This low percent may be attributed to poor knowledge about the importance of supplementation in improving VD level.

As its difficult to achieve the adequate amount VD from sunlight in those who had limited sun exposure and few foods are rich in VD, The best way to get enough amount VD is through supplementation ⁽¹⁸⁾.

National institute of health (NIH) recommends VD supplements to meet the daily requirement of VD for household individuals, females who wear long dress and head coverings for religious purposes, and individuals with occupations that limit sun exposure⁽⁹⁶⁾.

In the present study, the mean practice score percent of the participants towards VDD was 61.75% and had no effect on sociodemographic data. A small percent (19 %) of the subjects had good level of knowledge while 51.2% had a good level of practices regarding VD with weak direct correlation between knowledge and practice scores. However, putting into consideration lack of their knowledge towards VDD, it is difficult to determine with certainty whether the participants' responses reflect what they actually practice also the design of the questionnaire was in general not in details related to a practices towards VDD and the exposure hours were not included in the analysis of practice score.

Limitation of study:

Limitations in this study were that the data was collected from hospital due to easily accessibility, it was not a community based study, and however the sample taken could reflect the results to community.

In addition, this study did not include other participants who were previously diagnosed with VDD to assess their knowledge and practices towards VDD.

The practice questions might not reflect the actual behaviors towards VDD as it were in general not in details.

Chapter Four / Discussion

Chapter Five

Conclusions

and

Recommendations

Conclusions

- A small percent of the subjects (less than half) had heard about VD and their source of information were from family members and friends rather than health care provider.
- Over all knowledge was suboptimal while a fair level of practices regarding VDD.
- A small percent of the subjects had good level of knowledge while half of them had a good level of practices regarding VD with weak direct correlation between knowledge and practice scores.

Recommendations

- Public health educational material should be held for women to increase the awareness about vitamin D and sun exposure which can be achieved by handout scientific leaflets that include simple information about VD, VDD and the importance of checking VD level.
- In absence of adequate sun exposure, we suggest to encourage people for inclusion of rich sources of VD in the diet or taking VD supplement to achieve adequate level of VD.
- Further studies about the awareness of VDD among health care providers are recommended to be implicated in the future planning of health promotion about VDD in primary health care services so we suggest raising the awareness of healthcare providers on the importance of VD and its impact on different aspects of patients' life taking in consideration the risk groups.



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Appendix

Appendix

(Questionnaire)

Knowledge and Practices Regarding Vitamin D Deficiency among Women Attending Imam Hussein Medical City in Kerbala in 2018.

Serial number: _____

Part one / Demographic Data

Age: _____

Marital status: Single Married Divorced widow

Resident area: urban rural

Education level: Not read and write read and write Primary
secondary Institute/ college or higher

Occupation: student house wife employee retired
business owner

Part II / Knowledge related questions:

1. Have you ever heard or learnt about vitamin D?

Yes No

2. From where did you hear or learn about vitamin D?

Friends / Family member's Health care provider school /
university media others (specify)

3. What is the main source of vitamin D? (Choose one option only)

Food that rich in vitamin D *Sun Air water

I don't know

4. Which types of foods is a good source of VD? (Tick all that apply)

Vegetables & Fruits *Milk *fish *Eggs

I don't know

5. What is the importance of vitamin D? (Tick all that apply)

*prevention of rickets *Improves the immune system of the body

Reduces skin wrinkles *Strengthens bones I don't know

6. Is there any relation between vitamin D and calcium?

*Yes No I don't know

Appendix

7. Which of the following factors can decrease the amount of vitamin D in the body: (Tick all that apply)

*dark skin Fatty diet *Sunscreen use *Season
*increasing age *Pregnancy/ lactation smoking I don't know

8. Which of the following problems can be due to vitamin D deficiency? (You can choose more than one option)

*Generalized tiredness *Bone and muscle pains Vision problem
*low mood skin wrinkles I don't know

Part III / Practices towards vitamin D:

1. Do you expose to sun light, regularly? *yes No

A- If your answer was yes:

1-Duration of exposure to sunlight daily _____ minutes, I don't know

2- Which parts of your body get exposed to the sun? (Tick all that apply)

Face hands hands and forearms feet

Feet and legs others (Specify):

B -If your answer was no: mention the reason from the followings:

1. Indoor life style

2. Hot weather

4. Cosmetic reasons

5. Others (Specify):

2. Do you include vitamin D rich foods such as milk, fish or eggs in your meal? *Yes No

3. Do you usually use sun blocks?

Yes *No

4 - Do you usually take over-the-counter vitamin D supplements?

*Yes No

Note. Correct responses are denoted with an asterisk (*)

Appendix

استبيان حول المعرفة والممارسات تجاه نقص فيتامين (د) بين النساء اللاتي يحضرن مدينة الإمام الحسين الطبية في كربلاء لسنة 2018.

.....
التسلسل: _____

الجزء الاول / المعلومات الاجتماعية والديموغرافية

العمر: _____

- الحالة الزوجية: عزباء متزوجة منفصلة ارملة
- التحصيل الدراسي: لاتقرأ ولاتكتب تقرأ وتكتب ابتدائية ثانوية معهد /كلية او اعلى
- السكن: حضر ريف
- الوظيفة: طالبة موظفة ربة بيت متقاعدة مالكة عمل

.....
الجزء الثاني / أسئلة متعلقة بالمعارف:

1. هل سبق لك أن سمعت أو علمت عن فيتامين د؟ نعم لا
2. من أين سمعت أو علمت عن فيتامين (د)؟
الاصدقاء/ الاقارب ملاك طبي او صحي مدرسة / جامعة
وسائل التواصل أخرى (حدد)
3. ما هو المصدر الرئيسي لفيتامين د ؟ (اختر خيار واحد فقط)
الطعام الغني بفيتامين د الشمس الهواء الماء لا أعرف
4. اي نوع من الطعام هو مصدر جيد ب فيتامين د ؟ (ضع علامة ✓ على كل ما ينطبق)
الخضراوات والفواكه الحليب السمك البيض لا أعرف
5. ما اهمية فيتامين د ؟ (ضع علامة ✓ على كل ما ينطبق)
الوقاية من مرض الكساح يحسن الجهاز المناعي في الجسم يقلل من تجاعيد الجلد
يقوي العظام لا أعرف
6. هل توجد علاقة بين فيتامين د والكالسيوم؟ نعم لا لا أعرف

Appendix

7. أي من العوامل التالية يمكن أن تقلل من مستوى فيتامين د في الجسم؟ (ضع علامة √ على كل ما ينطبق):

- البشرة الداكنة الغذاء الدهني استخدام واقي الشمس فصول السنة
تقدم العمر الحمل / الرضاعة التدخين لا أعرف

8. أي من المشاكل التالية يمكن أن تكون نتيجة نقص فيتامين د؟ (ضع علامة √ على كل ما ينطبق)

- التعب العام آلام العظام والعضلات مشاكل البصر
تدني المزاج تجاعيد الجلد لا أعرف

الجزء الثالث / الممارسات نحو فيتامين (د) :

1. هل تتعرض لأشعة الشمس بمعدل يومي؟ نعم لا
أ - إذا كانت الإجابة نعم:
1. مدة التعرض لأشعة الشمس يوميا _____ دقيقة ، لا أعرف
2. أي جزء من جسمك تعرضينه لأشعة الشمس؟ (ضع علامة √ على كل ما ينطبق)
الوجه الكفين الكفين والساعدين القدمين القدمين والساقين
أخرى (حددي):
- ب - إذا كانت الإجابة لا فاذكر السبب مما يلي: (ضع علامة على كل ما ينطبق)
1. نمط الحياة في الأماكن المغلقة
2. الطقس الحار
4. أسباب تجميلية
5. أخرى (حددي):
2. هل تشمل وجباتك الغذائية الأطعمة الغنية ب فيتامين د مثل: الحليب والأسماك أو البيض؟
نعم لا
3. هل أنت معتادة على استخدام واقي الشمس؟ نعم لا
4. هل أنت معتادة على تناول مكملات فيتامين د؟ نعم لا

Appendix

| | | |
|--|---|---|
| <p>Holy Karbala Governorate Karbala Health Directorate Imam Hussain Medical City</p> | <p>جمهورية العراق</p> | <p>محافظة كربلاء المقدسة دائرة صحة كربلاء المقدسة مدينة الإمام الحسين (ع) الطبية شعبة الأمور الإدارية والمالية وحدة إدارة الموارد البشرية</p> |
| <p>العدد / ٢٢١ التاريخ /</p> |  | |
| <p>إلى / دائرة صحة كربلاء المقدسة / مكتب المدير العام / مركز تدريب والتنمية البشرية</p> | | |
| <p>م / تسهيل مهمة</p> | | |
| <p>كتابكم ذي العدد ٤٤٩ فـ ٢٠١٨/٤/١١</p> | | |
| <p>لا مانع لدينا من تسهيل مهمة طالب الدراسات العليا / سارة جعفر فاضل لانجاز بحثها</p> | | |
| <p>على أن يكون المشرف العملي للبحث / رزاق باصبي علي جواد - طبيب اختصاص عظام وكسور على ان لاتتحمل دائرتنا أي نفقات مالية ، للتفضل بالإطلاع مع التقدير .</p> | | |
|  | | |
| <p>الدكتور د. صباح كريم حمزة مدير مدينة الإمام الحسين (ع) الطبية</p> | | |
| <p>د. علاء جلاب مطر المتخصص في الشؤون الإدارية مدير الوحدة الإدارية</p> | | |
| <p>نسخة منه إلى :-</p> | | |
| <ul style="list-style-type: none">• القسم الجراحي / لتبليغ الطبيب• وحدة التدريب والتطوير• وحدة إدارة الموارد البشرية / مع الأوليات | | |
| <p>تسليم الحسنة / التبليغ فاطمة عبيدان حسنا</p> | | |

الخلاصة

الخلفية: نقص فيتامين د هو مشكلة صحية عالمية. يرتبط بشكل كبير مع المشاكل الهيكلية وغير الهيكلية في الجسم. يمكن الوقاية منه بشكل أساسي عن طريق التعرض لأشعة الشمس أو تناول المكملات الفعالة، وبدرجة أقل عن طريق تناول الاغذية.

الهدف من الدراسة: لتحديد مدى المعارف و الممارسات الصحية لنساء كربلاء فيما يتعلق بنقص فيتامين د.

طريقة البحث: تم إجراء دراسة مقطعية على عينة هادفة مكونة من ٤٤٢ امرأة (مراجعته ومرافقة للمراجعة) الذين قد حضروا الى العيادات الاستشارية في مدينة الإمام الحسين (ع) الطبية في كربلاء خلال الفترة بين الثاني من اذار إلى الثلاثين من حزيران ٢٠١٨ من خلال استبيان مقابلة وتم تحليل البيانات باستخدام الإصدار رقم ٢٠ من برنامج الحزم الإحصائية للعلوم الاجتماعية (SPSS).

النتائج: في هذه الدراسة اقل من نصف (٤٥٪) النساء قد سمعن عن فيتامين د، وكان مصدر معلوماتهم من الأقارب والأصدقاء ثم من عنصر طبي. معدل المعرفة كان تقريبا ٤٠,٢٥ من أصل ٩ أي (٤٧٪). تزداد درجة المعرفة مع المستوى التعليمي العالي والسكن في المناطق الحضرية. لا توجد علاقة احصائية مميزة فيما يتعلق بالحالة الزوجية او المهنة او العمر.

وقد كان مستوى الممارسات ٢٠,٤٧ من اصل ٤٠ اي ما يعادل (٦١,٧٥ ٪) . ولا توجد علاقة احصائية مميزة بين معدل الممارسات والعوامل الاجتماعية والديموغرافية.

الاستنتاجات: معدل المعارف كانت دون المستوى الامثل مع وجود مستوى متوسط من الممارسات نحو نقص فيتامين د.



المعارف والممارسات نحو نقص فيتامين د بين النساء في مدينة الإمام الحسين (ع)
الطبية في كربلاء

٢٠١٨

رسالة مقدمة الى مجلس كلية الطب – جامعة كربلاء كجزء من متطلبات نيل شهادة الدبلوم

العالى في طب الأسرة

من قبل

سارة جعفر فاضل

بكالوريوس طب وجراحة عامة

بإشراف

أ.م. د رياض ضيهود الزبيدي

بوردر (دكتوراه) في طب الباطنية

م ٢٠١٨

أ.م. د سعد ابراهيم الغبان

ماجستير طب مجتمع

هـ ١٤٤٠