Republic of Iraq
Ministry of Higher Education
And Scientific Research
Babylon University
College of Nursing

Assessment of Knowledge, Attitudes, and Traditional Preventive Practices of the Mothers toward Vitamin (D) Deficiency among Children in the Middle Euphrates Pediatric Teaching Hospitals.

A Dissertation
Submitted to the Council of College of Nursing, University of Babylon as Partial Fulfillment of the Requirements for the Degree of Philosophy of Doctorate in Nursing Sciences

By
Haidar Fadhil Abbas

Academic Supervisors
Asst. Prof. Dr. Nuhad Mohammed Al Doori. Ph.D.
Asst. Prof. Dr. Imad Hadi Hameed. Ph.D.

Aug, 2021 A.D. Dhul- Hijjah 1443 H.A.

بسم الله الرحمن الرحيم

وَالشَّمْسُ تَجْرِي لِمُسْتَقَرٍّ لَهَا ۚ

ذَٰلِكَ تَقْدِيرُ الْعَزِيزِ الْعَلِيمِ

صدق الله العظيم

الآية ٣٨ سورة يس

Supervisor Certificate

This is to certify that the dissertation entitled: **Assessment of Knowledge, Attitudes, and Traditional Preventive Practices of the Mothers toward Vitamin (D) Deficiency among Children in the Middle Euphrates Pediatric Teaching Hospitals,** submitted by **Haidar Fadhil Abbas** to the University of Babylon, College of Nursing in partial fulfillment of the requirements for the Degree of Doctorate of Philosophy in Nursing. The dissertation work was carried out by the student under my supervision and guidance.

Signature

Asst. Prof. Dr. Nuhad Mohammed Al Doori .Ph.D.

Date: / / 2021

Signature

Asst. Prof. Dr. Imad Hadi Hameed .Ph.D.

Date: / / 2021

Signature

Lecturer Dr. Wafa Ahmed Ameen

Head of Pediatric Health Nursing

College of Nursing / University of Babylon

Date: / / 2021

Committee Certification

We, the members of the Dissertation Discussion Committee, certify that the we have reviewed the dissertation entitled **''Assessment of Knowledge, Attitudes, and Traditional Preventive Practices of the Mothers toward Vitamin (D) Deficiency among Children in the Middle Euphrates Pediatric Teaching Hospitals"** carried out by **Haidar Fadhil Abbas** and examined the student in its contents and what is related to it on / / 2021.

We decided that the dissertation is accepted in partial fulfillment of the requirements for the Degree of Doctorate of Philosophy in Nursing with an estimation of ( ).

Signature
Prof. Dr. Fatima Wanas Khudiar.Ph.D.
Member

Signature
Prof. Dr. Abdulmahdi A.Hasan.Ph.D.
Member

Signature
Prof. Dr. khetam Mutasher Hattab.Ph.D.
Member

Signature
Asst. Prof. Dr. Ahmed Abudallh Abd.Ph.D.
Member

Signature
Chairperson
Prof. Dr. Amean A. Yasir.Ph.D.
Date: / / 2021
Approved by the council of the college of Nursing

Signature
Prof. Dr. Amean A. Yasir.Ph.D.
Dean of Collage of Nursing
Date: / / 2021

Acknowledgments

First of all, I thank God Almighty for completing my thesis. I also extend my thanks and appreciation to the University of Babylon / College of Nursing for the opportunity to study for a doctorate, and thanks go to the Dean of the College of Nursing, **Prof. Dr. Amean A. Yasir.Ph.D.**

Also, my thanks and appreciation to the supervising professors, both **Asst. Prof. Dr. Nuhad Mohammed Al Doori.Ph.D** and **Asst. Prof. Dr. Imad Hadi Hameed.Ph.D** for directorial me through this experience and always guiding me and inspiring me towards the end.

Special thanks to the Head of the Nursing Branch Children's health and its members, and many thanks and gratitude to the experts who contributed to modifying the questions of the questionnaire and showing them in the required form.

I can only express my sincere appreciation and gratitude to the health departments in the Middle Euphrates governors and their hospitals for their assistance and for facilitating my research mission. I also thank the mothers of the children who agreed to allow me to collect data for this project they provided insight into how vitamin D deficiency is assessed, and are candid in the full questionnaire.

Dedication

To

- ***To the soul of my dead father, mother and brother***
- ***To the most beautiful gift from heaven...to the most precious treasures of the world,,,, my family and all my friends***

Haidar

Abstract

A descriptive study design carried out to assess the mother's knowledge , attitudes and traditional practices toward vitamin D deficiency among early childhood in the middle Euphrates teaching pediatric hospitals through the period December 1st , 2020 to April 10th 2021

The study sample includes (586) mothers of children under 5 years selected by using non probability (convenience participants) from 4 teaching hospitals in the Middle Euphrates. The study instrument is a questionnaire composed of 4 parts include: sociodemographic characteristic, knowledge, attitudes, and traditional practices about vitamin D deficiency. The data collected from the respondents by using self-administrative method and interview. Content validity of the instrument was determined by panel of experts, while the reliability of the questionnaire determined by internal consistency reliability (Cronbach´s Alpha reliability), and analyzed electronically by (SPSS V.2020) application.

The study findings indicated that mothers age at mean (28.39) and SD. (5.86) , 63.3% urban resident, 55.5% from extended families, 39.4% of mothers have 2 children, 66% not working, 38.1% primary school education, and 61.6% of them have sufficient to some extent. (99.8%) of mothers had low knowledge, (94.5%) for negative attitudes, & (94%) for low practices about vitamin D deficiency. There is highly

significant relationship between mothers' attitudes and traditional practices at P value 0.00 .

The study concluded that mothers along the Middle Euphrates ; had poor level of knowledge, negative attitudes, and poor practices toward vitamin D deficiency among children .

The study recommendes unlimited importance of pay attention to mothers during and after pregnancy and to their children through using laboratory tests and initiate the educational role in health care centers in order to upsurge mothers information about vitamin D deficiency and it is complication among children as well as explain the methods to prevent and treat vitamin D deficiency .

List of Contents

List of Appendices

List of Tables

List of Figures

List of Abbreviation

Items	Meaning
%	Percent
(25(OH)D)	Major Circulating form of Vit D/25-Hydroxyvitamin D
+ve	Positive level
AAP	American Academy of Pediatrics
AD	Alzheimer's Disease
ADHD	Attention Deficit Hyperactivity Disorder
AF	Atria Fibrillation

AIDS	Acquired Immune Deficiency Syndrome
ASD	Autism Spectrum Disorder
ASS	Assessment
BMD	Bone Mineral Density
CVD	Cardiovascular Disease
d.f	Degree of Freedom
DNA	Deoxyribo Nucleic Acid
F	Frequency
GPs	General Practitioners'
H	High level
hCAP18	Human Cathelicidin Antimicrobial Peptide
HIV	Human Immune Viral Deficiency
IL-2	Interleukin-2
INFγ	Gamma Interferon
IOM	Institute of Medicine
IU	International Unit
KAP	knowledge, Attitude, and Practice
KDOQL	Kidney Disease Outcomes Quality Initiative
KSA	Kingdom of Saudi Arabia
L	low level
LVH	Ventricular Hypertrophy
M	Moderate level
MESA	Multi-Ethnic Study of Atherosclerosis
MRI	Magnetic Resonance Image
NEJM	New England Journal of Medicine
NKC	Natural Killer Cells
PEM	Protein-Energy Malnutrition
PHC	Primary Health Care
PHCC	Primary Health Care Centers
PHCs	Primary Health Centers
PTH	Parathyroid Hormone
RA	Rheumatoid Arthritis
RAS	Renin-Angiotensin System
SD	Standard Deviation
sig.	Significant
SLE	Systemic lupus Erythematosus
SPF	Sun Protection Factor
SPSS	Statistical Package of Social Science
TNF	Tumor Necrosis Factor
URTIs	Upper Respiratory Tract Infection
UV	Ultraviolet
VDD	Vitamin D Deficiency

VDR	Vitamin D Receptors
-ve	Negative level

List of Statistical Symbols

symbols	Meaning
ANOVA	Analysis Of Variance
r	Correlation Coefficient
SD	Stander Deviation
SPSS	Statistical Package of Social Sciences

CHAPTER ONE

INTRODUCTION

Chapter One

Introduction

1.1. Introduction

Vitamin D is a fat-soluble vitamin that plays an important role in bone health which encourages the absorption and metabolism of calcium and phosphorous. Many of the physiologic effects of vitamin D in mineral metabolism and extra-skeletal effects have previously been explored in this extremely active research area. (Abdul, Rasheed, Taha, Abdul, & Rasheed, 2017)

Vitamin D has other important roles in cell differentiation, growth, preventing cancer cells from dividing, preventing cardiovascular disease, and has anti-inflammatory properties. It involves in the regulation of insulin formation and secretion, which suggests a role in blood sugar maintenance and the development of diabetes mellitus (Verkaik-Kloosterman, Seves, & Ocké, 2017).

Besides other significant multiple physiological roles. The primary function is to maintain the homeostasis of calcium and phosphorus that is necessary for proper bone mineralizeatio-n. Therefore, rickets among children, osteomalacia, and osteo-porosis are the most often mentioned effects of its deficiencies. Vitamin D increases the ability of small intestinal epithelial cells to absorb calcium and regulate the absorption of phosphorus from food, and also stimulates the re-absorption of calcium from the glomerul-ar filtrate (Hossein-Nezhad, & Holick, 2013; Christakos, Dhawan, Verstuyf, Verlinden, & Carmeliet, 2016).

More-over benefits of Vitamin D are affects the muscular system by stimulating the proliferation and differentiation of muscle cells. It is lack is also significantly linked to the development of neurodegenerative diseases such as schizophrenia, senile dementia, and multiple sclerosis. Furthermore, the stimulating action of the renin- angiotensin-aldosterone pathway suggests a link between vitamin D deficiency and the development of cardiovascular disorders. (Burt, Mangelsdorf, Stranks, & Mangoni, 2016).

Brain development reflect the action of Vitamin D , which involve the effects on cellular proliferation, differentiation, calcium signaling, neurotropism, and neuro protection. It also has a role in neurotransmission and synaptic plasticity, and a link has been descrybed between vitamin D and dopaminergic neurotransmission. Collectively, the physiological effects of vitamin D in the brain functions include the promotion of neurotransmission, neurogenesis, synaptogenesis, amyloid clearance, and the prevention of neuronal death. It is, thus, not surpriseing that observational studies have documented associations between higher serum vitamin D concentrations and healthier cognitive performance (Di Somma et al., 2017)

A growing body of evidence points to a link between vitamin D insufficiency and mental illnesses. The chance of developing some mental illnesses may be decreased if Vitamin D insufficiency is prevented early in life, or the treatment result may be improved if Vitamin D supplementation is used. (Chauhan, Padhy, Shah, & Malhotra, 2019)

Low serum vitamin D concentrations in children are associated with the prevalence of long-term Alzheimer's disease (AD),

dementia, and cognitive impairment. This is cause for concern given the high rates of vitamin D deficiency and continued uncertainty about the causes of AD and other forms of dementia. Vitamin D deficiency has also been linked to vascular dysfunction and ischemic stroke risk as well as brain atrophy. However, reverse causation is also possible , as the onset of dementia may lead to dietary changes and reduced outdoor activity, which in turn result in lower vitamin D concentrations (Littlejohns et al., 2014)

Cardiovascular disease (CVD) is the major cause of mortality with the exception of cancer and has a significant impact on health care systems and the economy of several countries worldwide. The possible role of vitamin D deficiency as a risk factor for the pathogenesis of CVD and considered the childhood nutritional status of vitamin D as an important determinant of the development of CVD (Wang et al., 2012)

Many hormone systems and associated pathways are impacted by vitamin D and these in turn influence cardiovascular function through a number of mechanisms. The downregulation of parathyroid hormone (PTH) is an important factor by which vitamin D can have a positive effect on heart function, as chronic vitamin D deficiency leads to the overproduction of PTH, which causes left ventricular, hypertrophy (LVH), valvular calcification, myocardial calcification, cardiac arrhythmia, and arterial hypertension. Deficiency of vitamin D also leads to increased inflammation, endothelial dysfunction and upregulation of the renin- angiotensin system (RAS), which is known to

play an important role in controlling blood pressure, intravascular volume and electrolyte balance (Liu et al., 2016)

Moreover, as it was mentioned by (Lerchbaum, & Obermayer-Pietsch, 2012; Gruber, 2015) that it has a significant influence on the immune system, particularly prevents respiratory infections through adequately supplied and indirectly participates in the production of compounds with antibiotic properties (i.e., cathelicidin and defensin).

The optimal level of vitamin D has a positive effect on the condition and healthiness of the skin and the regulation of reproductive processes in children both male and female. In addition, the association has been found between low UVB irradiance and high incidence rates of type 1 diabetes during childhood , which provided new support for the concept of the role of vitamin D in reducing the risk of type 1 diabetes in children.

Vitamin D initially functioned as an antioxidant and an old pro-surviva molecule; it evolved later as a cytokine. Its role in immunity could be considered as a tolerogenic, antiinflammatory cytokine, but vitamin D not only helps the immune system to be inhibited during an excessive or chronic reaction (anti-inflammatory potential) but also to rapidly reach its completion or exhaustion , helping innate cells to kill bacteria or viruses (Castellani et al., 2010; Chirumbolo, Bjørklund, Sboarina, & Vella, 2017)

The anti-inflammatory and immune-regulatory action of vitamin D, in its active vitamin D3 forms, suggests a function that might be generally called “stress-quenching activity.” Its affects the inhibition of

metabolic stress and energetic expenditure in a cell microenvironment and in contexts such as mitochondria of brown adipose tissue is intriguing. This ability suggests the existence of a wider task beyond its immune-tolerant or immune/anti-inflammatory role (Macleod, & Havran, 2011)

Vitamin D helps the cells maintain their energy and survival homeostasis through the modulation of the stress and damage response, which is primarily ruled by the immune system (mainly through the inflammatory response). This modulation also includes the ability to enhance and improve an organism's clearance of disturbance and stressful agents , as well as, to elicit a fundamentally tolerogenic and anti-inflammatory response. The alternative mechanism for achieving this purpose is to increase, promote, and enhance the regulatory, scavenging, and tolerant responses, even playing a role in immunity and finally to restore the energetic and redox homeostasis (Ricciardi et al., 2015)

The main possible reasons for this deficiency were the lack of knowledge about vitamin D (lack of sun exposure, use of sunscreen and fully covering the body during sun exposure for children). The primary care centers were not able to provide information on the importance of vitamin D in bone health, growth , and development of children. Awareness of the benefits of sunlight needs to be increased by the provision of specific about how often sun exposure is required, the duration, and how much of the body should be exposed for optimal vitamin D uptake. Physicians must have more nutritional knowledge

and health care information about vitamin D that could be transferred easily to children's (Al-Saleh et al., 2015).

Both patients and physicians need to be aware of the problem and the importance of maintaining vitamin D levels' besides the need to increase and improve knowledge of vitamin D sources as well as the risk factors leading to its deficiency (Alsuwat et al., 2018)

Vitamin D deficiency has been a health problem in the world. The first one who described the condition of vitamin D deficiency is Glisson and his colleagues during the mid-17th century in London, England. The problem of the situation described as skeletal deformities. Vitamin D has great importance in the growth of bone, so the deficiency of it or imbalance of its metabolism inside the body leads to major problems, most notably rickets in children at that time. (Alwadei, Al-Johani, & Alzamanan, 2018).therefore, vitamin D supplementation among children could help to reverse the increasing trend in the incidence of this disease. It should be noted that the higher serum level of 25-hydroxyvitamin D is associated with substantially lower incidence rates of colon, breast, ovarian, renal, pancreatic, and other types of cancer. Vitamin D concentrations above 20ng/mL was found to be related to substantial reductions in the risk of all cancers combined. Inadequate vitamin D supply may also play a role in the pathogenesis of chronic infectious diseases, autoimmune diseases, allergies, and psychiatryic disorders in children (McDonnell et al., 2016)

Although sun exposure is considered a major source of vitamin D, the prevalence of its deficiency is paradoxically much higher in the

countries with a sunny climate, such as Saudi Arabia, Egypt, Oman, United Arab Emirates, and Jordan (Elshafie et al., 2012).

Babelghaith et al., (2017) report that the production of vitamin D in the human body greatly depends on exposure to sunlight but some of the sunniest parts of the world have the highest rates of vitamin D deficiency. However numerous factors have contributed to dangerously low vitamin D levels in Saudi Arabia. People in Saudi Arabia mostly followed indoor lifestyles due to extreme temperature, besides that it is supposed to be a lack of vitamin D, due to cultural traditions whereby Muslim communities avoid body exposure to the sun . Risk factors for Hypovitaminosis D included female gender, multi-parity, season, conservative clothing style , low socioeconomic status, and urban living.

Vitamin D deficiency has recently been proposed as a possible environmental risk factor for autism spectrum disorder (ASD). It has a unique role in brain homeostasis, embryogenesis and neurodevelopment, immunological modulation (including the Brain's Immune System), anti-oxidation, anti-apoptosis, neural differentiation, and gene regulation. Children with ASD had significantly lower serum levels of 25-hydroxy Vitamin D (25(OH) D) than healthy children. Therefore, Vitamin D deficiency during pregnancy and early childhood may be an environmental trigger for ASD (Bener, Khattab, & Al-Dabbagh, 2014)

Adequate vitamin D presence in the body may reduce the severity of autism through its anti-inflammatory actions, increase T-regulatory cells and anti-autoimmune effects and regulate glutathione, a

killer of oxidative byproducts, which contributes to reducing the risk of autism (Jia, Wang, Shan, Xu, & Staal, 2015)

Attention deficit hyperactivity disorder (ADHD) is one of the most prevalent mental health disorders that affect about 5.3–7.1 percent of children. In recent years, the environment , and more specifically; were the role of nutrition in the prevention and treatment of the disease symptoms has been attracting the attention of researchers. Diet therapy is a simple and inexpensive method that can be readily accepted by the parents and adopted by the children. Nutrition therapy, especially the role of supplements and vitamins is very pronounced focusing on micronutrients such as iron, zinc, and omega-three on the prevention and control of the symptoms have been extensively studied (Sharif, Madani, Tabatabaei, & Tabatabaee, 2015).

Recently a number of studies have proposed that vitamin D might play a role in ADHD pathogenesis. The mechanisms by which vitamin D might affect anumber of neurological diseases, including ADHD (Khoshbakht, Bidaki, & Salehi-Abargouei, 2018)

Vitamin D supplementation not only improves some behavioral problems but may prevent exacerbation in some symptoms of the disorder and reduce impulsivity (Naeini, Fasihi, Najafi, Ghazvini, & Hasanzadeh, 2019).

The vitamin D receptor and vitamin D metabolizing enzymes are expressed in the brain. Due to its pleiotropic function vitamin D is also involved in signaling cascades and neurobiological pathways, which may affect mental health. Low vitamin D status is associated with a

range of adverse neuropsychiatric outcomes. In particularly, population-based epidemiological and clinical studies showed an association of low 25(OH)-vitamin D serum levels (25(OH)D) with depressed mood (Föcker et al., 2018)

Accordingly Rasheed, Taha, & Rasheed (2017), who found that Iraqi women had poor knowledge, a fair attitude, and poor practice among mothers regarding vitamin D supplements for their infants .

It is very important to improve mothers' awareness about vitamin D, its importance to health and wellbeing, the consequence of its deficiency and practices to prevent VD. Mothers need to be educated about sources of vitamin D and the importance of sun exposure because it is not possible to obtain an adequate amount of vitamin D from dietary sources alone. Therefore, a combination of sun exposure along with adequate vitamin D supplementation for all children will prevent vitamin D deficiency/insufficiency (Kamal, 2018).

Consequently, continuous maternal vitamin D supplementation from pregnancy through lactation by dietary supplements and sun exposure to provide the fetus and infant vitamin D and prevent deficiencies (Thiele, Ralph, El-Masri, & Anderson, 2017).

The American Academy of Pediatrics recommends vitamin D supplementation in order to protect child from vitamin D deficiency, should be continued unless the infant is weaned to at least 1 liter per day (about 1 quart per day) of vitamin D–fortified formula. Any infant who receives <1 liter or 1 quart of formula per day needs an alternative way to get 400 IU/day of vitamin D, such as through

vitamin D supplementation (Centers for Disease Control and Prevention, 2019).

As long as the community health nurses play an important role in the prevention of vitamin D deficiency through health education, we should take urgent steps through motivation and create awareness about vitamin D deficiency. Health education raising mothers' awareness about vitamin D, its importance to health and wellbeing, the consequences of its deficiency, and practices to prevent vitamin D deficiency. As well as, the mothers must be educated about the sources of vitamin D and the importance of sun exposure because it is not possible to obtain an adequate amount of vitamin D from dietary sources sufficiently. Therefore, a combination of sun exposure along with adequate vitamin D supplementation for all children will prevent vitamin D deficiency/ insufficiency (Kamal, 2018).

These obligations and awareness concerning vitamins and minerals particularly vitamin D were the responsibility of maternal and child nurses who must begin to educate mothers through pregnancy and over concerning. Nurses as a subgroup of health care providers are in direct contact with patients more than other subgroups, and their health education would influence their patients' condition. Nurses must educate parents about humans acquire vitamin D through sun exposure and ingesting food containing or supplemented by vitamin D. There are very few nutrients that have enough vitamin D innately; therefore, the most important source of vitamin D is sunlight exposure. Therefore, it seems safe to assume that inadequate sunlight exposure, air pollution, winter season, and clothing style are risk factors for vitamin D

deficiency. Adding vitamin D to food is not a usual strategy to prevent its deficiency (Rajebi, Khodadad, Fahimi, & Abolhassani, 2016).

We need to educate women during pregnancy time in a lifecycle , women is responsible not only for her own well-being and health but also for that of her developing fetus . While the 'right diet' and the 'right lifestyle' cannot ensure a healthy baby at birth 100% of the time , the ' wrong diet' and the ' wrong lifestyle' such as diets lacking folate or iron , and lifestyles involving alcohol and cigarettes are associated with higher rates of congenital anomalies , adverse pregnancy outcomes , and direct sequelae in the offspring exposed to such ' wrong' conditions . Some aspects are more clear to us because we see the direct effect or manifestation of the lack of a nutrient or the excess of an environmental toxin such as cigarette smoke (with impaired fetal growth), the effect of nutrient deprivation may be more-subtle and take years to unfold (e.g., vitamin B12 deficiency) (Wagner, Taylor, Johnson, & Hollis, 2012).

1.2. Importance of the Study

More than 254 million children suffer from vitamin deficiency worldwide each year. Estimates of about one billion people worldwide are reportedly suffering from vitamin D deficiency and it is a widespread problem (Alshahrani, 2014).

Vitamin D inadequacy is now an internationally recognized health problem. Worldwide, one in seven people (14%) are estimated to have either insufficient or deficient vitamin D status, whereas in healthy children, the prevalence ranges from 14% to 49% (Iniesta et al., 2016)

Vitamin D has great importance in the growth of bone, hence any deficiency or imbalance of its metabolism inside the body leads to major problems in addition to other certain disorders among children that could affect their development (Alwadei et al.,2018).

The results of epidemiological studies published over the past few years indicate that vitamin D deficiencies affect almost a billion people in the world and are associated with the occurrence of many communicable and non-communicable diseases, which reflect the inhibition in their immune system. Hypovitaminosis of vitamin D can be a result of a limited exposure to sunlight, using sunscreen, air pollution, insufficient intake of foods rich in this vitamin and /or problems with its absorption. Vitamin D deficiency is a common medical condition that affects various age groups and the prevalence of vitamin D insufficiency among children reaches even 80% (Zadka et al., 2018).

Vitamin D deficiency is a global public health concern and is represented as rickets, the most well-established consequence, and an increased incidence of many diseases has been observed in developed countries. In one of the studies, up to 18% of American children were deficient in vitamin D, and 1% were severely deficient. Breastfed infants are at risk of vitamin D deficiency due to the low concentration of vitamin D in breast milk. The American Academy of Pediatrics (AAP) recommends that breastfed, partial, and breastfed infants be provided with vitamin D at a rate of 400 IU/day, starting with the first few days of life. However, adherence to this recommendation is poor (Umaretiya et al., 2017).

Studies from Saudi Arabia, Kuwait, United Arab Emirates, and Iran reveal that 10–60%of mothers and 40–80% of their neonates had undetectable low vitamin D levels (0–25 nmol/L) at delivery. Higher socioeconomic status, antenatal care, and vitamin D intake were associated with higher vitamin D levels (Al Bathi et al., 2012) .

In Saudi Arabia, althought there is agreat economic affluence and adequate sunlight throughout the year, vitamin D deficiency found to be slightly common in infants, adolescents, as well as pregnant and lactating Saudi women. It is usually common practice for families to keep infants and young infants indoors with minimal or total avoidance of direct sunlight. Even though there is an awareness of the high prevalence of vitamin D deficiency (alshammari et al., 2018)

Studying vitamin D deficiency is of great interest for medical researchers because of life modernization in the gulf region in the last seventy years, whereas, the Prevalence and awareness about vitamin D deficiency in Jeddah's women were studied in 2017 and there was a little awareness about the risks of vitamin D insufficiency (Gamal et al., 2018)

Vitamin D deficiency is a global health problem in children and is considered an epidemic. The Middle East and North African region, including Saudi Arabia, has a very high rate of vitamin D deficiency that reaches 81% among various age groups. Vitamin D has two biologically inert precursors: vitamin D3and vitamin D2 (Alamoudi et al., 2019)

Zhu et al. (2012) report that the prevalence of vitamin D insufficiency was higher among American children aged 6-11 years (73%) compared with children aged 1-5 years (63%); girls (71%) compared with boys (67%) , and non-Hispanic blacks (92%) and Hispanic (80%) children compared with non-Hispanic white children (59%). In studies in Australia, Turkey , India, and Lebanon, 30-50% of children and adults had 25(OH)D levels under 50 nmol per liter.

Vitamin D deficiency and insufficiency are common among children in South China, despite the presence of sufficient sunlight in the region. Vitamin D status is reported worse in older children and in the winter (Guo et al., 2018). A high prevalence (50-90%) of vitamin D deficiency along with low dietary calcium intake has been documented in the Indian population (Kamboj, Dwivedi, & Toteja, 2018)

Fasih (2016) found in UAE children consists of 293 samples have 77%(n = 227) with Vitamin D deficiency was found out, while 48% (N = 142) had severe deficiency with no clinical signs of Rickets. Those patients have secondary hyperparathyroidism and hypophosphatemia although serum calcium levels were normal.

According to Isa, Almaliki, Alsabea, & Mohamed (2019)' the prevalence of vitamin D deficiency among the pediatric wild world, in Bahrain (93.4%), Kuwait (92%), Oman (96.5%), Qatar (68.8%), KSA (95.3%), Iran (96%), Turkey (12-80%), China (16.1%), Korea (59.1%), Netherlands (29.8%), and USA (54%).

1.3. Problem Statement

Parents of children with vitamin D deficiency usually have a great responsibility for taking care of their children and for protecting them from acute and chronic problems specifically cognitively damaged. Continuously, they need more focusing on their children's behaviors to improve a child's life. So, parents must be well educated and practically award with attitudes positively, which enhances to study the knowledge, practice, and attitudes of mothers concerning vitamin D deficiencies; and determine the decision whether they need improvement of their levels.

1.4. Objectives of the Study

1. This study aims to assess Mother's Knowledge, Attitudes, and Traditional Practices toward Vitamin D Deficiencies among their children in the middle Euphrates.

2. This study aims to find out the relationship between Mothers's Knowledge, Attitudes, and Traditional Practices toward Vitamin D Deficiencies among their children and their socio-demographic characteristics in the middle euphrates .

3. This study aims to find-out the differences between the provinces in the middle Euphrates concerning the mothers' knowledge, attitudes, and their traditional practices toward vitamin D deficiencies.

1.5. Definition of Terms

A. Assessment

Theoretically definition

Assessment is a collection of all relative information needed to solve health problem (Danok, 2013)

Operationally definition

Assessment is a collection of data from mothers of children to detect their levels of knowledge, attituds and practices about vitamin D deficiency among their children

B. Knowledge

Theoretically definition

Knowledge is a complex concept that requires integrate information obtained from several sources and formulates one or more ideas about a situation (Bolisani and Bratianu, 2018).

Operationally definition

Knowledge is the information of mothers about Vitamin D deficiency among children (causes, risk factors, source of vitamin D, problems of vitamin D deficiency , treatment, and prevention)

C. Attitudes

Theoretically definition

Attitudes are predisposition or tendency to respond positively or negatively toward the certain idea, object, person, or situation attitude

influences and individual choice of action, and responses to challenges, in centers, and rewards (Business Dictionary, 2019)

Operationally definition

Attitudes are an overall of mothers' evaluation of an object that is based on cognitive, affective, and behavioral information about vitamin D deficiency

D. Traditional Practices

Theoretically definition

Traditional Practices are the sum total of the knowledge, skills , and practices based on the theories, beliefs, and experiences indigenous to different cultures and traditions (Mordeniz, 2019)

Operational Definition

Traditional Practices are that provided by mothers at home to prevent vitamin D deficiency among their children and they are gain these traditional performances from their culture and life experience

E. Mothers

Theoretical definition

Mother, as *defined* here, female parent. It is the cultural process of locating women's identities in their capacity to nurture infants and children (Biber, 2016)

Operational definition

Mothers who have child under 5 years interested by the researcher to collect data about their knowledge attitude and traditional practices related vitamin D defeciency

F. Vitamin D Deficiency

Theoretically definition

Vitamin D Deficiency is a global health problem caused mainly by insufficient exposure to sunlight (Sahota, 2014)

Operationally definition

Vitamin D Deficiency is to Decrease the level of vitamin D than the normal range and body need

G. children under 5 years

Theoretically definition

Children under 5 years are the period from birth to eight years old is a time of remarkable growth with brain development at its peak. During this stage, children are highly influenced by the environment and the people that surround them (WHO, 2019)

Operationally definition

Children under 5 years are the early period of child life from day to 5 years old.

CHAPTER TWO

REVIEW OF LITERATURE

Chapter Two

Review of Literature

2.1. Theoretical concept of vitamin D

Vitamin D is a group of fat-soluble secosteroids responsible for increasing intestinal absorption of calcium , magnesium, and phosphate , and multiple other biological effects . The most important compounds in this group are vitamin D3 (also known as cholecalciferol) and vitamin D2 (ergocalciferol) . Under normal conditions of sunlight exposure, no dietary supplementation is necessary because sunlight promotes adequate vitamin D synthesis in the skin. Deficiency can lead to bone deformity (rickets) and bone weakness (osteomalacia) in children (Neves, 2015; National institute of health, 2019)

Vitamin D deficiency has been linked to several health outcomes , including musculoskeletal (bone fractures , osteomalacia, osteopenia , rickets , osteoporosis and muscle weakness) and non-skeletal complications.Non-skeletal complications include cardiovascular diseases and risk factors such as congestive heart failure, impaired systolic and diastolic function, myocardial infarction, peripheral vascular disease, nonvalvular AF and hypertension. In addition , it was associated with tuberculosis , rheumatoid arthritis, multiple sclerosis, inflammatory bowel diseases, cancers, schizophrenia, depression , cognitive deficits , (Wong et al., 2013; Demir, Uyan, & Melek, 2014; Küçükazman et al., 2014)

2.2. Historical background of vitamin D.

The vitamin in question was vitamin D. Rickets, the bone disease caused by vitamin D deficiency, was known in antiquity and was described in detail by F. Glisson since 1650. Many causes and cures for rickets had been proposed. Although cod-liver oil had been used medicinally for a long time, D. Scheutte in 1824 was the first to prescribe it for the treatment of rickets. It was not until 1906 that Hopkins postulated the existence of essential dietary factors necessary for the prevention of diseases such as scurvy or rickets (Ravisankar et al., 2015).

It was as early as the mid-1600s that Whistler and Glisson independently published scientific descriptions (in Latin) of rickets, caused, we now know , by a vitamin D deficiency. However neither treatise recognised the crucial role of diet or exposure to sunlight on the prevention of this disease. Around 200 years later, in 1840, a Polish physician called Sniadecki realised that cases of rickets occurred in children living in the industrial centre of Warsaw but did not occur in children living in the country outside Warsaw. He surmised that lack of exposure to sunlight in the narrow, crowded streets of the city where there was considerable pollution due to the burning of coal and wood, caused the disease (Norval, 2005; Singh, Dharrao, & Baheti, 2016)

The chemical structures of the various forms of vitamin D were determined in the 1920s and 1930s by Windaus and colleagues in Goettingen, Germany. Windaus was awarded the Nobel Prize in Chemistry in 1928 “for services rendered through his research into the constitution of the sterols and their connection with the vitamins”. The

biologically active form of vitamin D, found in the skin and called D_3, was characterised in 1936 , and was shown to result from the ultraviolet (UV) radiation of 7-dehydrocholesterol (Norval, 2005; DeLuca, 2014; Chang, & Lee, 2019)

2.3. Epidemiology of vitamin D deficiency

Vitamin D deficiency is widespread , that the lowest vitamin D levels are commonly found in regions such as the Middle East and South Asia and the main risk factors were attributed to elderly women , higher latitude , winter season, less sunlight exposure , skin pigmentation , dietary intake and low vitamin D fortified foods . It was estimated that the prevalence of vitamin D deficiency is approximately 30–50% of the general population . Furthermore , vitamin D deficiency is still common in sunshine countries . In a large Middle Eastern study of 60,979 patients from 136 countries with yearlong sunlight , 82.5% of studied patients were found to have vitamin D insufficiency (Haq, et al., 2016; Lee, et al., 2017)

There is an epidemic of vitamin D deficiency worldwide , which represents a major factor of many chronic diseases and has led some authors to suggest annual vitamin D measurement coupled with adequate intake and greater awareness of its consequences . In the United States , there was an increasing prevalence of vitamin D deficiency observed from a sample of 18,158 individuals between 1988 and 1994 compared with a sample of 20,289 individuals between 2000 and 2004 with 5–9 nmol/l decrease in vitamin D levels (Zhang, & Naughton, 2010).

Vitamin D levels were found to be lowest in Blacks , followed by Hispanics and Chinese , and adequate in Whites (Multi-Ethnic Study of Atherosclerosis MESA). Non-Hispanic blacks and Mexican Americans tend to have lower levels of vitamin D in comparison with non-Hispanic whites. Vitamin D is significantly lowers among obese and non-college educated individuals, as well as those with poor health statuses, hypertension, low high-density lipoprotein levels and low milk consumption. Furthermore, the level of vitamin D deficiency was found to be alarmingly lower in winter and spring (Robinson-cohen, et al., 2013)

2.4. Source and Metabolism of vitamin D

It was specified by (Wacker, & Holick, 2013) that the major natural source of the vitamin is synthesis of cholecalciferol in the lower layers of epidermis skin through a chemical reaction that is dependent on sun exposure (specifically UVB radiation). Cholecalciferol and ergocalciferol can be ingested from the diet and from supplements . Only a few types of foods , such as the flesh of fatty fish , naturally contain significant amounts of vitamin D . In the U.S . and other countries, cow's milk and plant - derived milk substitutes are fortified with vitamin D, as are many breakfast cereals . Mushrooms exposed to ultraviolet light contribute useful amounts of vitamin D.

Vitamin D3 is produced in the skin from 7-dehydrocholesterol by ultraviolet (UV) irradiation, which breaks the B ring to form pre-D3 . It is bounded to vitamin D binding protein. The liver and other

tissues metabolize vitamin D whether from the skin or oral ingestion, to 25OHD, the principal circulating form of vitamin D. (Bikle, 2017).

Foods that provide vitamin D include fatty fish, like tuna, mackerel, and salmon, foods fortified with vitamin D, like some dairy products, orange juice, soy milk, and cereals, beef liver, cheese and egg yolks (Picture-1) (Marengo, 2019)

According to CDC (2020)' the children younger than 12 months old need 400 IU of vitamin D each day and the children 12 to 24 months old need 600 IU of vitamin D each day

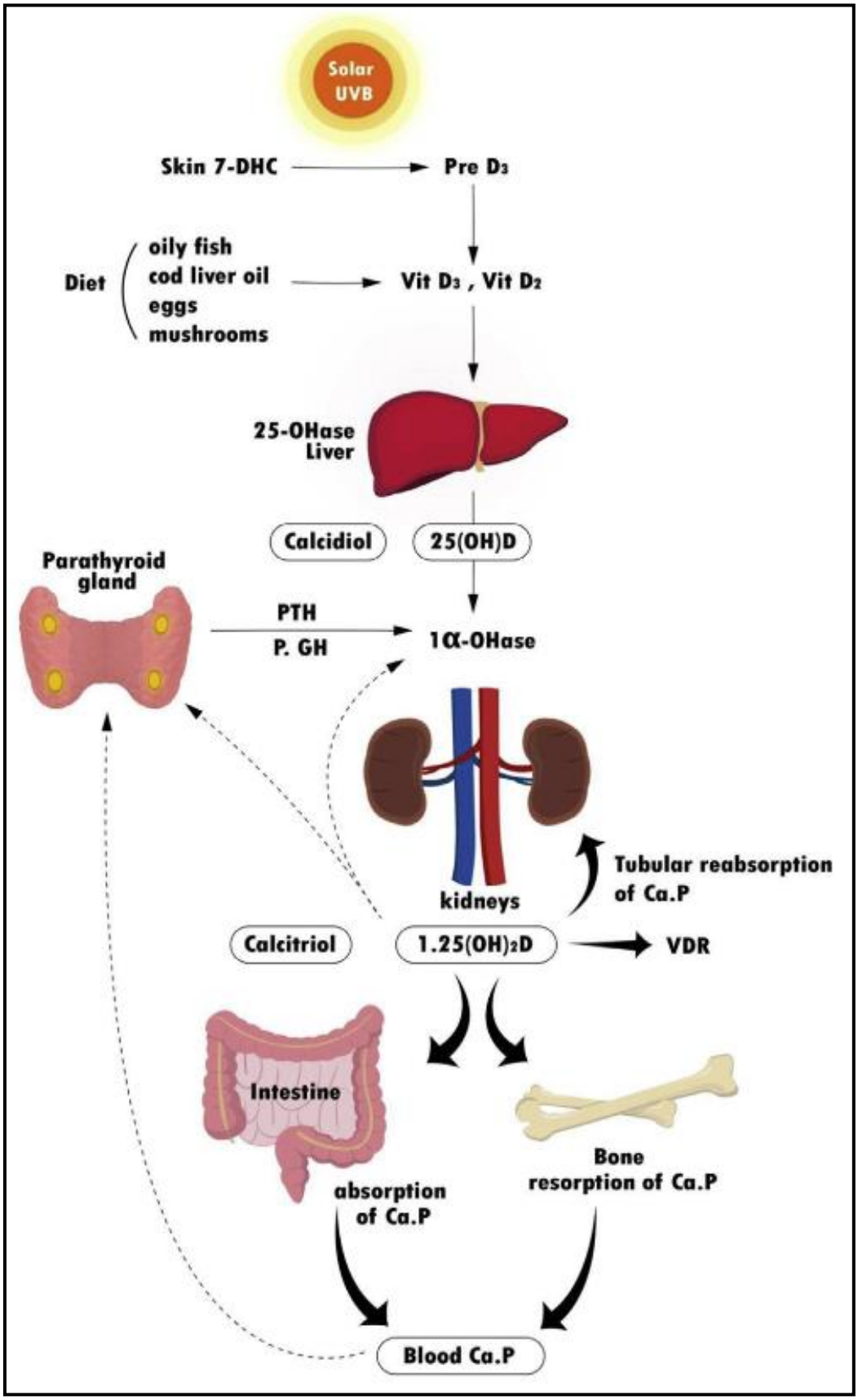


Figure 2.1. The Metabolism and Bioactivity of Vitamin D (Changa, & Lee, 2019)

Source	Approximate vitamin D content
Fortified sources	
Cereal	100 IU per serving
Milk	100 IU per 8 oz
Orange juice	100 IU per 8 oz
Nonfortified food sources	
Breast milk	20 IU per L
Cod liver oil	400 IU per teaspoon
Egg yolk	20 IU
Mackerel (canned)	250 IU per 3.5 oz
Salmon (canned)	300 to 600 IU per 3.5 oz
Salmon (fresh, farmed)	100 to 250 IU per 3.5 oz
Salmon (fresh, wild)	600 to 1,000 IU per 3.5 oz
Sardines (canned)	300 IU per 3.5 oz
Tuna (canned)	230 IU per 3.6 oz
Prescription supplements	
Vitamin D_2 (ergocalciferol)	50,000 IU per capsule
Vitamin D_2 (ergocalciferol [Drisdol]) liquid supplements	8,000 IU per mL
1,25-dihydroxyvitamin D (calcitriol [Rocaltrol])	0.25 or 0.5 mcg per capsule
1,25-dihydroxyvitamin D (calcitriol [Calcijex])	1 mcg per mL solution for injection
Over-the-counter supplements	
Vitamin D_3or cholecalciferol	400, 800, 1,000, or 2,000 IU per tablet

Table 2.1. Sources of Vitamin D (Marengo, 2019)

2.5. Deficiency of vitamin D

Vitamin D deficiency means that a person does not get enough vitamin D to stay healthy, that the amount of vitamin D you need each day depends on age and many other factors (Sintzel, Rametta, & Reder, 2018).

The serum concentration that constitutes vitamin D deficiency is controversial and not well supported by clinical trials , especially in the pediatric population. Deficiency is generally measured by the calcidiol concentration because of its long half-life of 2 to 3 weeks , relatively healthy circulating concentration, and resilience to fluctuations in parathyroid hormone concentrations (Table 2) (Lee, So, & Thackray, 2013)

Table 2.2. Vitamin D Status Based on Calcidiol Concentrations (Lee, So, & Thackray, 2013)

Vitamin D Status	Calcidiol (ng/mL)			
	AAP 2008, IOM	Endocrine society	KDOQL	Adult-NEJM 2007
Severe deficiency	<5	-	<5	-
Mild to moderate deficiency	5-15	<20	5-15	<20
Insufficiency	16-20	21-30	16-30	20-30
Sufficiency	21-100	31-60	>30	31-60
Excess	101-149	-	-	-
Intoxication	>150	-	-	>150

AAP, American Academy of Pediatrics; IOM, Institute of Medicine; KDOQL, Kidney Disease Outcomes Quality Initiative ; NEJM, New England Journal of Medicine

1. Immunity: It has clearly shown that vitamin D deficiency is part of the seasonal nature of cold and flu outbreaks – less sunlight means less vitamin D, which leads to lower immunity and more illness , since it enriches the phagocytic capacity of macrophages through mitochondrial activation. Vitamin D3 furthermore increases the production of an antimicrobial peptide , cathelicidin , in response to a microbial trigger. A lower concentration of vitamin D3 due to lack of UV exposure may be one of the reasons for the higher incidence rate of influenza infection during the winter (Prietl, Treiber, Pieber, & Amrein, 2013; Brett et al., 2018).

2. Bones: The role of vitamin D in the maintenance of the calcium balance of the skeleton is the classical activity which has been researched exhaustively over the past 70 years. The mechanisms entail its promotion of calcium absorption in the intestine and facilitation of proper function of parathyroid hormone thereby maintaining basic metabolic activities requiring adequate serum calcium and phosphate concentrations . The impact of a vitamin D deficiency is well publicised and manifests as rickets in children and osteomalacia after skeletal growth has ceased (Ebeling, 2014; Wintermeyer et al., 2016)

3. Muscles: One of the byproducts of vitamin D's breakdown, called 1,25(OH)2D , enters muscle cells and affects the nucleus. Once there , the vitamin D metabolite enhances the cell's contraction ability . Since muscles work by contraction and

relaxation, a muscle's ability to contract is essential to its strength and response to outside forces. Vitamin D, then, makes muscles stronger in a very direct way (Tanner, & Harwell, 2015; Ksiazek, Zagrodna, & Lisowska, 2019)

4. Lungs: As reported by many studies, vitamin D plays a role in keeping our lungs healthy due to vitamin D possessing a range of anti-inflammatory properties – with greater concentrations of vitamin D resulting in greater lung health benefits (Litonjua, 2017).

5. Heart: Rapson et al., 2017; Bilagi, 2018; Krishna, 2019 clarified that the lower the vitamin D , the higher the blood pressure. The excess strain and resulting damage from high blood pressure causes the coronary arteries serving the heart to slowly narrow and harden, greatly increasing the risk of a heart attack. A report of the National Health and Nutrition Survey which was based on nearly 5000 participants , found that low concentrations of 25(OH) vitamin D were associated with an increased risk for peripheral arterial disease, myocardial infarction and all-cause cardiovascular mortality. Knowledge in this field will undoubtedly progress in the near future.

6. Kidneys: For the reason that vitamin D is a fat-soluble vitamin, it helps to regulate kidney function and plays a very beneficial role in treating kidney disease (Keung, 2018)

7. Mood: since children comes to being happy , the scientific evidence is clear . The lower vitamin D levels , the more likely

to feel blue rather than happy. Low levels of vitamin D have long been associated with a higher incidence of prolonged bad mood , isolation and depression (Spedding, 2014)

8. Weight Loss: children feel hungry all the time, no matter how much eat as long as have insufficient vitamin D. Low levels of vitamin D interfere with the effectiveness of leptin , the appetite hormone that tells human when he is full. Once vitamin D is replenished and back to normal levels , leptin's actions are restored, thus creating feelings of satiety and aiding in weight loss (Khosravi et al., 2018).

9. Cognitive function: The deficiency of vitamin D is associated with various bone and non-bone health hazards. Among non-bone health hazards, in recent decades , growing evidence identified the association of low serum vitamin D levels with neurodegenerative disorders, poor cognition, attention deficit hyperactivity disorder, autism, depression, and schizophrenia in children and adolescents (Wacker, & Holick, 2013; Wrzosek et al., 2013) At the same time, it can have an effect on adults so that several studies have linked vitamin D deficiency with cognitive impairment from childhood through to older men and women. Research has demonstrated that vitamin D has a variety of nerve protective roles, including helping the brain rid the brain of beta-amyloid, an abnormal protein thought to be a major cause of Alzheimer's disease. In addition, an international study (the largest to date) showed that elderly people with very low levels of

vitamin D in early childhood are twice as likely to develop Alzheimer's disease. (Maddock et al., 2017)

10. Glucose metabolism: In a study of more than 10000 children, daily vit D supplementation with doses of 2000 IU was found to be associated with a 78% reduced risk of developing type 1 diabetes compared to supplementation with lower doses. A meta-analysis of four studies of a large cohort of children receiving vit D supplementation demonstrated a 29% reduction in the risk for developing type 1 diabetes compared to non-supplemented children (Raubenheimer, & Noffke, 2011)

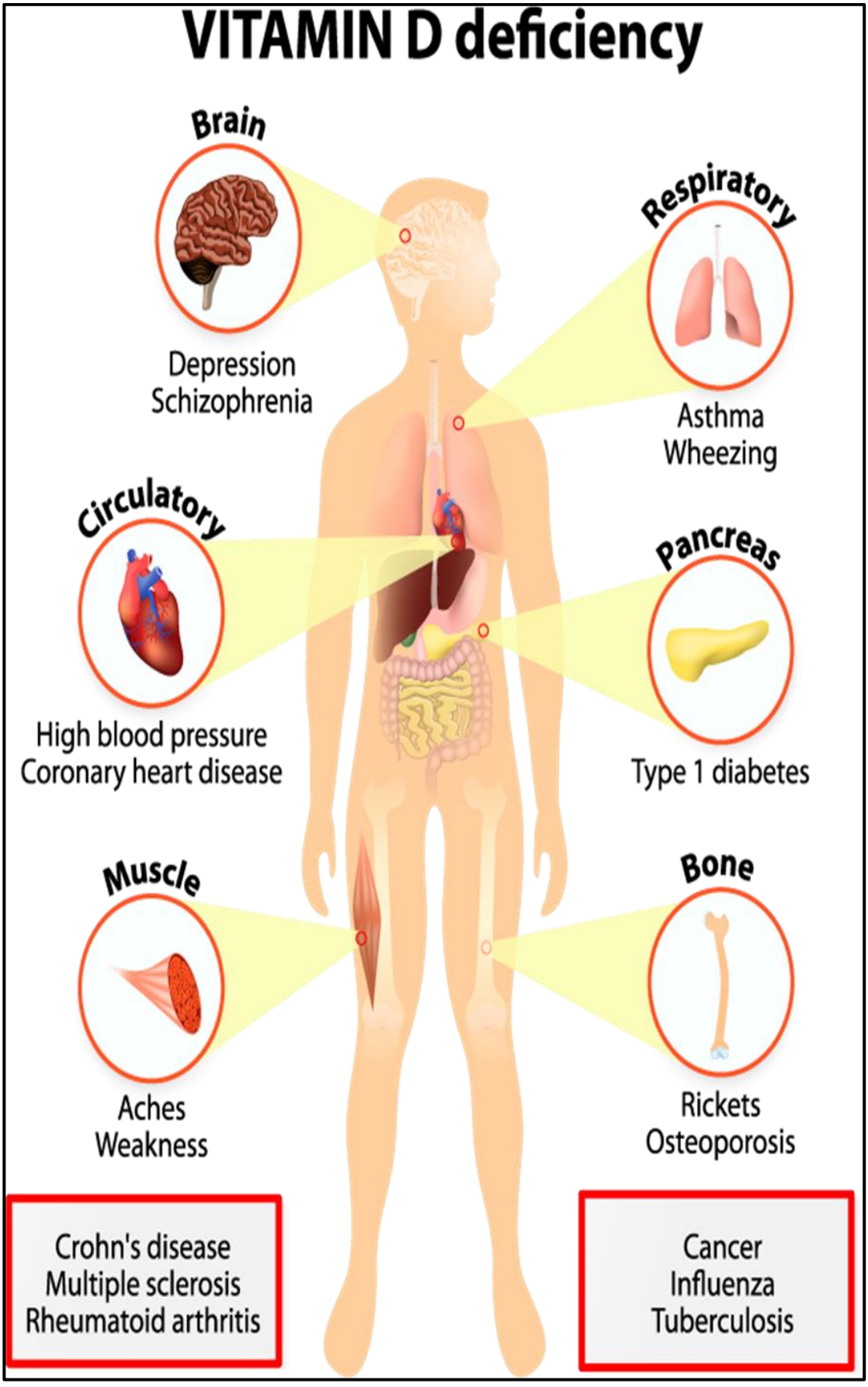


Figure 2.2. Effect of Vitamin D deficiency (Quora, 2021)

2.6. Etiologic Factors of Vitamin D Deficiency

Vitamin D is obtained from several sources including diet, supplements, or seasonal exposure of skin to adequate solar ultraviolet irradiation via photochemical and thermal conversion of the cholesterol precursor 7-dehydrocholesterol (Mailhot, & White, 2020)

As long as the elongated half-life of 25-OHD, serum 25-OHD concentration, which considered as the best indicator of vitamin D status, reflecting the body's vitamin D stores. Several factors have significant effects on serum vitamin D levels, including season, sunlight exposure, age and diet. Since the rapid growth in the skeletal system, infants aged 4 months to 2 years are at a high risk for vitamin D deficiency (Çakır, & Demirel, 2014).

The major source of vitamin D for children is the exposure to natural sunlight. However , children with a naturally dark skin tone have natural sun protection and require at least three to five times longer exposure to make the same amount of vitamin D as children as with a white skin tone (Nair, & Maseeh, 2012).

Diet problems, psychological problems, digestive complaints and stomach conditions, lack of food, high food prices and lack of breastfeeding can be the main causes of malnutrition, which include changes in nutrient requirements, secondary to disease processes and drug modalities in combination with low or marginal dietary intake. Infections are common and result in anorexia, poor dietary intake, and malnutrition, that predispose the child to another infection. The main causes of malnutrition among the children are insufficient intake of

food and lack of nutritional knowledge with unawareness about the daily caloric intake , which can lead to malnutrition (Khan et al., 2017).

Socio-economic status: since the rise of food prices in the 1870s the world population has amplified more than five times and has attained 6.71 billion today. It is expected to reach nearly 9 billion in 2050. To overcome existing hunger and to provide food to a further 2 billion people, food production has to be increased to double by 2050 . An increase in food prices has adversely affected micronutrient deficiencies which gave desirable results on nutrition and health of people. For example, impaired cognitive development, weak immune system, and increased risks for mothers as well as children during childbirth. Since nutrition is important for the physical and mental development of children and it is directly related to their incomes in adulthood (Younis, Ahmad, & Badpa, 2015).

There is a two-way link between poverty and health. Poverty is one of the most influential risk factors for ill health , which can lead to poverty . Illness impairs learning ability and quality of life has a great impact on productivity and drains family savings. Poor people are more exposed to environmental risks (poor sanitation, unhealthy food, violence , and natural disasters) and less prepared to cope with them, are less informed about the benefits of healthy lifestyles , and have less access to quality health care. They are therefore more at risk of illness and disability (Delisle, & Batal, 2016)

Mothers also likely to be more confident and play a greater part in intra-family decision making in favor of their children's needs. Their

husbands tend to be economically better off than those of uneducated women. Educated mothers may also make earlier and more effective use of health services. It may be postulated that mothers' education would affect their children's nutritional status by similar mechanisms and various studies have shown some degree, rationalize a great association between mothers' education and the nutritional status of children (Kavitha, 2015).

The immediate causes of childhood malnutrition as insufficient dietary intake may result from poor breastfeeding practices, early weaning , and delayed introduction of complementary foods. Other factors that influence food intake include health status , food taboos, and personal choice related to diet. The mother is the main caregiver and the one who is the key person in the prevention of under nutrition. Unable to look after them, the children completely depend on their mothers for their nourishment which is limited to what their mothers provide. Mothers chances of preventing under nutrition are likely to be increased if she has the right knowledge or information on how to feed her children (Gichana, 2013)

Mothers are the foremost providers of primary care for children, who have strongly understanding of basic nutrition and health measures, and influence the care they provide. The aspects of nutrition knowledge include the duration of exclusive breastfeeding, appropriate age for introducing solid foods into a child’s diet and the type of solid foods to introduce, frequency of child feeding, diet during illnesses, and the mother’s perceptions of her own child’s

nutritional status. Mother's practical nutrition knowledge is important for the child's nutritional outcome (Imera, 2013)

Diseases: In numerous publications , it has been reported that malnutrition is a common problem in pediatric patient's with diseases and its clinical relevance has been widely accepted by professionals. Malnutrition in pediatric patients with various diseases is mainly due to an inadequate intake of food and desorption of nutrients. This is due to the gastrointestinal side effects of medication therapy, the primary effects of diseases itself, and changes in metabolism. Diseases like gastrointestinal inflammation and abnormalities, cancer, renal diseases, cardiac diseases, etc. (Brinksma et al., 2012).

- Lemond, 2018; Parva et al., 2018 stated that as long as human milk is a poor source of vitamin D , the babies on breast feeding are at higher risk of vitamin D deficiency , who must give the infant a supplement of 400 IU of vitamin D every day.
- Some people are at higher risk of vitamin D deficiency (Patience, 2013; Smith, 2017; Lemond, 2018; Parva et al., 2018):
- Breastfed infants , because human milk is a poor source of vitamin D. If you are breastfeeding , give the infant a supplement of 400 IU of vitamin D every day.
- Older adults , because the skin doesn't make vitamin D when exposed to sunlight as efficiently as when children were young , and kidneys are less able to convert vitamin D to its active form.

- People with dark skin, which has less ability to produce vitamin D from the sun .
- People with disorders such as Crohn's disease or celiac disease who don't handle fat properly , because vitamin D needs fat to be absorbed. People who have obesity, because their body fat binds to some vitamin D and prevents it from getting into the blood.
- People who have had gastric bypass surgery
- People with osteoporosis
- People with chronic kidney or liver disease .
- People with hyperparathyroidism (too much of a hormone that controls the body's calcium level)
- People with sarcoidosis, tuberculosis, histoplasmosis, or other granulomatous disease (a disease with granulomas, collections of cells caused by chronic inflammation)
- People with some lymphomas, a type of cancer .
- People who take medicines that affect vitamin D metabolisms, such as cholestyramine (a cholesterol drug) , anti-seizure drugs, glucocorticoids , antifungal drugs, and HIV/AIDS medicines.

2.7. Problems associated with vitamin D deficiency

2.7.2.Nutritional Deficiencies

Under nutrition is a critical determinant of mortality and morbidity in young children worldwide; it is associated with 45 percent of all deaths in children under five years of age. Approximately 52

million children (7.7 percent of all children under five years of age worldwide) have wasted, and one-third (17 million) have severe acute malnutrition. Many more children (154.8 million; approximately 23 percent) are stunted, reflecting chronic under nutrition. Severe under nutrition is primarily a problem in resource-limited countries. Globally, childhood stunting decreased from 39.7 percent in 1990 to 23.2 percent in 2015 and is expected to decline further. The term "malnutrition" in its traditional sense, referring to under nutrition (wasting, stunting, or micronutrient deficiencies) since it affects normal growth and development (Goday, 2020; Mehta et al., 2013).

Nearly 20 million children suffer from severe acute malnutrition worldwide. Children who survive an acute episode of severe acute malnutrition are at increased risk of experiencing long-term adverse effects on their physical and mental health (Lelijveld et al., 2016)

The potential for adjunctive vitamin D to improve weight gain and developmental outcomes in children with severe acute malnutrition has been overlooked. This is surprising because rickets and vitamin D deficiency are known to be common in children with severe acute malnutrition, vitamin D deficiency associates with severe wasting in malnourished children, and vitamin D supplementation has been shown to enhance weight gain in low-birth weight infants (Saleem et al., 2018).

Protein-energy malnutrition (PEM) is likely to be associated with vitamin D intake deficiency. Moreover, some individuals with seemingly adequate ultraviolet (UV) exposure have low serum vitamin

D concentration, due to the varying levels of the skin pigmentation. Hyperpigmentation in black people can compromise D production and this phenomenon may be aggravated by limited sunlight exposure in the young infants (Nabeta et al., 2015)

Evaluation of nutrition status and provision of adequate nutrition are crucial components in the overall management of children during illness because malnutrition is prevalent and affects normal growth, development, other clinical outcomes, and resource utilization. Illness-related malnutrition in children may be attributed to nutrient loss, increased energy expenditure , decreased nutrient intake, or altered nutrient utilization (Mehta et al., 2013).

Although malnutrition in pediatrics is of concern in low resource settings it is also of major worry for hospitalized children in developed as well as in transition countries. However, causes for maln-utrition differ in the two environments (Perkins et al., 2017).

Independently of the income setting, malnutrition is multifa-ctorial. Whereas malnutrition in low-income countries is often, but not solely, attributable to limited access to food and/or medical care, it is often triggered by disease in in-transition countries (Huysentruyt et al., (2016).

Importancy , the report of the Global Burden of Disease Study 2013 revealed that protein- energy malnutrition accounted globally for 9.8/100.000 age-standardized deaths in the largest 50 countries for child and adolescent populations. More alarming, when classifying the data according to the level of development, it accounted

for11/100.000 age-standardized deaths in the developing countries and 0.1/100.000 age-standardized deaths in developed countries (Kyu et al., 2016).

Poor nutritional status at admission or worsening of nutritional status during hospitalization is recognized to adversely affect clinical outcomes. Among other systems, it disturbs immune response, thereby causing children to have piteous wound healing with a higher risk of infections and complications of their underlying disease. Furthermore, these adverse effects lead to delayed recovery and prolong hospitalization, thereby increasing the financial burden on the health care system (in-patient, day costs, treatments) and limiting hospital bed availability (McCarthy et al., 2019).

2.7.2. Cognitive Problems

Vitamin D works by attaching to nuclear vitamin D receptors (VDR), which are found in most neurons and certain glial cells throughout the human brain. Vitamin D deficiency during pregnancy causes extreme alterations in the brain at birth. This provides a biological plausibility for a link between vitamin D status and neurodevelopment (Chowdhury et al., 2020)

The consequences of vitamin D deficiency in early life on neurodevelopmental may not become evident until later in childhood. Furthermore, the predictive ability of early neurodevelopmental assessments is poor, and cognitive assessments in school-aged children have shown to be stable over time (Schneider, Niklas, & Schmiedeler, 2014).

Vitamin D supply to the growing fetus depends on maternal vitamin D status. Therefore; maternal vitamin D deficiency during pregnancy might lead to adverse health outcomes in the offspring . Some studies have observed fetal growth restriction, reduced bone size, and bone mineral content, and recurrent wheeze in the offspring of mothers with vitamin D deficiency. There are poor learning and memory, and alterations in attention, in association with vitamin D deficiency before conception and/or during pregnancy (Veena et al., 2017)

The role of vitamin D in the brain is not well understood. However, there is evidence that vitamin D has neuroprotective functions and plays an important role in regulating the development, differentiation, and the ramification of nerve cells through influencing neurotrophic factors. A meta-analysis of brain MRI found an association of brain cell atrophy with vitamin D depletion in children. Receptors of vitamin D and the presence of specific enzymes in its conversion inactive form has been identified in different parts of the brain (Annweiler, Annweiler, Montero-Odasso, & Bartha, & Beauchet, 2014; Tofail et al., 2019)

Attention deficit and hyperactivity/ impulsivity symptoms, attention- deficit/ hyperactivity disorder (ADHD) is a neurodevelop-mental disorder with childhood onset likely to persist into adulthood. Furthermore, vitamin deficiencies are among the most discussed topics lately. In particular, vitamin D abnormalities are blamed in the etiology (Bener, Kamal, Bener, & Bhugra, 2014; Sahin, Altun, Kurutas, & Balkan, 2018)

Recent studies have demonstrated that vitamin D stimulates cellular proliferation, differentiation, neurotransmission, and neuroplasticity in the central nervous system, and has neurotrophic and neuroprotective effects (Bener, Khattab, & Al-Dabbagh, 2014).

Although the etiological role of vitamin D deficiency in psychiatric disease remains somewhat unclear, an relationship has been shown between many diseases and vitamin D deficiency , including depression , schizophrenia , autism spectrum (Józefowicz et al., 2014; Sharif et al., 2015; Chiang et al., 2016)

Vitamin D deficiency is associated with psychiatric diseases such as autism, schizophrenia , and depression. The vitamin is not only involved in bone metabolism and serum calcium regulation, but also has a significant effect on many body organs. Thus, it has been recommended that the level of this vitamin should be checked in pregnant women and their babies. Vitamin D deficiency during the fetal period is accounted for some psychological disorders after birth. Also, it has been suggested that vitamin D insufficiency during the fetal growth and post-natal period has unfavorable effects on the development of the brain structure and functions (Eyles et al., 2013; Sharif et al., 2015)

Kočovská et al., (2014) and Esposito, (2020) mentioned that lack of vitamin D has newly been suggested as a probable environmental risk factor for autism , which considered as a neurodevelopmental disorder characterized by reduced social interactions, impaired communications , and stereotypic and repetitive behavior with

different degrees of severity. It is related to interaction of genetic and environmental factors

Recently, there has been a remarkable rise in the prevalence of autism. The increase in the prevalence of autism may not only due to an improvement in diagnostic techniques and the rise of people's awareness. This disease is associated with other neuro-behavior - cognitive disorders . Its symptoms include a wide range of socio-communication problems, intellectual disabilities, speech problems, attention deficit hyperactivity, seizure disorder, fragile X syndrome , or tuberous sclerosis (Gillberg, 2010; Sotodehasl, Tamadon, Malek, 2018).

Mercury intoxication, gestational infections, drug consumption during pregnancy, vaccine immunization, and vitamin D have been under consideration as potential triggers (Principi, & Esposito, 2016).

Vitamin D deficiency is associated with many structural and functional abnormalities of the nervous system that can be observed in ASD patients (Ali, Cui, & Eyles, 2018).

Vitamin D supplementation during pregnancy plays a role in conditioning the development and function of the nervous system. Vitamin D deficiency can be associated with structural and functional abnormalities of the nervous system that can be observed in autism spectrum disorder patients. Moreover, vitamin D deficiency during pregnancy could be a risk factor for autism spectrum disorder development in the offspring, that children with autism spectrum disorder have significantly lower serum levels of vitamin D than normal

children and that supplementation of vitamin D in autism spectrum disorder children is associated with a reduction in psychiatric manifestations (Stubbs, Henley, & Green, 2016; Cannell, 2017; Arastoo et al., 2018)

Environmental and genetic factors are important in the etiology of autism. Vitamin D is crucial for several key physiological processes, including brain development , DNA repair, and regulation of many genes. Evidence indicates that prenatal and early postnatal vitamin D deficiency increases autism risk, probably through multiple effects , including impaired brain development and increased de-novo mutations . Vitamin D helps protect against oxidative stress , which is a key cause of DNA damage , and also aids in the repair of DNA damage once it occurs (Currenti, 2010; Kinney, Barch et al., 2010).

Like most steroid hormones , activated vitamin D acts as a molecular switch, activating more than 200 target genes, thereby regulating gene expression through multiple mechanisms. Vitamin D may therefore play a major role in the etiology of autism by influencing the expression of genes related to autism (Azzam et al., 2015)

2.7.3. Immunity problems

Vitamin D plays an important role, not only for bone health, but also in the immune system. Both in vitro and clinical studies have demonstrated that vitamin D is important for the innate and adaptive immune response (Kempker, Han, Tangpricha, Ziegler, Martin, 2010).

In children, vitamin D insufficiency is common in patients who are hospitalized or have a severe infectious process and is associated with increased mortality. Vitamin D enhances the anti-microbial response of adults, suggesting a protective role of vitamin D in infection . Particularly, anti-microbial peptides such as human cathelicidin antimicrobial peptide (hCAP18) and β-defensin are up-regulated in response to vitamin D therapy (Moromizato et al., 2014; Hebbar et al., 2014)

Vitamin D seems to interact with the immune system through its actions on the regulation and differentiation of cells like lymphocytes , macrophages, and natural killer cells (NK) , besides interfering in the in vivo and in vitro production of cytokines. Among the immunomodulatory effects demonstrated we should mention: a reduction in the production of interleukin-2 (IL-2), gamma interferon (INFγ) , and tumor necrosis factor (TNF); inhibition of the expression of IL-6; and inhibition of the secretion and production of autoantibodies by B lymphocytes (Marques et al., 2010)

There is extensive molecular evidence supporting vitamin D supplementation of deficient populations as a means to combat both the incidence and severity of infectious diseases. This would not be of substantial clinical relevance if populations were generally vitamin D sufficient. However , observations of widespread vitamin D deficiency. vitamin D supplementation reduced the risk of upper respiratory tract Infection URTIs children (Mailhot, & White, 2020).

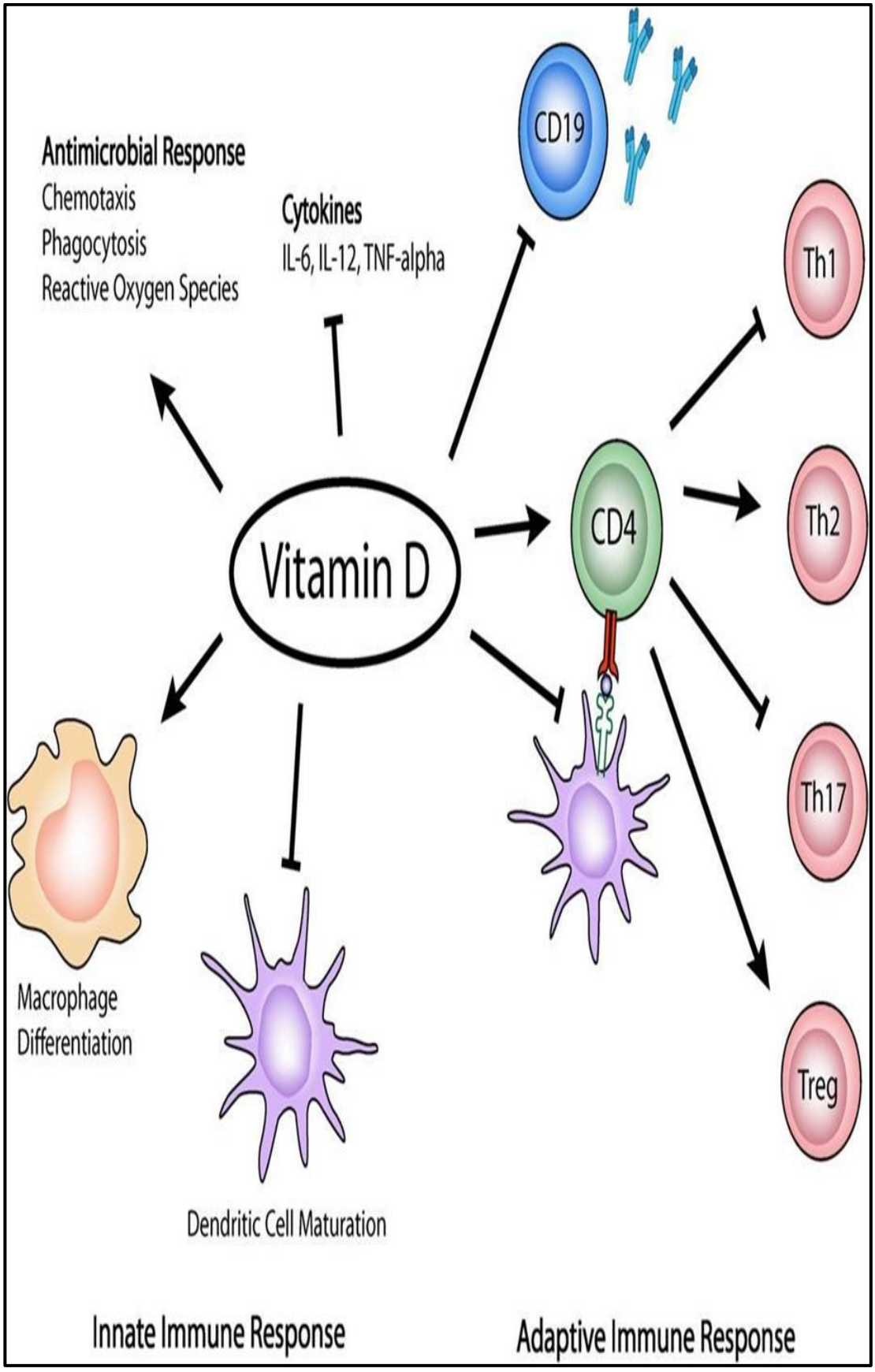


Figure 2.3. Vitamin D influences on immunity (Iruretagoyena, et al., 2015)

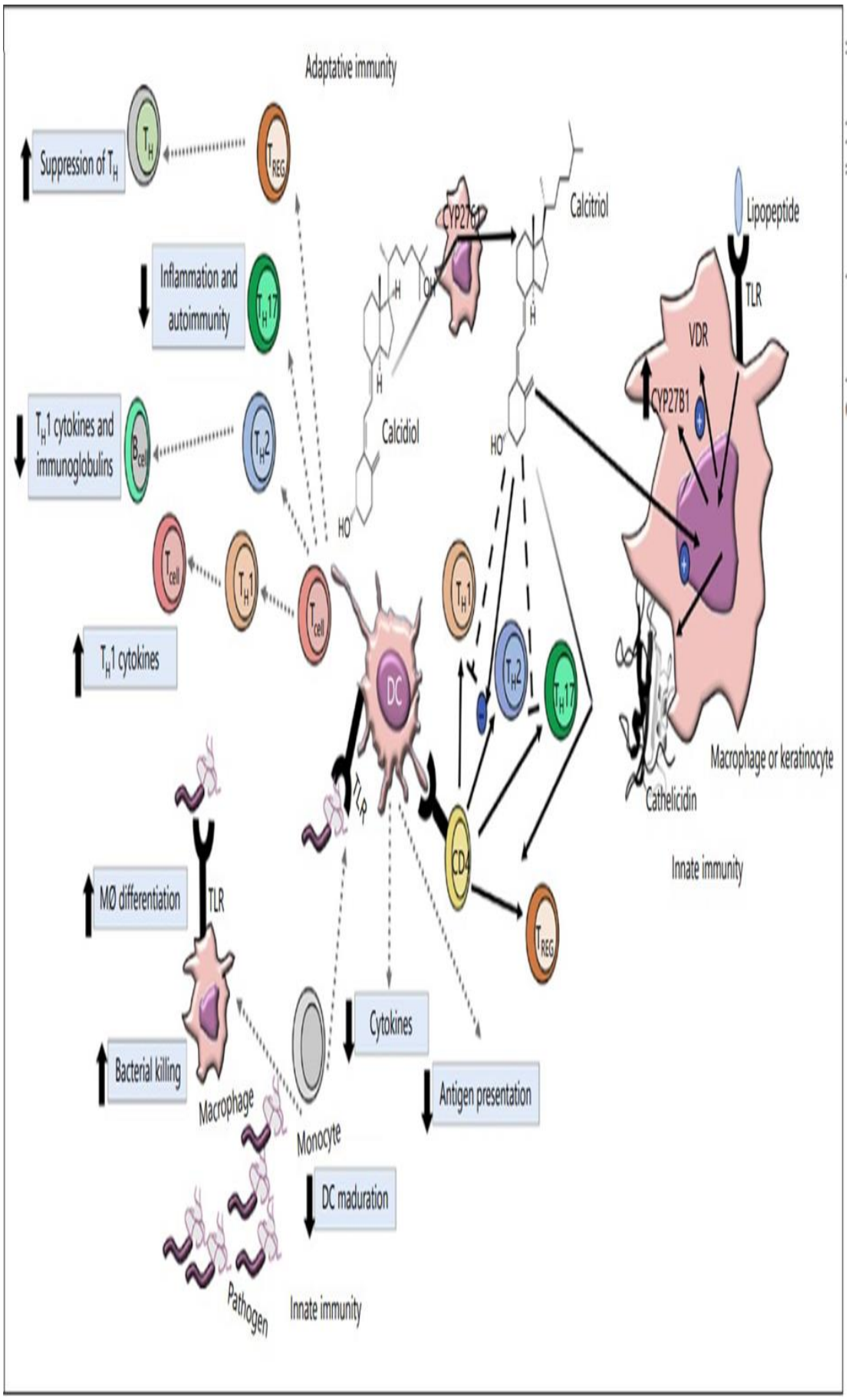


Figure 2.4. Vitamin D & Immunity (Gil, Plaza-Diaz, & Mesa, 2018)

Vitamin D has many and profound effects on the immune system. Vitamin D deficiency is known to be related to the development of autoimmune diseases. In particular, vitamin D deficiency is related to the development and severity of rheumatoid arthritis (RA) . RA develops in patients with vitamin D deficiency, and the activity of the disease relates to vitamin D deficiency . Vitamin D deficiency is also related to the development of systemic lupus erythematosus (SLE) . SLE develops in patients with vitamin D deficiency, and the activity of the disease is also greater in patients with vitamin D deficiency . Vitamin D deficiency is also related to the development and the severity of multiple sclerosis (Kostoglou-Athanassiou, Athanassiou, & Athanassiou, 2019)

Vitamin D is important to the function of the immune system and vitamin D supplements have previously been shown to lower the risk of viral respiratory tract infections . Our statistical analysis suggests this may be true for the COVID-19 infection (Brooks, 2020)

Vitamin D is involved in the regulation of the innate immunity as it enhances the defense system of the organism against microbes and other pathogenic organisms, and it modulates the adaptive immune system through direct effects on T-cell activation and the phenotype and function of antigen-presenting cells, particularly dendritic cells (Chun, Liu, Modlin, Adams, & Hewison, 2014).

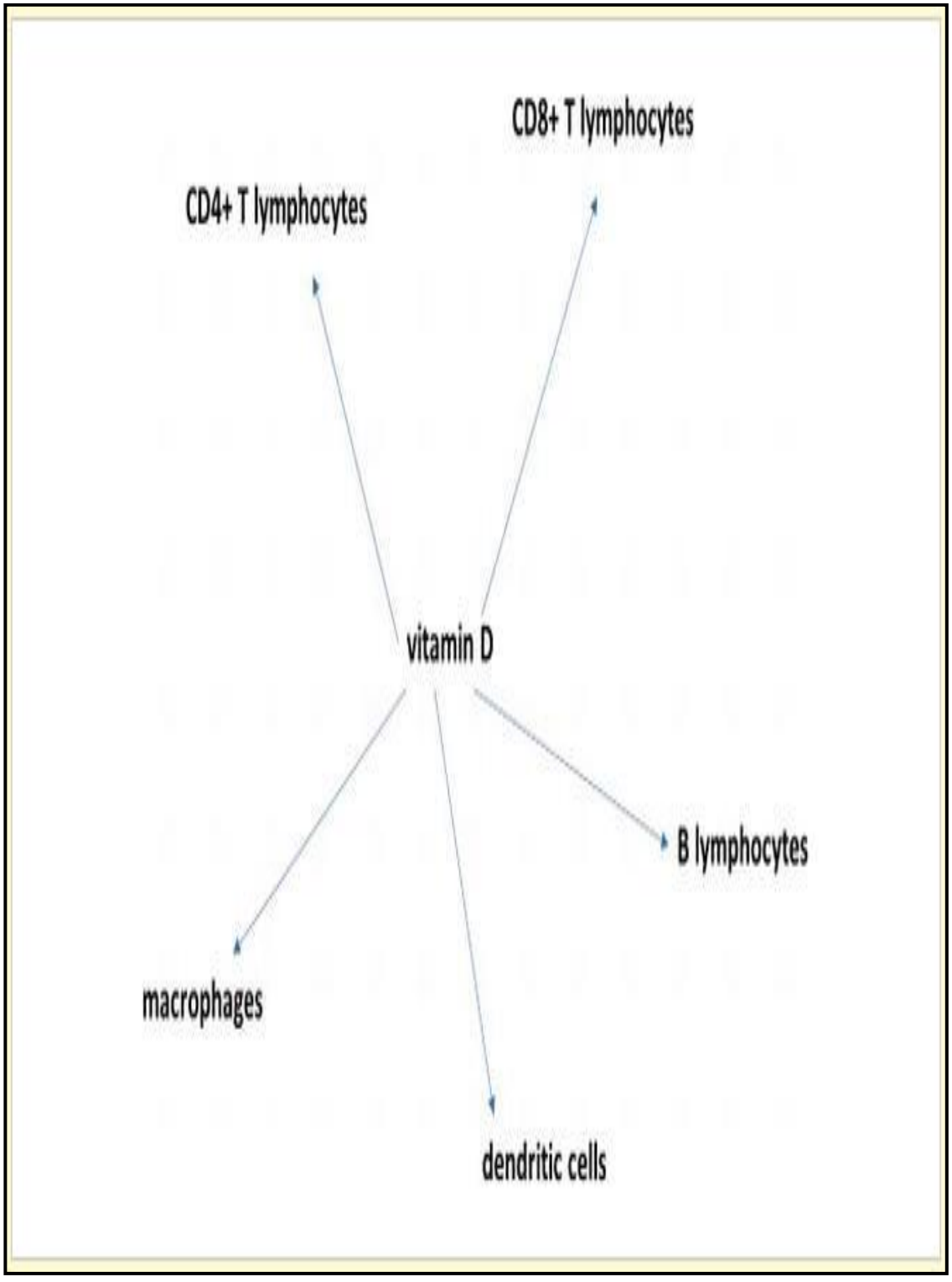


Figure2.5. Cells of the immune system regulated in part by vitamin D (Kostoglou-Athanassiou,Athanassiou, & Athanassiou, 2019)

2.7.4. Cardiovascular problems

There is evolving data about the possible relationship of vitamin D with CVD risk factors. The vitamin D receptor is expressed in cells throughout the vascular system. Many cell types, including vascular smooth muscle cells, endothelial cells, and cardiomyocytes , produce 1α-hydroxylase , which converts 25-hydroxyvitamin D to calcitriol , the natural ligand of the vitamin D receptor. Calcitriol has been shown to inhibit vascular smooth muscle cell proliferation , regulate the renin-angiotensin system, decrease coagulation , and exhibit anti-inflammatory properties (Danik, & Manson, 2012; Norman, & Powell, 2014).

Vitamin D deficiency has been linked to several cardiovascular risk factors through increased renin and angiotensin II synthesis, vitamin D deficiency can increase the production of reactive oxygen species and G protein RhoA, resulting in inhibition of the pathways necessary for intracellular glucose transporter and thus the development of insulin resistance and metabolic syndrome. Also, the direct effects of vitamin D upon smooth muscle calcification and proliferation could contribute to their effects on cardiovascular health (Wang et al., 2012; Kheiri et al., 2018)

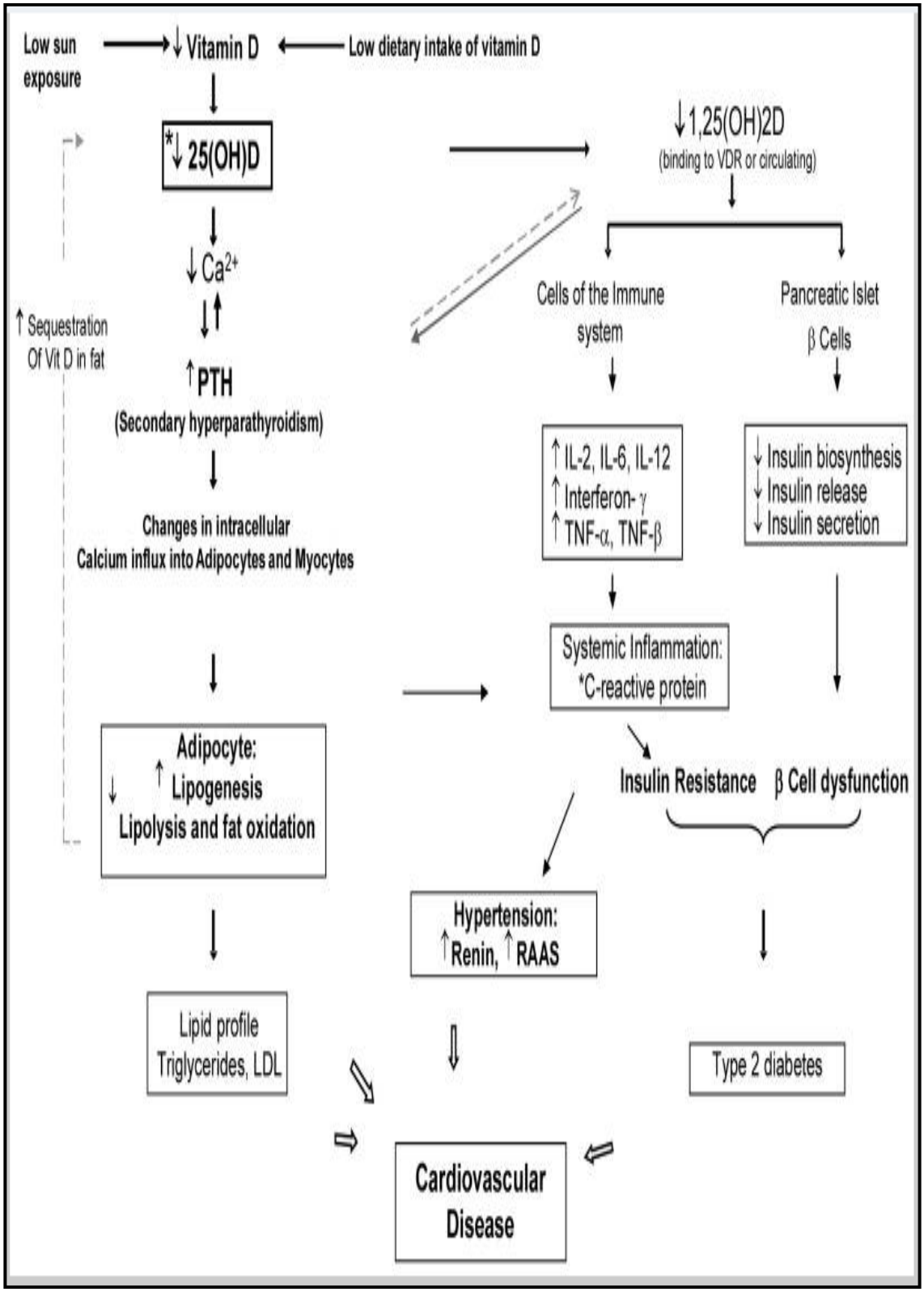


Figure 2.6. Mechanisms underlying the interrelationships among vitamin D deficiency, cardiovascular disease risk factors such as insulin resistance, hypertension and diabetes. (Danik, & Manson, 2012)

2.7.5. Rickets

Vitamin D deficiency results in abnormalities of calcium, phosphorus, and bone metabolism. VDD causes a decrease in the absorption of dietary calcium and phosphorus, increasing parathyroid hormone (PTH) levels. The PTH-mediated increase in osteoclastic activity creates local foci of bone weakness and causes a generalized decrease in bone mineral density (BMD) , resulting in osteopenia and osteoporosis. In young children who have little mineral in their skeleton, which results in a variety of skeletal deformities classically known as rickets. VDD also causes muscle weakness ; affected children have difficulty in standing and walking , whereas the older child have increasing sway and more frequent falls, thereby increasing their risk of fracture . Vitamin D deficiency can lead to a loss of bone density , which can contribute to osteoporosis and fractures (broken bones) (Nair, & Maseeh, 2012; Christodoulou, Goula, Ververidis, & Drosos, 2013; Saglam, Kizildag, Toprak, Alp, & Yalcinkaya, 2017).

Vitamin D helps the body absorb calcium and phosphate from the intestines. Children can get vitamin D from various food products, including milk , eggs, and fish. The body also produces the vitamin when exposed to sunlight. Vitamin D deficiency makes it difficult for the body to maintain sufficient levels of calcium and phosphate. When this occurs, the body produces hormones that cause calcium and phosphate to be released from bones. When bones lack these minerals, they become weak and soft (Trautvetter et al., 2014)

Severe vitamin D deficiency can also lead to other diseases, particularly among children in causing rickets as the bone being soft and bend. African American infants and children are at higher risk of getting rickets. In adults , severe vitamin D deficiency leads to osteomalacia, which considered as weak bones, bone pain, and muscle weakness (Gorter, Oostdijk, Felius, Krijnen, & Schipper, 2016).

Rickets is a skeletal disorder that's caused by a lack of vitamin D, calcium, or phosphate as nutrients that are important for the development of strong, healthy bones. When the proportion of those menirals went down, the child exposed to stunted growth, and, in severe cases, skeletal deformities (Ngari et al., 2018)

Rickets is most common in children who are between 6 and 36 months old. Children are at the highest risk of rickets because they're still growing. They might not get enough vitamins D if they live in a region with little sunlight, follow a vegetarian diet, or don't drink milk products, and in some cases, the condition is hereditary. All reasons will lead to specific symptoms effect varated sits of the child's body like musculoskeletal and teeth deformities (Choi, 2017; Sahay, & Sahay, 2012; Atapattu, 2013)

2.8. Nursing role

Nurses has an important role in identifying and treating vitamin D deficiency in patientsNPs can assist these patients with optimal nutrition and vitamin supplementation to maintain good health (Chaney, 2015).

Moreover, nurses have achieve role in the prevention of VDD through health education and instructions. Nurse's should take urgent steps through motivation and to create awareness about VDD . Health education raising mothers' awareness about vitamin D, its importance to health and wellbeing, the consequences of its deficiency and practices to prevent VDD . Nurses could educate mothers about sources of vitamin D and importance of sun exposure because it is not possible to obtain an adequate amount of vitamin D from dietary sources alone. Therefore, a combination of sun exposure along with adequate vitamin D supplementation for all children will prevent vitamin D deficiency/insufficiency. The nurse has a role in teaching families how to deal with their children and provide needed. Nurse educates mothers to how to use vitamin D supplement, time to child exposure to sun, benefits, and deficiency of vitamin D, the important nutrition habits and food according to the child's age group, educate mothers about children normal weight, observe and assess child movement and any extremities abnormalities (Kamel, Abd El-Hamid, Abd El-Megeed, Mohy El-Deen, 2017).

2.9. Therapeutic management of vitamin D deficiency

1. Vitamin D supplementation for the prevention of vitamin D complications
2. Oral calcium, 500 mg/ day, either as dietary intake or supplement, should be routinely used in conjunction with vitamin D in the treatment regardless of age or weight

3. Dietary practices and nutrient intakes among mothers associated with nutritional risk in Infants

4. Maternal vitamin D deficiency should be avoided by ensuring that women of childbearing age meet intakes of 600 IU/day recommended

5. Early feeding, supplementation, complementary feeding, and nutrient intake for infants

6. Sunlight exposure. Because ultraviolet B (UVB) rays trigger the epidermal synthesis of pre-vitamin D 3 , restricted exposure to the sun increases the risk of vitamin D deficiency

7. No safe threshold of UV exposure allows for sufficient vitamin D synthesis

8. Lactating women should ensure they meet the dietary recommendations for vitamin D (600 IU /day) for their own needs , but not for the needs of their infantlactating women should not take high amounts of vitamin D as a means of supplementing their infant.

9. Supplementing mothers with 600 IU /day of vitamin D and ensuring they receive recommended calcium intakes or appropriate therapy of maternal conditions predisposing to hypocalcemia or vitamin D deficiency (Munns et al., 2016; Murrell, 2017; Meštrović, 2018)

Recommendations for Vitamin D Supplementation in childhood and pregnant women (Rusińska et al., 2018).

1. Preterm Neonates

A. Neonates Born at ≤32 Weeks of Gestation

- It is recommended to start the supplementation at a dose of 800 IU /day from the first days of life (if enteral nutrition is possible) , regardless of the way of feeding
- Supplementation should be carried out under the control of 25(OH) D concentration , both during hospitalization (the first control after 4 weeks of supplementation) , as well as in the outpatient care
- When achieving a total dose of 1,000 IU /day, combining supplements and diet , there is a risk of vitamin D overdose , particularly in neonates with birth weight <1,000 g

B. Neonates Born at 33–36 Weeks of Gestation

- 400 IU/ day from the first days of life , regardless the way of feeding
- There is no need to assay 25(OH) D concentrations routinely
- Supplementation under the control of 25(H)D concentration should be considered in children in the risk groups (parenteral nutrition >2 weeks , ketoconazole >2 weeks ,

anticonvulsant treatment, cholestasis, and birth weight <1,500 g) (Munns et al., 2016)

2. Neonates Born at Term and Infants

- 0–6 months: 400 IU/day from the first days of life, regardless of the way of feeding.
- 6–12 months: 400–600 IU /day, depending on the daily amount of vitamin D taken with food

3. Children (1–10 Years)

- In healthy children sunbathing with uncovered forearms and legs for at least 15 min between 10.00 and 15.00 h, without sunscreen in the period from May to September, supplementation is not necessary , although still recommended and safe
- If above insolation guidelines are not fulfilled, supplementation of 600–1000 IU/day is recommended, based on body weight and the dietary vitamin D intake , throughout a year

4. Adolescents (11–18 Years)

- If above insolation guidelines are not fulfilled , supplementation of 800–2000 IU /day is recommended , based on body weight and the dietary vitamin D intake, throughout a year

5. Pregnant and Lactating Women

- Women planning pregnancy should receive adequate vitamin D supply, the same as in the general adult population if it is possible under the control of 25(OH)D concentration

- When pregnancy is confirmed, supplementation should be carried out under the control of 25(OH)D concentration , to maintain optimal concentrations within ranges of > 30–50 ng/ml

- If the assessment of 25(OH)D concentration is not possible, it is recommended to use vitamin D at a dose of 2,000 IU/ day, throughout pregnancy and lactation (WHO, 2012)

Figure 2.7. Food Contain on Vitamin D (Organic Allergy Relief, 2021)

2.10.1. Mothers' knowledge

The level of knowledge of mothers regarding the use of Vitamin D supplementation for infant health is low. The use of vitamin D supplementation was low in the lactating mothers, but the mothers" provision of vitamin D supplementation to their babies was high during infancy (Dağhan, et al., 2019).

Alwadei et al., (2018) found that 94.3% of mothers heard about vitamin D , 68% knew that vitamin D is important, and 72.11% believed that vitamin D is manufactured in the body . More than two thirds (69.83%) said that the ultraviolet sun-rays is the main source of vitamin D and 68.88% of parents declared that they had attend a lecture given by a physician in in the primary health care center on the importance of vitamin D where, fathers (40.2%) were more than mothers (26.6%) in getting their information .

Mothers must know the food considered as the main source of vitamin D, that the child gets enough vitamin D from sources other than supplements, baby get enough vitamin D from going outside, kinds of affordable meals can prepare which contain vitamin D & VVD need during breastfeeding (Day et al., 2019)

2.10.2. Mothers Attitudes

Rasheed, Taha, & Rasheed, (2017) stated that the mothers attitude include mothers think that Vitamin D supplement is necessary to infant . Mothers was given Vitamin D supplement by a doctor order. In my opinion, mothers think that giving breast feeding to infants more important than vitamin D supplement In my opinion, since baby is being

exposed to sunlight not need vitamin D drops. Since mother on vitamin D supplement, the baby does not need Vitamin D drops. Mothers will advise my relative or friends to give vitamin D supplements to their infants

It is important that the right attitudes be developed in mothers to help ensure that they start and maintain vitamin D supplementation, with proper doses and frequencies, for their babies (Dağhan, et al., 2019).

Gedamu, & Tafere, (2019) found that 46% of mothers agreed with an advantage of sunlight exposure of their infants. More than half, (51.98%) of respondents were happy when they exposed/if they exposed their child to sunlight and the remaining. About (46%) of respondents perceived consequences after they exposed or if they exposed their child to sunlight to become strong and the remaining, (54%) were to be healthy, help to sleep, and others

2.10.3. Mothers Traditional practice

Mothers play a key role in prevention of vitamin D deficiency VDD particularly rickets by exposing their infants to sunlight adequately. It is important to limit the sun exposure between the hours of 10 a.m. and 4 p.m. for infants. In infants 1 week after birth the level of vitamin D is related to the level in their mothers during pregnancy. Adequate supplementation of vitamin D by giving food contain of vitamin D (Bedaso et al., 2019)

Mothers measured their children's' weight and height as well as their abilities and capacities at home and compare that with other children at same age in the neighbor. Mothers have role in monitoring

their children growth and development especially physical and cognitive development. Mothers follow the child weight status and stature and movements. Also, follow the child language and reaction with environment (Misra et al., 2008; Huybrechts et al., 2011)

Mothers using exposure to sun and gave their children vitamin D supplementation for manage vitamin D deficiency (Selim et al., 2020)

Soliman et al., (2020) found that forty six percent of mothers had a good practice towards vitamin D and its supplementation (total practice score percentage ≥75%). More than half of mothers (53.5%) were exposed to the sun from 10 am to 3 pm. The majority of mothers (91.1%) were exposed to the sun more than one hour per week. Only (48.7%) of the mothers gave their children vitamin D supplementation & about half of them (52%) started giving vitamin D supplement to her children since birth

Previous studies

Study one (Assessment of Knowledge, Attitude, and Practice of Sunlight Exposure of Infants among Mothers Attending in Governmental Health Facilities in Farta District, South Gondar Zone, North West Ethiopia, 2018) Gedamu, & Tafere, (2019) in their study stated that sunlight exposure serves an important purpose in human bodies. It promotes good health and plays a major role in the production of the very essential vitamin, vitamin D. Vitamin D is important for the growth of healthy, normal bones. Research conducted in different areas sugges-ting that daily exposure to sunshine remains the cheapest, safest , and most effective

method of preventing rickets. The study aims to assess knowledge, attitude, and practice of infants to sunlight exposure among lactating women in Farta district , in 2018. A cross-sectional study design was conducted among mothers attending the selected health center. A systematic sampling method was used to select individual respondents. They found that among 357 respondents identified for the study, 95% were responding to the interview . Of the total respondents, 49.9%, 46%, and 45.7% of them had poor knowledge , unfavorable attitude , and poor practice about sunlight exposure, respectively. The results of this study showed that almost half of the mothers had inadequate knowledge , attitude, and inadequate practice about sunlight exposure. Therefore , mothers need to be educated about the importance of sunlight exposure

Study two (Mothers' Awareness regarding Vitamin D Deficiency among Their Infants in Kalyobia Governorate) et al., (2017) in their study stated that vitamin D deficiency is a worldwide problem that is largely unknown by the majority of the population and its prevalence is high even in developed and sunny countries. The purpose of the study was to assess mothers' awareness regarding vitamin D deficiency among their infants in Kalyobia Governorate. A descriptive correlational research design was utilized in this study. The study was conducted at 4 Health Care Centers in Kalyobia Governorate: Benha 1, Toukh, Bahtem 1, and Begam Health Care Center. A purposive sample was used in this study to select 362 mothers. Instruments of data collection : An interviewing questionnaire which consists of three parts to assess a): Social characteristics b) : Knowledge about vitamin D and its deficiency and, c) : Practices regarding prevention of vitamin D deficiency, II) :

Scale to measure attitude about the importance of vitamin D and its supplementation. Regarding mothers' knowledge, 56.9% of the mothers had poor knowledge, 76.8% of mothers had unsatisfactory practices regarding the prevention of vitamin D deficiency , and 64.4% of the mothers had a positive attitude regarding the importance of vitamin D and its supplementation . There was a highly statistically significant relationship between the total knowledge score of mothers and their age, educational level, occupation, monthly income , and residence. There was a positive statistically significant correlation between the total knowledge score, total attitude score, and total practice score about vitamin D deficiency. All health care professionals are encouraged to educate mothers the importance of vitamin D and the consequences of its deficiency through health educational program during postnatal or well-baby visits to assure a healthy population

Study three (Knowledge, attitude and practice of Iraqi mothers towards Vitamin D supplementation to their infants in Baghdad Al - Rusafa 2016) Rasheed et al., (2017) in their study stated that routine supplementation of vitamin D to infants is justifiable since vitamin D deficiency , and its consequences are highly prevalent not only in developing countries but worldwide. Maintaining a normal level of vitamin D is crucial to have a normal skeletal , as well as, extra-skeletal health. Knowledge of mothers regarding the importance of vitamin D supplementation affects the health of their babies positively if accompanied by appropriate practice . The study aims to determine the level of knowledge, attitude , and practice of Iraqi mothers of under or equal 12 months old infants in Baghdad , AL-

Rusafa , regarding vitamin D supplementation for their infants. A descriptive cross-sectional study design, a questionnaire- based study was conducted at six primary health care centers in Baghdad AL-Rusafa . 400 mothers of under or equal 12 months old infants attending primary health care centers (PHCC) for routine vaccination and follow up of their infants were included in the study from the 10th of February 2016 till the 10th of June 2016 . They found that mean age of 27.11 years ±6.65572 , Only (45%) (n=180) of them had given their infant's vitamin D drops , with a mean score of vitamin D supplementation practice of 1.26 ± 1.51265 from 4 which was significantly correlated with their knowledge score which was 3.6100±2.14987 from 9 and their attitude score which was 3.6275 ± 1.89644 from 6 . The study revealed poor knowledge , fair attitude , and poor practice among mothers regarding vitamin D supplement for their infants

Study four (Knowledge, attitude, and practice of general practitioners in Dammam , Saudi Arabia towards Vitamin D supplementation to infants) Babli et al., (2015) in their study stated that with the report of high prevalence rate of Vitamin D deficiency in the literature since the 1980s , the condition can be considered an epidemic in Saudi Arabia . However , no specific steps have been taken by the Ministry of Health to tackle the problem . Moreover , little is known about general practitioners ' (GPs) knowledge , attitude , and practice (KAP) of Vitamin D supplementation for infants. The study aims to measure the KAP of GPs , of Vitamin D supplementation for infants in Dammam , Saudi Arabia . This was a cross- sectional study of GPs practicing in

primary healthcare centers in the Dammam area of Saudi Arabia . All the 110 GPsv working in primary health centers (PHCs) in Dammam were invited to participate in the study . Datas were collected with the help of a self-administered questionnaire. Data was analyzed using SPSS 20.0. Statistical analysis included descriptive analysis of all the variables, expressed as the mean (standard deviation [SD]) or the median if not normally distributed. Ninety-three GPs working in the Dammam area participatedv in the study . Thirty percent had excellent knowledge of Vitamin D. Ninety two percent had a positive attitude toward Vitaminv D supplementation and sixty percent regularly prescribed Vitamin D supplementation for infants. The majority of GPs had a positive attitude toward Vitamin D supplementationv for infants. However , their knowledge and practice need improvement

Study five (Knowledge, attitude, and practice of health care practitioners in Saudi Arabia, about prevention of vitamin D deficiency in infancy) AlBishi et al., (2018) in their study to understand the knowledge , attitude, and practice of healthcare practitioners in Saudi Arabia, concerning vitamin D supplementation . A cross - sectional study was conducted among healthcare practitioners in the Tabuk region of Saudi Arabia between January 2015 and December 2016 . A questionnaire assessing knowledge , attitude , and practice concerning the prevention of vitamin D deficiency was distributed to 100 healthcare practitioners . There was a good understanding of the importance of vitamin D deficiency ; and overall practices were good. The average knowledge score was 4.75/8 (range 2-7), largely

due to 85% of recipients identifying sun exposure between 6-7 am as the optimal time. There was a lack of understanding also, that as little as 10 minutes exposure is of benefit . This study highlights the need for distribution of the recommendations for vitamin D supplementation in KSA , as widely as possible . This study suggests that healthcare practitioners understand the importance of correction of vitamin D deficiency . Deficiencies in knowledge concerning sun exposure were identified. Dissemination of this information is, therefore, likely to impact significantly on the practice of a receptive clinical population

Study six (The State of Knowledge about Nutrition Sources of Vitamin D , Its Role in the Human Body , and Necessity of Supplementation among Parents in Central Poland) Zadka et al., (2018) in their study stated that the percentage of children with vitamin D deficiency in Poland is alarming. The study aimed to assess the knowledge about sources of food and the function of vitamin D , as well as the frequency of its supplementation. A survey was conducted among the parents of children from Central Poland attending primary schools , and a questionnaire containing mainly open -ended questions was used to collect the data . Most mothers knew at least one of the functions of vitamin D in the body but had a low level of knowledge about its dietary sources . Only a small group of respondents supplemented themselves and their children with vitamin D. Statistically significant influences on the level of knowledge about the functions and sources of vitamin D were the place of residence (i.e., better knowledge in the countryside) and mothers ' level of education (i.e., the better educated , the

greater knowledge). In the case of monthly income level, such impact was observed only with the knowledge of vitamin D functions . Concerning the frequency of supplementation , only the maternal level of education had a statistically significant effect (i.e., the higher the education level , the higher the frequency of supplementation) . Also , mothers who were aware of the functions of vitamin D and nutritional sources, significantly more frequently supplemented vitamin D .

Study seven (Knowledge, Attitude and Practice Regarding Vitamin D Deficiency among Antenatal Mothers in Tamilnadu) Kavitha et al., (2015) in their study stated that our main aim is to explore the knowledge, attitude, and practice of vitamin D supplementation among pregnant mothers. The study design is a descriptive study and was carried out in Antenatal Out Patient Department, SRM Medical College Hospital and Research Centre, Kattankulathur, Tamilnadu. Eighty-six (86) Samples were selected by a simple purposive sampling technique between May to November 2014 . A structured questionnaire was used to collect the data from samples. The collected data were analyzed using descriptive statistics. They found forty-eight (48%) of antenatal mothers were in the group of 26 to 30 years. Thirty-nine (39%) had studied up to the graduate level. Most of them were house maker (86%). Ninety-three (93%) of them were joint families. Thirty-three (33%) had a monthly income of Rs. 15188-30374. The majority of them ninety-two (92%) were non-vegetarian . Sixty-seven (67%) of them are prime mothers. None of them were taking vitamin D supplements during the antenatal period. 43% of them were using a cosmetic cream containing sun protection factor (SPF) more than 8,

without their knowledge. Fifty-three (53%) of them got knowledge of vitamin D from books and magazines. The majority of subjects forty-four (44%) were able to recognize sunshine as a source of vitamin D and forty-eight (48%) of the subjects did not know the source of the vitamin D. The majority of the study participants had limited knowledge , poor practices , and did not have a positive attitude towards the benefits of vitamin D supplements . To improve in this situation mother should be educated about the importance of vitamin D in planning health education interventions

Study eight (Knowledge, attitude and practice of patients attending primary care centers toward vitamin D in Kuwaitv) Al Bathi et al., (2012) in their study stated that extracellular calcium is vital for the functioning of many metabolic processes and neuromuscular activities . Awareness and practice of patients with vitamin D deficiency are very important . The study aims to explore the knowledge , attitude , and practice of patients receiving vitamin D supplements and attending primary health care (PHC) in Kuwait . Subjects and methods : The study design is a simple descriptive cross-sectional one that was carried out in two PHC centers. Two hundred patients were selected randomly from a list of all registered patients in the selected centers . Criteria for inclusion included adult age ⩾18 years, diagnosis with hypo vitaminosis D within a year , and under vitamin D supplement . Only 28.5% of participants were aware of their condition , 53.5% related painv to vitamin D deficiency , 33.5% knew the presence of relation between vitamin D deficiency and joint pain. One- third of the participants received the loading dose of vitamin D , and, 17.5%

had the maintenance dose. Only 21.0% believed that they feel better regarding musculoskeletal symptoms after taking treatment doses and 12.5% of the participants knew that the level of vitamin D dropped again after stopping a medication. Only 29.5% knew the relation between vitamin D and other diseases . The majority of patients (85.5%) agreed about the importance of sunshine as a source of vitamin D and 60.0% thought that they can get vitamin D from the nutrients . Regarding the main sources of knowledge about vitamin D , 4.5 % of patients got knowledge from doctors , 12.5% from the media , 29.0% from relatives and friends , 8.5% from background information , and 9.5% from journals and magazines . The majority of the study participants had limited knowledge , poor practices , and negative attitudes toward vitamin D problems . Planning health education interventions for this group of patients are essential .

CHAPTER THREE

METHODOLOGY

Chapter Three

Methodology

This chapter deals with the process, which begin with the official steps according to university standards which begin from the administrative arrangement till the limitations and strengths of the study.

3.1. Design of the Study :

A descriptive study approach was used to investigate mothers' knowledge, attitudes, and traditional practices about vitamin D inadequacy among early childhood in the middle Euphrates teaching pediatric hospitals in the period December 1st, 2020 to August 1st 2021

3.2. Administrative Arrangements:

Approval of the Graduate Studies Committee at the College of Nursing / University of Babylon on the title and objectives of the study through the first discussion of the protocol and the second approval after presenting the topic to the faculty research ethics committee. Ethical approval was obtained from ethical committee of research in the Faculty of Nursing/University of Babylon regarding confidentiality and anonymity of participants (Appendex A). The researcher was granted the administrative order to covered the Babylon health directorate, Karbala health Directorate, Al-Najaf Al-Ashraf health Directorate, Al-Dywania health directorate to make data collection easier (Appendix B)

3.3 . Setting of the Study:

The study was conducted at four Middle Euphrates teaching hospitals, which include gynecological and pediatric teaching hospital, The Babylon teaching hospital for maternity and children, the Karbala teaching hospital for pediatrics, and the Al-Zahra teaching hospital for pediatrics

3.4. Sample of the Study

The research sample includes (586) mothers of children under 5 years entered the hospital. They are selected by using non probability sampling (convenience sample). The sample size was detected by taking the number of cases admitted to hospital through 2020 at each setting involved in the study and then take the mean of each hospital as 20% of the total of pediatrics.

The total number of admitted cases to Gynecological and pediatric teaching hospital in Al-Dywania city was (7682) at past year, the mean of this cases was (640) cases, therefore the researcher selected 20% of the 640 cases wich include the 128 sample.

The total number of admitted cases to Babylon teaching hospital for maternity and pediatric was (8765) at past year, the mean of this cases was (730) cases, therefore the researcher selected 20% of the 730 cases wich include the 146 sample.

The total number of admitted cases to Karbala teaching hospital for pediatric was (11562) at past year, the mean of this cases was (963) cases, therefore the researcher selected 20% of the 963 cases wich include the 193 sample.

The total number of admitted cases to Al-Zahraa teaching hospital for pediatric in Al-Najaf city was (7133) at past year, the mean of this cases was (594) cases, therefore the researcher selected 20% of the 594 cases wich include the 119 sample.

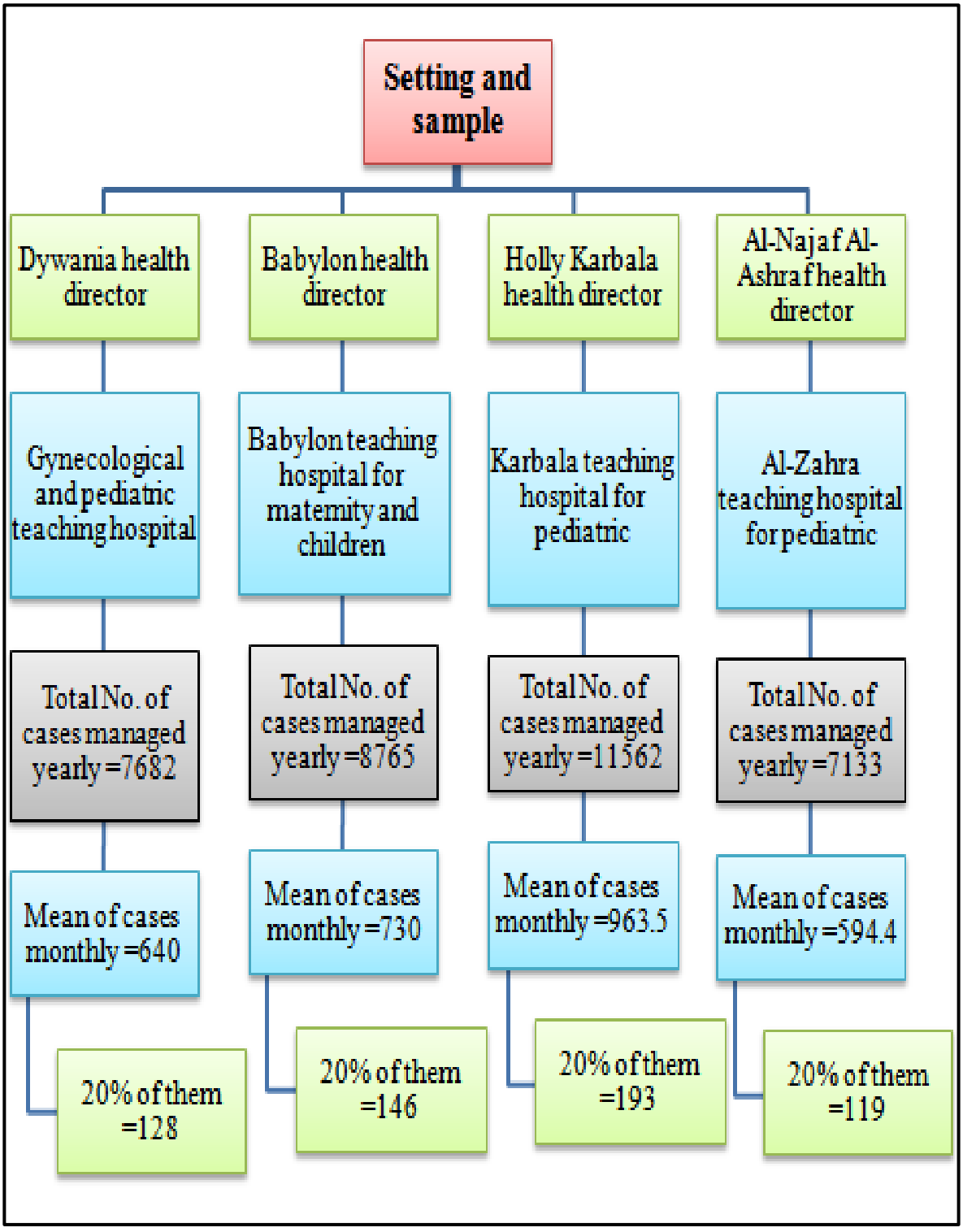


Figure 3.1. Distribution of health directors and the involved hospitals

3.6. The Study Instrument:

The study instrument was designed based on a review of literature and previous studies to knowledge, attitudes and traditional practices of vitamin D deficiency. It is a questionnaire format for the desired research objectives, and it is made up of four components, as indicated in the diagram (Appendix C).

3.6.1. Demographic Data Form related to mothers and their children:

This part consists of (9) items which include: (age of child, gender of child, age of mother, place of residence, type of family, number of children, mother's occupation, level of education and socioeconomic status.

3.6.2. Mothers' knowledge about vitamin D deficiency:

This part is a questionnaire composed of 44 items related to mother's knowledge about vitamin D deficiency answered by (I know, I not sure, and I don’t know).

3.6.3. Mothers' attitudes about vitamin D deficiency

This part is a questionnaire composed of 15 items related to mother's attitudes about vitamin D deficiency answered by (agree, partially agree, and disagree).

3.6.4. Mother's traditional practices about vitamin D deficiency

This part is a questionnaire composed of 15 items related to mothers traditional practices about vitamin D deficiency answered by (always, sometimes, and never).

3.7. Rating and Scoring of the Study Instrument:

The knowledge questionnaire form has been scored and rated on three levels Likert scale (3) points for I know, (2) points for not sure and (1) point since I do not know , which were evaluated from a cutoff point (0.66) based on scores (1, 2, and 3), respectively. Mothers' knowledge levels are classified based on the scores of their responses.:

(1 - 1.66) = low level , (1.67 -2.33) = moderate level and (2.34 - 3.00) = high level

The attitudes questionnaire form has been scored and rated at three levels Likert scale, (3) points for agreeing, (2) points for partially agree and (1) point for the disagree which assessed from cutoff point (0.66) due to scores (1, 2 and 3) respectively .Scores of responses are categorized according to the following levels of mothers´ attitudes:

(1 - 1.66) = low level , (1.67 - 2.33) = moderate level and (2.34-3.00) = high level

The traditional practices questionnaire form has been scored and rated at three levels Likert scale, (3) points for always, (2) points for sometimes and (1) point of the never which assessed by the cut off point (0.66) due to scores (1, 2 and 3) respectively . Scores of

responses are categorized according to the following levels of mothers´ traditional practices:

(1 -1.66) = low level, (1.67 -2.33) = moderate level and (2.34 -3.00) = high level

$$\text{Range} = \text{the maximum value} - \text{the minimum value}$$

$$\text{Cut of point} = \frac{\text{Range}}{\text{No. of assessment levels}}$$

3.8. Validity of the Study Instrument

The instrument's content validity was determined by a panel of experts with more than five years of experience in their field in relation to exploration. the questionnaire's rationality, relevance, and sufficiency in achieving the current study's objectives (Appendix D). The question items were corrected and altered in response to the experts' notes and advice.

A draft questionnaire is developed and distributed to the (22) experts. They are six nursing faculty members from the College of Nursing/University of Babylon, (5) faculty members from College of Nursing/ University of Baghdad, (9) faculty members from College of Medicine/ University of Al-Kufa, (2) faculty members from the Ministry of Health. The mean of the experts ´years of experience is (28.59) and standard deviation (S.D) (7.43) , they are all requested to go over the questionnaire and the program. According to the findings, the majority of experts believed that the questionnaire is suitably structured and created to measure the phenomena under investigation.

The experts'suggestions and agreements were considered, and the final copy of the developed instrument became appropriate as a tool for performing the study and attaining the goal.

3.9. Pilot Study :

A trail version of a study (pilot study) was carried out from May 3ed to 21st in 2020 on (24) mothers selected, prior to the original study and excluded from the sample of the study. The process of answering took about (30-45) minutes (the answering of questions done by using self-administrative method and using interview with mothers of children whose can't read and write)

The pilot study objectives are to:

- Augment the clearance and reliability of the questionnaire.
- Check the time required for answering the questionnaire and information accumulation.
- Check the wording of questionnaire form and level of sample understanding the questionnaire.

3.10. Reliability of the Study :

The research instrument's reliability is concerned with all of its consistency and dependability in measuring a variable. The reliability of the questionnaire determined by internal consistency reliability (Cronbach´s Alpha reliability) (Table 3.1). It was determined through the use of the following formula (Heavey, 2019).

Correlation techniques are widely used to determine the degree of reliability. The dependability coefficient is typically in the range of (-1.00) through (.00) To (+1.00) The reliability coefficient above (.70) are considered satisfactory (Heavey, 2019).

Table 3.1.Reliability of the Study Instruments

Instruments	No. of items	Cronbach´s alpha	Assessment
Knowledge	44	0.781	Good
Attitudes	15	0.825	Very good
Traditional practices	15	0.786	Good

The Cronbach's alpha coefficient reliability level of the questi onnaire in the current study is adequate.

3.10. Data Collection Methods:

The data collection period started from June 4th, 2020 to May 20th, 2021. The investigator explained the investigation and its objectives to the study sample. the sample´ verbal consent has been taken and the answering of questions has been done by using the self-administrative method and using interview with mothers of children whose can't read and write for questionnaire at each setting included in the current study (taking into account the duration of the frequent interruptions that occurred during the period of partial and complete embargo for the governorates of the Middle Euphrates and the country in general, due to the rapid and large spread of the Corona epidemic and the effect of this in terms of patients' access to hospitals and the difficulty of transportation in general) .

3.11. Statistical Data Analysis:

The study's data are statistically analyzed using Microsoft Office Excel 2020 and the SPSS software version 20.

3.11.1. Descriptive Data Analysis:

a- Statistical tables (Frequencies and percentages).

b- Arithmetic mean & Standard deviation (SD).

3.11.2. Inferential Data Analysis:

1. Chi square to identify the relationship between the variables

Note : The statistical significance of the results at p-value ≤ 0.05.

- NS: Non significant at $P>0.05$
- S: Significant at $P\leq 0.05$
- HS: Highly significant at $P<0.01$

CHAPTER FOUR

RESULTS OF STUDY

Chapter four

Result of the study

This chapter presents the findings as being systematically analyzed in tables and corresponded with objectives of the study as follows :

Table 4.1. Distribution of the Study Sample by their Sociodemographic Characteristics

Variables		Frequency	Percent
child age mean & std. (1.81±1.1)	Less than 1 years	216	36.9
	1-3 years	277	47.3
	3-5 years	93	15.9
	Total	586	100
Child gender	Male	280	47.8
	Female	306	52.2
	Total	586	100.0
Mothers age Mean & std. (28.39±5.86)	17-23	144	24.6
	24-30	223	38.1
	31-37	174	29.7
	38-44	45	7.7
	Total	586	100.0
Resident	Urban	371	63.3
	Rural	215	36.7
	Total	586	100.0
Type of family	Nuclear	261	44.5
	Extended	325	55.5
	Total	586	100.0

Cont. table 4.1. Distribution of the Study Sample by their Sociodemographic Characteristics

Variables		Frequency	Percent
No. of children	1	88	15.0
	2	231	39.4
	3	193	32.9
	4	62	10.6
	5	12	2.0
	Total	586	100.0
Occupation	Working	199	34.0
	Housewives	387	66.0
	Total	586	100.0
Education	Illiterate	42	7.2
	Primary	223	38.1
	Intermediate and above	218	37.2
	Institute and above	103	17.6
	Total	586	100.0
Monthly income	Sufficient	105	17.9
	Sufficient to some extent	361	61.6
	Insufficient	120	20.5
	Total	586	100.0

Table (4.1) shows that 47.3% of children at age (1-3) years with mean (1.81) and SD. (1.1), 52.2% of them are female, 38.1% of mothers at age (24-30) years with mean (28.39) and SD. (5.86), 63.3% of them are urban resident, 55.5% of them are in extended families, 39.4% of mothers have 2 children, 66% of the participants were not working, 38.1% of with primary school education, and 61.6% of them have sufficient to some extent

Table 4.2. Mother's Knowledge Distributions about Vitamin D Deficiency (n=586)

No.	Items	I know		Uncertain		Do not know		Total	Mean	Ass.
		f	%	f	%	f	%			
1	I have simple information about vitamin D and its importance	48	8.2	164	28.0	374	63.8	586	1.44	**L**
2	Vitamin D has many benefits for children	36	6.1	128	21.8	422	72.0	586	1.34	**L**
3	Vitamin D is synthesized inside the body	35	6.0	146	24.9	405	69.1	586	1.37	**L**
4	Vitamin D is important in maintaining the level of calcium and phosphate in the body	12	2.0	163	27.8	411	70.1	586	1.32	**L**
5	Vitamin D promotes absorption of minerals in the intestine	45	7.7	150	25.6	391	66.7	586	1.41	**L**
6	Vitamin D helps absorb calcium in the body	38	6.5	146	24.9	402	68.6	586	1.38	**L**
7	Vitamin D is important for bone growth and immunity	16	2.7	158	27.0	412	70.3	586	1.32	**L**
8	Vitamin D helps heal the bones after any injury or surgery	21	3.6	147	25.1	418	71.3	586	1.32	**L**
9	Sunlight is the best source of vitamin D production in the body	39	6.7	144	24.6	403	68.8	586	1.38	**L**
10	Children are at greater risk than adults for vitamin D deficiency	59	10.1	116	19.8	411	70.1	586	1.40	**L**
11	Males are more likely to have vitamin D deficiency than females	29	4.9	159	27.1	398	67.9	586	1.37	**L**
12	Obesity and digestive disorders are one of the factors that cause vitamin D deficiency in children	50	8.5	136	23.2	400	68.3	586	1.40	**L**

F=frequency, %=percent, Ass= Assessment, Assessment level of mean score, L=low level (1-1.66) , M=moderate level (1.67-2.33) , H=high level (2.34-3)

Cont. table 4.2. Mother's Knowledge Distributions about Vitamin D Deficiency (n=586)

No.	Items	I know		Uncertain		Do not know		Total	Mean	Ass.
		f	%	f	%	f	%			
13	Consuming chronic medications such as antacids, cholesterol, cancer and cortisone drugs for children with certain diseases affects the absorption of vitamin D in the body	43	7.3	121	20.6	422	72.0	586	1.35	**L**
14	Today, vitamin D deficiency is one of the most important health problems in our country	29	4.9	140	23.9	417	71.2	586	1.34	**L**
15	Most of the required vitamin D is produced when the skin is directly exposed to sunlight and for a sufficient period	32	5.5	109	18.6	445	75.9	586	1.30	**L**
16	Children who are always at home are at greater risk than others for vitamin D deficiency	43	7.3	140	23.9	403	68.8	586	1.39	**L**
17	Darker skin is more susceptible to vitamin D deficiency than fair skin	27	4.6	126	21.5	433	73.9	586	1.31	**L**
18	Vitamin D inhibits the growth of cancer cells and enhances the activity of the immune system	29	4.9	123	21.0	434	74.1	586	1.31	**L**
19	If the mother suffers from vitamin D deficiency , her baby depends on breastfeeding completely	42	7.2	152	25.9	392	66.9	586	1.40	**L**
20	Giving vitamin D supplement to a child varies according to the seasons of the year	49	8.4	150	25.6	387	66.0	586	1.42	**L**
21	Eating more vitamin D than prescribed dietary recommendations can be harmful to a child	50	8.5	143	24.4	393	67.1	586	1.41	**L**

Cont. table 4.2. Mother's Knowledge Distributions about Vitamin D Deficiency (n=586)

No.	Items	I know		Uncertain		Do not know		Total	Mean	Ass.
		f	%	f	%	f	%			
22	It is important for the child to take vitamin D supplements, and this varies with different age groups	33	5.6	135	23.0	418	71.3	586	1.34	**L**
23	Diets that contain fat are one of the major dietary sources of vitamin D	22	3.8	131	22.4	433	73.9	586	1.30	**L**
24	Meat and poultry are one of the major food sources of vitamin D	28	4.8	131	22.4	427	72.9	586	1.32	**L**
25	Eggs are a nutritious source of vitamin D.	49	8.4	133	22.7	404	68.9	586	1.39	**L**
26	Milk and dairy products are one of the major food sources of vitamin D	49	8.4	139	23.7	398	67.9	586	1.40	**L**
27	Fruits are one of the nutritional sources of vitamin D.	35	6.0	115	19.6	436	74.4	586	1.32	**L**
28	Vitamin D helps protect bones from fragility	44	7.5	131	22.4	411	70.1	586	1.37	**L**
29	Knowledge regarding signs and symptoms of vitamin D deficiency									
29-1	Nausea	12	2.0	138	23.5	436	74.4	586	1.28	**L**
29-2	Insomnia	31	5.3	133	22.7	422	72.0	586	1.33	**L**
29-3	Anorexia	31	5.3	152	25.9	403	68.8	586	1.37	**L**
29-4	Muscle spasm	43	7.3	133	22.7	410	70.0	586	1.37	**L**

F=frequency, %=percent, Ass= Assessment, Assessment level of mean score, L=low level (1-1.66) , M=moderate level (1.67-2.33) , H=high level (2.34-3)

Cont. table 4.2. Mother's Knowledge Distributions about Vitamin D Deficiency (n=586)

No.	Items	I know		Uncertain		Do not know		Total	Mean	Ass.
		f	%	f	%	f	%			
29-5	Inability to walk or difficulty walking and curving legs	38	6.5	149	25.4	399	68.1	586	1.38	**L**
29-6	Curvature of the spine	18	3.1	146	24.9	422	72.0	586	1.31	**L**
29-7	Pelvic abnormalities	59	10.1	149	25.4	378	64.5	586	1.46	**L**
29-8	Chest bone protrusion	17	2.9	148	25.3	421	71.8	586	1.31	**L**
29-9	Skull shape distortion	20	3.4	131	22.4	435	74.2	586	1.29	**L**
29-10	Delayed wound healing	44	7.5	139	23.7	403	68.8	586	1.39	**L**
29-11	Delayed tooth formation	44	7.5	142	24.2	400	68.3	586	1.39	**L**
29-12	Severe headache, especially migraines	32	5.5	144	24.6	410	70.0	586	1.35	**L**
29-13	Significant hair loss	61	10.4	152	25.9	373	63.7	586	1.47	**L**
29-14	mpaired memory, cognition, and general transmission of the body	40	6.8	140	23.9	406	69.3	586	1.38	**L**
29-15	Fractures as a result of exposure to minor bruises	44	7.5	124	21.2	418	71.3	586	1.36	**L**
29-16	Increased child mortality	27	4.6	128	21.8	431	73.5	586	1.31	**L**

F=frequency, %=percent, Ass= Assessment, Assessment level of mean score, L=low level (1-1.66) , M=moderate level (1.67-2.33) , H=high level (2.34-3)

The tables above shows that the mothers have low level of knowledge about vitamin D deficiency in children in all items concerning the concept, causes, risk factors, signs and symptoms with the mean score is at low level of assessment.

Table 4.3. Distribution of Overall Mothers Knowledge about Vitamin D Deficiency

Variables		**Frequency**	**Percent**
Knowledge	**Low (1-1.66)**	585	99.8
	Moderate (1.67-2.33)	1	.2
	High (2.34-3)	-	-
	Total	586	100
	$\overline{x} \pm s.d$	1.36±**0.636**	

The findings of the study in this table indicate that, according to the mother knowledge about vitamin D deficiency mean of the score level of assessment, there is low level of assessment of 585 (99.8%) at level (1-1.66) the mean of score and standard deviation are (1.36±0.636

Table 4.4. Distributions of Mothers Attitude regarding Vitamin D Deficiency (n=586)

No.	Items	Agree		Partially agree		Disagree		Total	Mean	Ass.
		f	%	f	%	f	%			
1	I think that being unfamiliar with the benefits of sun exposure prevents the production of the vitamin D required for a child's need	36	6.1	150	25.6	400	68.3	586	1.38	L
2	I think I have enough space in my private residence for my child to be exposed to sunlight to take advantage of Vitamin D	36	6.1	130	22.2	420	71.7	586	1.34	L
3	I am afraid of staying in residential buildings for a long time without exposing my child to sunlight needed to produce Vitamin D.	35	6.0	126	21.5	425	72.5	586	1.33	L
4	I am interested in providing special places for children to play games and outdoor activities, as exposure of children to sunlight helps to produce Vitamin D	18	3.1	163	27.8	405	69.1	586	1.34	L
5	Imagine urbanization (urban housing) reducing exposure to sunlight and producing the amount of vitamin D needed for a child's development	44	7.5	167	28.5	375	64.0	586	1.44	L
6	I am afraid of the permanent use of powder and cream on the face, neck and hands of the child because it reduces or prevents the exposure of the skin to sunlight needed to produce vitamin D	49	8.4	149	25.4	388	66.2	586	1.42	L
7	Make sure to expose my child to frequent sunlight and I think that this does not lead to poisoning by increasing the percentage of vitamin in the body.	21	3.6	132	22.5	433	73.9	586	1.30	L
8	I imagine that the high material cost of food sources that contain vitamin D is one of the obstacles to providing these sources	31	5.3	129	22.0	426	72.7	586	1.33	L
9	I suspect that taking nutritional supplements is necessary to treat vitamin D deficiency, but not to prevent it	34	5.8	131	22.4	421	71.8	586	1.34	L

Cont. table 4.4. Distributions of Mothers Attitude regarding Vitamin D Deficiency (n=586)

No.	Items	Agree		Partially agree		Disagree		Total	Mean	Ass.
		f	%	f	%	f	%			
10	I imagine that parents' unwillingness or fear of giving nutritional supplements to a child is one of the drawbacks of vitamin D deficiency	42	7.2	134	22.9	410	70.0	586	1.37	L
11	Vitamin D deficiency can be linked to some diseases such as rickets and stiffness	56	9.6	156	26.6	374	63.8	586	1.46	L
12	Often, the undesirable taste of some foods for children is one of the barriers that prevent them from consuming food sources that contain vitamin D	53	9.0	128	21.8	405	69.1	586	1.40	L
13	I think that vitamin D deficiency in children can be overcome by taking nutritional supplements compared to eating nutrients and exposure to sunlight	39	6.7	125	21.3	422	72.0	586	1.35	L
14	I fear for my child not being exposed to sunlight enough to meet the body's need for vitamin D	31	5.3	131	22.4	424	72.4	586	1.33	L
15	Be sure to use nutritional supplements to replace vitamin D as directed by your doctor	23	3.9	120	20.5	443	75.6	586	1.28	L

F=frequency, %=percent, Ass= Assessment, Assessment level of mean score, L=low (1-1.66) , M=moderate level (1.67-2.33), H=high level (2.34-3)

This table shows that the respondents have negative attitude about vitamin D deficiency among children in all items concerning their point of view about the benefits and behaviors should followed in protecting their children from problems related, with mean score is at negative level of assessment.

Table 4.5. Distribution of Overal Mothers Attitude about Vitamin D Deficiency

Variables		Frequency	Percent
Attitude	**Low (1-1.66)**	554	94.5
	Moderate (1.67-2.33)	32	5.5
	High (2.34-3)	-	-
	Total	586	100
	$\overline{x} \pm s.d$	1.36±**0.187**	

The findings of the study in this table indicate that, according to the mother attitude about vitamin D deficiency mean of the score level of assessment, there is negative attitude of 554 (94.5%) at level (1-1.66) the mean of score and standard deviation are (1.36±0.187).

Table 4.6. Distribution of Mothers' Traditional Practices about Vitamin D Deficiency (n=586)

No.	Items	Always		Sometimes		Never		total	Mean	Ass.
		f	%	f	%	f	%			
1	To expose one part of my child's body to sunlight to benefit from Vitamin D	32	5.5	149	25.4	405	69.1	586	1.36	L
2	Follow my child's physical parameter (height / weight) .	18	3.1	136	23.2	432	73.7	586	1.29	L
3	I always watch the straightness of my child's legs	37	6.3	137	23.4	412	70.3	586	1.36	L
4	Take the child for a regular check-up at the appointment in the health center or private clinic	28	4.8	151	25.8	407	69.5	586	1.35	L
5	Giving breast milk by breastfeeding to get vitamin D with great benefit	58	9.9	181	30.9	347	59.2	586	1.51	L
6	In the event that the mother's milk is not available, we must consume the fortified milk to meet the child's need for vitamin D	57	9.7	168	28.7	361	61.6	586	1.48	L
7	Consider giving foods rich in vitamin D, such as milk and eggs	25	4.3	140	23.9	421	71.8	586	1.32	L
8	The duration of exposure to sunlight to get enough vitamin D is 15 to 20 minutes for fair skin and 30 minutes for darker skin daily	30	5.1	130	22.2	426	72.7	586	1.32	L
9	The best time for a child to be exposed to the sun is from 7-12 am continuously during the winter	31	5.3	123	21.0	432	73.7	586	1.32	L
10	The best time for the child to be exposed to the sun is from 8-10 am and 4-5 pm continuously during the summer.	59	10.1	133	22.7	394	67.2	586	1.43	L

Cont. table 4.6. Distribution of Mothers' Traditional Practices about Vitamin D Deficiency (n=586)

No.	Items	Always		Sometimes		Never		total	Mean	Ass.
		f	%	f	%	f	%			
11	Pay attention to my baby's skin when exposed to direct sunlight for long times until he does not get sunburned	61	10.4	157	26.8	368	62.8	586	1.48	L
12	Use the hat / cover the child to avoid direct exposure to sunlight for long times when leaving	55	9.4	145	24.7	386	65.9	586	1.44	L
13	Exposing the child directly to sunlight during the day to get the most out of Vitamin D	27	4.6	132	22.5	427	72.9	586	1.32	L
14	Use of oral drops to protect the child from vitamin D deficiency, according to a doctor's consultation	35	6.0	134	22.9	417	71.2	586	1.35	L
15	Protect the child from eating fast food and sweets	35	6.0	132	22.5	419	71.5	586	1.34	L

F=frequency, %=percent, Ass= Assessment, Assessment level of mean score, L=low level (1-1.66) , M=moderate level (1.67-2.33) , H=high level (2.34-3)

Table (6) shows that mothers of children have low level of traditional practice about vitamin D deficiency among children in all items related their children caring and condition improvement and protection, with mean score is at low level of assessment

Table 4.7. Distribution of Overall Mothers Traditional Practices about Vitamin D Deficiency

Variables		Frequency	Percent
Traditional practices	**Low (1-1.66)**	551	94.0
	Moderate (1.67-2.33)	35	6.0
	High (2.34-3	-	-
	Total	586	100
	$\bar{x} \pm s.d$	1.37±**0.187**	

The findings of the study in this table indicate that, according to the mother traditional practice about vitamin D deficiency mean of the score level of assessment , there is low level of t of 551 (94%) at level (1-1.66) the mean of score and standard deviation are (1.37±0.187)

Table 4.8. Correlation between Mothers Knowledge, Attitudes, & Traditional Practices

Variables		Knowledge	Attitude	Traditional Practices
Knowledge	Pearson Correlation	1	.069	.033
	Sig. (2-tailed)		.094	.429
Attitude	Pearson Correlation	.069	1	.165**
	Sig. (2-tailed)	.094		.000
Traditional Practices	Pearson Correlation	.033	.165**	1
	Sig. (2-tailed)	.429	.000	

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

There is highly significant relationship between mothers knowledge, attitude and traditional practices at P value 0.00.

Table 4.9. association between Mothers 'Knowledge and their Sociodemographic Characteristics

Variables		Knowledge		Total	Chi square	Sig.
		Low	Moderate			
Mothers age	17-23	143	1	144	X^2 =3.075 d.f=3 Sig.=0.380	*No sig.*
	24-30	223	0	223		
	31-37	174	0	174		
	38-44	45	0	45		
	Total	585	1	586		
Resident	Urban	371	0	371	X^2 =1.72 d.f=1 Sig.=0.189	*No sig.*
	Rural	214	1	215		
	Total	585	1	586		
Type of family	Nuclear	261	0	261	X^2 =0.80 d.f=1 Sig.=0.37	*No sig.*
	Extended	324	1	325		
	Total	585	1	586		
Number of children	1	88	0	88	X^2 =1.539 d.f=4 Sig.=0.82	*No sig*
	2	230	1	231		
	3	193	0	193		
	4	62	0	62		
	5	12	0	12		
	Total	585	1	586		
Occupation	Working	199	0	199	X^2 =0.515 d.f=1 Sig.=0.473	*No sig*
	housewives	386	1	387		
	Total	585	1	586		

Cont. table 4.9. association between Mothers 'Knowledge and their Sociodemographic Characteristics

Variables		Knowledge		Total	Chi square	Sig.
		Low	Moderate			
Education	Illiterate	41	1	42	X^2 =12.97 d.f=3 Sig.=0.005	*Sig.*
	Primary	223	0	223		
	Intermediate and above	218	0	218		
	Institute and above	103	0	103		
	Total	585	1	586		
Monthly income	Sufficient	104	1	105	X^2 =3.075 d.f=3 Sig.=0.380	*No sig*
	Sufficient some extent	361	0	361		
	Insufficient	120	0	120		
	Total	585	1	586		

This table shows that there is significant statistical relationship between mothers knowledge about vitamin D deficiency and their level of education with non-significance with mothers age, resident, type of family, number of children, occupation & monthly income .

Table 4.10. association between Mothers Attitudes and their Sociodemographic Characteristics

Variables		Attitude		Total	Chi square	Sig
		low	Moderate			
Mothers age	17-23	135	9	144	X^2 =1.175 d.f=3 Sig.=0.75	*No sig*
	24-30	210	13	223		
	31-37	165	9	174		
	38-44	44	1	45		
	Total	554	32	586		
Resident	Urban	350	21	371	X^2 =0.078 d.f=1 Sig.=0.78	*No sig*
	Rural	204	11	215		
	Total	554	32	586		
Type of family	Nuclear	251	10	261	X^2 =2.42 d.f=1 Sig.=0.12	*No sig*
	Extended	303	22	325		
	Total	554	32	586		
Number of children	1	81	7	88	X^2 =3.17 d.f=4 Sig.=0.53	*No sig*
	2	221	10	231		
	3	183	10	193		
	4	57	5	62		
	5	12	0	12		
	Total	554	32	586		
Occupation	Working	189	10	199	X^2 =0.11 d.f=1 Sig.=0.739	*No sig*
	Howswives	365	22	387		
	Total	554	32	586		

Cont. table 4.10. association between Mothers Attitudes and their Sociodemographic Characteristics

Variables		Attitude		Total	Chi square	Sig
		low	Moderate			
Education	Illiterate	40	2	42	X^2 =2.12 d.f=3 Sig.=0.546	*No sig*
	Primary	207	16	223		
	Intermediate and above	208	10	218		
	Institute and above	99	4	103		
	Total	554	32	586		
Monthly income	Sufficient	99	6	105	X^2 =0.073 d.f=2 Sig.=0.964	*No sig*
	Sufficient some extent	342	19	361		
	Insufficient	113	7	120		
	Total	554	32	586		

This table shows that there is no significant statistical relationship between mothers' attitudes about vitamin D deficiency and their Sociodemographic characteristics (mothers age, resident, type of family, number of children, occupation , level of education & monthly income) .

Table 4.11. assosciation between Mothers Traditional Practices and their Sociodemographic Characteristics

Variables		Traditional practices		Total	Chi square	Sig
		Low	Moderate			
Mothers age	17-23	135	9	144	X^2 =0.253 d.f=3 Sig.=0.96	*No sig*
	24-30	210	13	223		
	31-37	163	11	174		
	38-44	43	2	45		
	Total	551	35	586		
Resident	Urban	352	19	371	X^2 =1.30 d.f=1 Sig.=0.25	*No sig*
	Rural	199	16	215		
	Total	551	35	586		
Type of family	Nuclear	250	11	261	X^2 =2.59 d.f=1 Sig.=0.108	*No sig*
	Extended	301	24	325		
	Total	551	35	586		
Number of children	1	83	5	88	X^2 =3.68 d.f=4 Sig.=0.45	*No sig*
	2	214	17	231		
	3	181	12	193		
	4	61	1	62		
	5	12	0	12		
	Total	551	35	586		
Occupation	Working	184	15	199	X^2 =1.31 d.f=1 Sig.=0.252	*No sig*
	Not working	367	20	387		
	Total	551	35	586		

Cont. table 4.11. assosciation between Mothers Traditional Practices and their Sociodemographic Characteristics

Variables		Traditional practices		Total	Chi square	Sig
		Low	Moderate			
Education	Illiterate	41	1	42	X^2 =1.126 d.f=3 Sig.=0.77	*No sig*
	Primary	209	14	223		
	Intermediate and above	205	13	218		
	Institute and above	96	7	103		
	Total	551	35	586		
Monthly income	Sufficient	97	8	105	X^2 =0.933 d.f=2 Sig.=0.627	*No sig*
	Sufficient some extent	342	19	361		
	Insufficient	112	8	120		
	Total	551	35	586		

This table shows that there is no significant statistical relationship between mothers' traditional practice about vitamin D deficiency and their sociodemographic characteristics (mothers age, resident , type of family , number of children , occupation, level of education & monthly income)

Table 4.12. Distribution of Mothers Knowledge, Attitudes and Traditional Practices according to the Middle Euphrates

Variables		Middle Euphrates				Total
		Dywania	Al-Najaf Al-Ashraf	Babylon	Holly Karbala	
Knowledge	Low	128	118	146	193	585
	Moderate	0	1	0	0	1
	Total	128	119	146	193	586
Attitude	Negative	122	113	142	177	554
	Moderate	6	6	4	16	32
	Total	128	119	146	193	586
Traditional practices	Low	123	111	133	184	551
	Moderate	5	8	13	9	35
	Total	128	119	146	193	586

Table 4.13. Difference of Mothers Knowledge , Attitudes and Traditional Practices according to The Middle Euphrates

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Knowledge	Between Groups	.120	3	.040	3.380	.018
	Within Groups	6.880	582	.012		
	Total	7.000	585			
Attitude	Between Groups	.506	3	.169	4.887	.002
	Within Groups	20.068	582	.034		
	Total	20.574	585			
Traditional practices	Between Groups	.024	3	.008	.225	.879
	Within Groups	20.594	582	.035		
	Total	20.618	585			

This table shows that there is significant difference between mothers knowledge and attitudes about vitamin D deficiency according to the Middle Euphrates

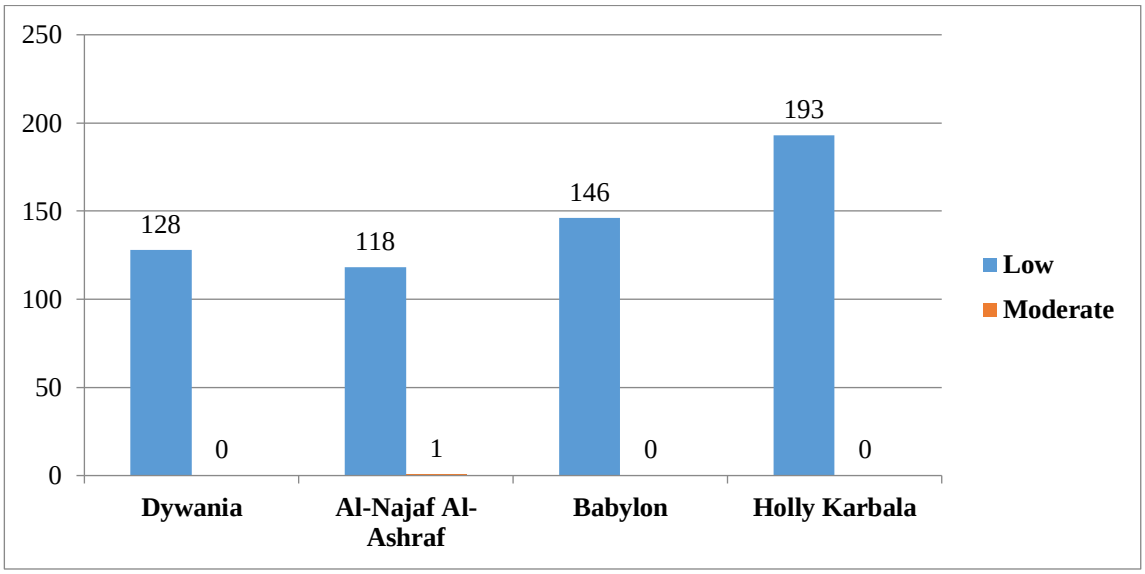


Figure 4.1. Distribution of Mothers Knowledge according to The Middle Euphrates

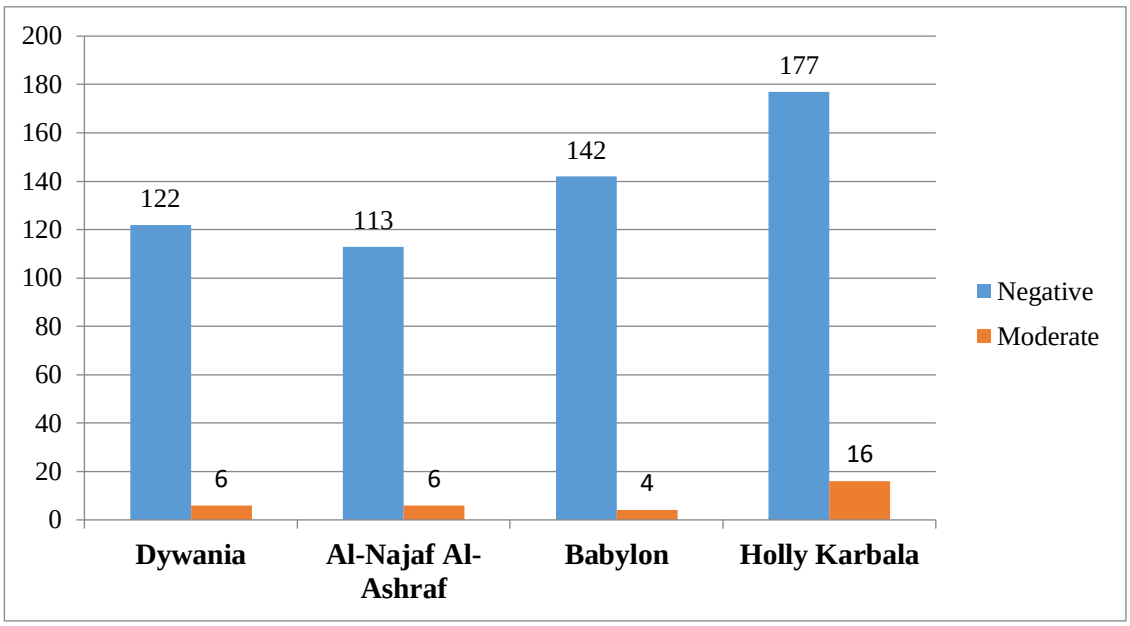


Figure 4.2. Distribution of Mothers Attitudes according to The Middle Euphrates

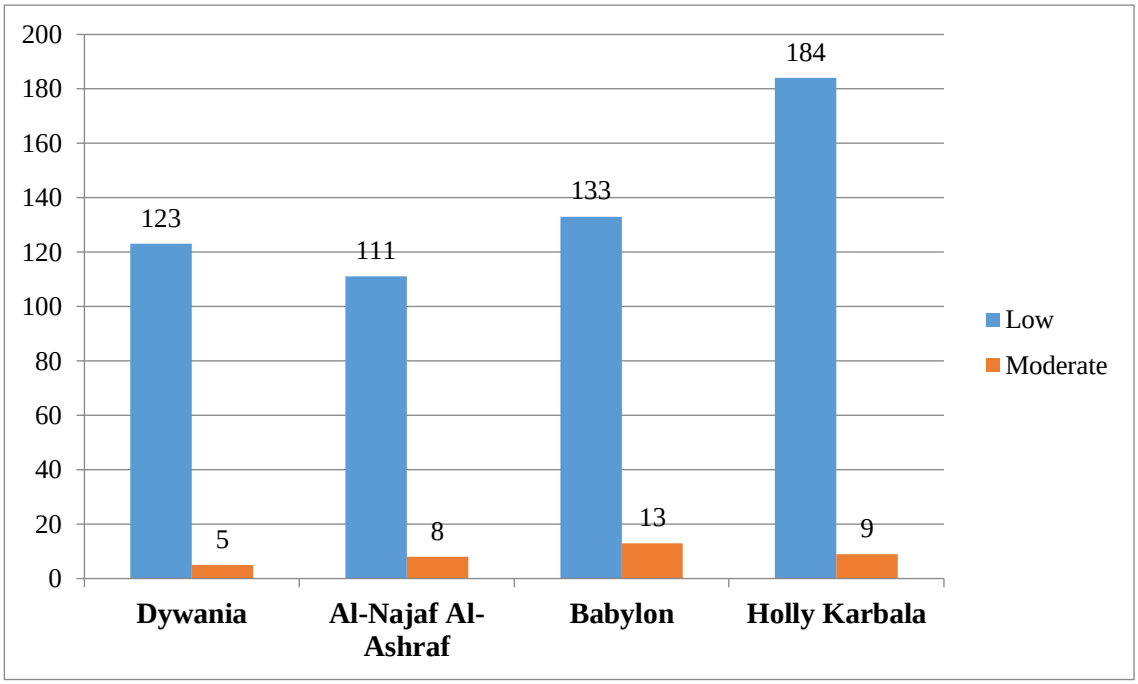


Figure 4.3. Distribution of Mothers Traditional Practices according to the Middle Euphrates

CHAPTER FIVE

DISCUSSION OF THE STUDY

Chapter Five

Discussion of the Results

This chapter represents reasonably determined clarification and systematic discussion provided with reassuring confirmation available in the literatures and articles.

Part 1: The distributions of the Study Sample by their Socio demographic Characteristics

Regarding to socio demographic characteristics in table (4.1) indicated that less than half of children at age (1-3) years with mean (1.81) and SD . (1.1), which inconsistent with a cross sectional study in in Cairo . The results show that less than half of children at age less than 1 year (Soliman et al., 2020). The rational of inconsistency; were poorly cared at this age concerning their diet and hygiene .

According to the children gender of the existing study , half of them are females, which is not supported by descriptive correlational research design conducted Kalyobia Governorate, the finding indicated that the same percent of children were males (Kamel et al., 2017), in addition to a cross-sectional retrospective study conducted in Taif, Saudi Arabia, indicated half of sample were males (Alsuwat et al., 2018).

As regard to mothers' age, estimating two fifth of their ages are (24-30) years with mean (28.39) and SD. (5.86). This finding supported by many studies like a cross-sectional descriptive study carried out in Baghdad, which indicated that half of mothers at age

(26-35) years and the mean with standard deviation (27.11&6.65) years (Rasheed et al., 2017). As well as (Kamel et al., (2017) found that (40.1%) of mothers at age (25-30). While, Soliman et al., (2020) found that one third of mothers at age (30-35) years. The result of the present study and other Iraqi and Arab studies was related to our culture in early age married having children as early age .

Mothers education as shown in table one revealed that approximating two fifth of the respondents, with primary school education, which disagree with Rasheed et al., (2017) found that (35) of mothers had university level of education. Alsuwat et al., (2018) found that about half of mothers had academic education . As well as Soliman et al., (2020) found that about three quarter were university education. The researcher point of view that the educational level of the mother is a very important issue in order to provide the basic needs of the child particularly focusing on their diet and protective measures at home from many health problems which reflect the reduction in morbidity and mortality .,

As for mothers occupation, nearly two third of the participants were not working which is logic cause of low education, that is consistent with the majority of mothers are housewives and not working, so it affects the economic situation , that's the reason of less than two third of the study population responses as sufficient income to some extent which indicate their level of awareness and satisfactions.

In spite of, less than two thirds of the respondents from urban resident but few over half of them living in extended families which

indicate the deprivation of the basic characteristics of the house , adding the unified method without privacy of caring for her child, as well as the overcrowding of families and closed dwellings, affects the practices of mothers about dealing with vitamin D deficiency.

According to children number, 39.4% of mothers have 2 children.

Part 2: The distributions of the mother's knowledge about vitamin D deficiency

According to mothers knowledge about vitamin D deficiency in table (4.2&4.3) revealed that, mothers have low level of knowledge about vitamin D deficiency in children in all items concerning the concept, causes, risk factors , signs and symptoms with the mean score and standard deviation (1.36 $\pm$0.636) is at low level of assessment, which is consisted with a descriptive study and was carried out Tamilnadu, the result shows that the majority of participants had limited knowledge towards benefits of vitamin D supplements (Kavitha et al., 2015). Moreover, Rasheed, Taha, Rasheed, (2017) found that mothers had poor level of information about sources of vitamin D (sun exposure, food, supplement), Sufficiency of breast milk with vitamin D, Sufficiency of fruits and vegetables with vitamin D, Vitamin D supplements are best started during first month, Vitamin D deficiency cause Rickets, Diabetes, asthma and decrease immunity . Also, about half of mothers had poor level of knowledge and less than half had fair level . In a cross-sectional study was carried out in Karbala, indicated that about one fifth of the subjects had a good knowledge (Al-Ghraibawi et al., 2019). Franklin, (2019) found that

knowledge of vitamin D was generally poor amongst this sample of mothers. There was a deficit in knowledge relating to vitamin D sources , most of mothers correctly identified sunlight as the single most important source of vitamin D. However , two third thought breast milk was a good source and less than a quarter thought toddler or infant formula were good sources of vitamin D. There was a knowledge deficit for risk factors for deficiency, including poor awareness for dark skin and exclusive breast feeding being high risk factors. Knowledge of barriers to vitamin D synthesis were poor, mothers were unaware of the impact of skin covering on vitamin D status and two third of mothers thought it was true or were unsure when asked if sun through a window is just as effective at synthesizing vitamin D. In a cross sectional study was conducted in Cairo indicated that one fifth had a good knowledge towards vitamin D and its supplementation and the other had poor knowledge (Selim et al., 2020).

Al-Qudah, Abuhussein , & Al Sbaih , (2021) found that only less than one fifth use of sunscreen is a risk factor for VDD . Most of respondents knew that VDD leads to rickets, but only one fifth knew that epileptic seizures due to hypocalcemia is a complication of VDD .A small percentage answered correctly that vitamin D synthesis is axpected by skin color and it is not present in large amounts in breast milk .

While, disagree with Alamoudi et al ., (2019) found that the sample had good awareness about benefits of vitamin D for treat bone

disease and rickets , maintenance of calcium and phosphates , maintenance of bone and teeth, strengthen immunity & muscle .

Gedamu , & Tafere , (2019) found that nearly half of the respondents had knowledge of sunlight exposure to their infant. Less than half had knowledge of sunlight exposure every day . Nearly three quarters of respondents had knowledge of sunlight exposure to infants before four hours. Similarly , more than three quarters , less than one third of respondents had knowledge of sunlight exposure of infant in less than 30 min. More than half of respondents had information about sunlight exposure of infant and most of the respondents had got the information from a health professional . The logical reason of this inconsistency related to the different in culture .

The study can be intrepted by poor level of knowledge related vitamin D deficiency may be due to the absence of the educational role of the health care workers in educate and inform mothers about the importance of nutrition and vitamins for the proper growth of the child . In addition to the low educational level of mothers , it is negatively affects their knowledge about the needs of their children in general and vitamin D in particular .

Part 3 : The distributions of the mother's attitudes about vitamin D deficiency

Regarding to mothers attitudes about vitamin D deficiency in table (4.4&4.5) revealed that mothers have negative attitude about vitamin D deficiency among children in all items concerning their point of view about the benefits and behaviors should followed in

protecting their children from problems related, with mean score & standard deviation (1.36±0.187) is at negative level of assessment. Which is in same line with the finding of Kavitha et al., (2015) found that majority of the study participants had negative attitude towards benefits of vitamin D supplement. Selim et al., (2020) found that one third of mothers had a positive attitude towards vitamin D and its supplementation and the other had negative attitude. Al-Qudah, Abuhussein, & Al Sbaihi, (2021) found that more than fifth believed negatively that breast milk provides their babies with everything, so no need for vitamin D supplements.

While, it is inconsisted Kamel et al., (2017) found that two third of mothers had positive attitude regarding the importance of vitamin D and its supplementation . Franklin, (2019) found that there were strong concerns of sun exposure leading to skin damage and skin cancer, majority agreed that they worry sun will damage their child's skin. Half of mothers agreed they did not know what to do when it came to sun exposure and vitamin D and a further about three quarters agreed skin cancer prevention messages make it difficult to understand vitamin D messages . Gedamu, & Tafere , (2019) found that about half of sample agreed with an advantage of sunlight exposure of their infants . More than half of respondents were happy when they exposed /if they exposed their child to sunlight and the remaining felt anxiety and other. Less than half of respondents perceived consequences after they exposed or if they exposed their child to sunlight were to become strong and the remaining. Al-Qudah , Abuhussein , & Al Sbaihi , (2021) found that most of them were with the agreement that vitamin D supplements is important for overall

health of infants and children, and vitamin D intake more than recommended allowance may be harmful. From all participants . More than two third agreed that the need for extra vitamin D during winter season is increased. Over than three quarters of mothers believed that vitamin D deficiency is a health problem common in children , and the need for more information about this issue is high.

The study can be interepted that the reason for mothers' negative attitudes to vitamin D is due to the lack of knowledge about vitamin D , which reflects positively in mothers' attitudes about vitamin D. Therefore , changing attitudes from the negative side to the positive side needs to increase the knowledge of mothers about vitamin D

Part 4 : The distributions of the mother's traditional practice about vitamin D deficiency

Regarding to mothers traditional practice about vitamin D deficiency in table (4.6) revealed that mothers of children have low level of traditional practice about vitamin D deficiency among children in all items related their children caring and condition improvement and protection, with mean score & standard deviation (1.37 ± 0.187) is at low level of assessment in table (4.7) .

Which is supported by Kavitha et al., (2015) found that majority of the study participants had poor practices towards benefits of vitamin D supplement. Zadka et al., (2018) found that only a small group of respondents supplemented themselves and their children with vitamin D. Al-Ghraibawi et al., (2019) found that less than half of the subjects had regular sun exposure. Most subjects had been included

foods rich in VD to their meal. More than half reported the duration of daily sun exposure of the subjects was 10-20 min. Face and hands were the most parts that had been exposed to sun by the study subjects. Gedamu, & Tafere , (2019) found that less than half of the participants exposed their infants to sunlight. Only, less than one fifth respondents started to expose their child to sunlight before 10 days. Out of 176 respondents, less than half participants exposed their child to sunlight every day and the remaining more than half were 5 up to 6 times a week and less. Franklin, (2019) found that participants followed vigilant sun exposure practices for their children and themselves, especially during summer months, most of respondents reported always /usually keeping their child in the shade or dressing their child in protective clothing. Of those mothers surveyed, majority of them would always /usually put a hat on their child and more than three quarters would always /usually apply sunblock to their child's skin.

Al-Qudah et al., (2021) found that more than two third of mothers took vitamin D supplements during pregnancy in contrast to less than half took them during breast feeding . Regarding mothers who have children of less than 2 years, one third used breast feeding and milk formula together for feeding their babies . Only one fifth of them tested vitamin D for their babies and more than half gave their babies vitamin D supplements. More than half mothers expose their infants of less than six months to sun light . On the other hand , only one fifth of mothers who have children between 2-6 years tested vitamin D for their children and less than half gave vitamin D supplements for their children. More than half of mothers indicated that the best time for

exposure of children to sun is before 10 a.m. The highest percentage of mothers exposed their children to sun 1-3 times weekly. Half of mothers got vitamin D supplements for their children by prescription from a private children's clinic.

The study can be intrepted tthat the relationship between knowledge, trends and practices is a direct relationship, as an increase in knowledge leads to an increase in attitudes and practices. Since the lack of knowledge of mothers about the importance and sources of vitamin D , in addition to the ways in which it is prevented and treated, vitamin D deficiency leads directly to a lack of practices in dealing with the health problem.

Part 5 : The correlation between Mothers Knowledge , Attitudes, & Traditional Practices

Regarding to correlation between mothers knowledge , attitudes, & traditional practices in table (4.8) indicated that there is highly significant relationship between mothers' attitude and traditional practices at P value 0.00. While, there is no relationship between mothers knowledge and attitude. Also, there is no relationship between mothers knowledge and traditional practice. Which is supported by Rasheed, Taha, Rasheed , (2017) found that there is a positive and significant correlations with P <0.0001 between mothers knowledge , attitudes and practices. Kamel et al., (2017) found that there was a positive statistical significant correlation between total knowledge score and total attitude score at 5% level statistical significance . Also, there was a highly statistical positive correlation between total attitude score and total knowledge score at 1% level of statistical significance. Al-

Ghraibawi et al., (2019) found that the increase in total knowledge was associated with an increase in the total practice score ($p = 0.03$) .

Part 6 : The Relationship between Mothers' Knowledge and their Sociodemographic Characteristics

Regarding to the relationship between mothers knowledge and their socio demographic characteristics in table (4.9) indicated that there is significant statistical relationship between mothers knowledge about vitamin D deficiency and their level of education. This result may be due to present some of mothers have university education level. Which is supported by Alamoudi et al., (2019) found that there is significant relationship between level of knowledge and level of education.

There is significant statistical relationship between mother's knowledge about vitamin D deficiency non-significance with mothers age, resident, type of family, number of children , occupation & monthly income. Which is inconsisted with Soliman , Wahdan , Abouelezz , Sabbour , (2020) found that there are significant relationship between mothers knowledge and their age , family income, & occupation .

Part 7 : The Relationship between Mothers' attitudes and their Sociodemographic Characteristics

Regarding to the relationship between mothers attitudes and their socio demographic characteristics in table (4.10) indicated that there is no significant statistical relationship between mothers' attitudes about vitamin D deficiency and their socio demographic characteristics (mothers age, resident, type of family , number of children, occupation ,

level of education & monthly income) . This results due to most of sample have negative attitudes about vitamin D deficiency . Which is agree with Soliman et al., (2020) found that there are no significant relationship between mothers attitudes family income, & occupation.

Part 8 : The Relationship between Mothers' traditional practice and their Sociodemographic Characteristics

Regarding to the relationship between mothers traditional practice and their socio demographic characteristics in table (4.11) indicated that there is no significant statistical relationship between mothers' traditional practice about vitamin D deficiency and their socio demographic characteristics (mothers age, resident, type of family , number of children, occupation, level of education & monthly income. This results due to most of sample have poor practices about vitamin D deficiency. Which is agree with Al-Ghraibawi et al., (2019) found that there is no statistical association between age, education , marital status or occupation and the mean practice score (P value>0.05) .

CHAPTER SIX

CONCLUSION & RECOMMENDATIONS

Chapter Six

Conclusion and Recommendations

This chapter acquaint with conclusion that are consequential from the analysis and discussion of the study outcomes . The recommendations which are recognized based on the research conclusion.

6.1. Conclusion

6.1.1. The mother age (24-30) is considered as a greatest category of participants , from urban residencies; and living in extended type of families .

6.1.2. A relatively high percent of the respondent having primary level of education, that's why a two third of them are not working; with two fifth of them have just two children .

6.1.3. Less than half of the mothers' have children aged (1-3) yrs, as well as half of them are female .

6.1.4. Mothers along the Middle Euphrates had poor level of knowledge , negative attitudes, and poor practices toward vitamin D deficiency among children .

6.1.5. There is a significant statistical relationship between mothers' knowledge about vitamin D deficiency and their level of education; with non-significancy between mothers' attitudes and traditional practices about vitamin D deficiency and their socio-demographic characteristics .

6.2. Recommendations

Affording to the conclusion of the contemporary study, the researchers recommended the following;

6.2.1. It is proposed to the Ministry of Health to take care of the free campaign in allocating vitamin D to mothers during and after pregnancy and to their children through health centers, which have been honestly successful in raising the responsiveness in this issue .

6.2.2. Health proffesionals working at these centers must take more responsibility for continuing and broadcasting education and training mothers who visiting them during pregnancy and after childbirth focusing on the importance of vitamin D and the significances of its deficiency as well as the risk factors leading to its deficiency during postnatal or well-baby visits to assure healthy population particularly among childhood growth and development .

6.2.3. Preparing campaigns for health educational programs regarding their weakness in knowledge and practices in increasing vitamin D , focusing on its sources and avoiding its deficiency in various groups of society, in addition to preparing a booklet on the topics presented to mothers and disseminated on all primary health centers.

6.2.4. Further studies need on a larger size sample; focusing on the relations between vitamin D and health, and detect how using vitamin D supplementation could have affected impressions on overall health intern-ational by reducing the physical, emotional, and economic burden of disease .

REFERENCES

المصادر العربية :

- من القران الكريم سورة يـــس , الجزء الثالث والعشرون.الاية,37 -38

الصفحة 442

REFERENCES

- Abdul, T., Rasheed, W., Taha, H. K., Abdul, B., & Rasheed, W. (2017). Knowledge, attitude and practice of Iraqi mothers towards Vitamin D supplementation to their infants in Baghdad Al -Rusafa 2016. *Al - Kindy College Medical Journal,13(2), 120–125.*
- Al Bathi, B. A., Al Zayed, K. E., Al Qenai, M., Makboul, G., & El-Shazly, M. K. (2012). Knowledge, attitude and practice of patients attending primary care centers toward vitamin D in Kuwait. *Journal Alexandria Journal of Medicine, 48(3):277-282*
- Al Mheid, I., & Quyyumi, A. A. (2017). Vitamin D and Cardiovascular Disease Controversy Unresolved. *Journal of the American College of Cardiology, 70(1):89-100*
- Alamoudi, L. H., Almuteeri, R. Z., & et al. (2019). Awareness of Vitamin D Deficiency among the General Population in

Jeddah, Saudi Arabia. *Journal of Nutrition and Metabolism, 2019,1-7*

- Albarracin, D., Sunderrajan, A., & Lohmann, S. (2018). The Psychology of Attitudes, Motivation, and Persuasion. In Albarracin & Johnson (Eds.), Handbook of Attitudes:1-106.
- AlBishi, L. A., Prabahar, K., Albalawi, Y. M., Albalawi, S. A., Abosalem, A. A., Alqarni, W. A., … Albalawi, M. M. (2018). Knowledge, attitude and practice of health care practitioners in Saudi Arabia, with regard to prevention of vitamin D deficiency in infancy. *Saudi medical journal, 39(6), 603–608.*
- Al-Ghraibawi, S. J., Al-Ghabban, S. I., & Al-Zubaidy, R. (2019). Knowledge and Practices Regarding Vitamin D Deficiency among Women Attending Imam Hussein Medical City in Karbala 2018. *International Journal of Current Pharmaceutical Research, 11(6), 39-43*
- Ali, A., Cui, X., & Eyles, D. (2018). Developmental vitamin D deficiency and autism: putative pathogenic mechanisms. J Steroid Biochem Mol Biol, 175:108–18
- Ali, A., Vasileva, S., Langguth, M., Alexander, S., Cui, X., Whitehouse, A., & et al. (2019). Developmental Vitamin D

Deficiency Produces Behavioral Phenotypes of Relevance to Autism in an Animal Model. Nutrients, 11:2-19

- Al-Qudah, S., Abuhussein, L., & Al Sbaihi, S. (2021). Maternal Awareness of Vitamin D Deficiency in Infants and up to the Age of 6 Years: A Cross Sectional Study in Jordan. Authorea. DOI: 10.22541/au.162062397.78441316/v1
- Al-Saleh, Y., Al-Daghri, N. M., Khan, N., Alfawaz, H., Al Othman, A. M., Alokail, M. S., & Chrousos, G. P. (2015). Vitamin D status in Saudi school children based on knowledge. BMC Pediatrics, 15(1), 1
- Alshahrani, A. (2014): Vitamin D Deficiency and Possible Risk Factors Among Middle Eastern University Students in London, Ontario, Canada, Master Thesis, The School Of Graduate and Postdoctoral Studies, The University of Western Ontario, London, P.11.
- Alshammari, O. M., Almezani, A. M., Alshlaqy, A. S., Alsiraa, M. N., Alenazy, G. A., Saleh, S. A., AL Ghamdi, K. (2018). The Prevalence of Rickets Disorder among Children in Saudi Arabia. *The Egyptian Journal of Hospital Medicine,73(6):6943-6947*

- Alsuwat, F. S., Alzahrani, N. J., & et al. (2018). Knowledge and Attitude Practice (KAP) of Rickets Disease among Mothers in KSA. *The Egyptian Journal of Hospital Medicine, 72(6),4582-4585*
- Alwadei, A. M. A., Al-Johani, N. S. M., & Alzamanan, S.S. M. (2018). Public Awareness of Vitamin D Deficiency among Children in Najran City and the Role of Primary Health Care Centers in Raising Their Awareness. *The Egyptian Journal of Hospital Medicine, 70(12), 2100–2109.*
- Annweiler, C., Annweiler, T., Montero-Odasso, M., & Bartha, R., Beauchet, O. (2014). Vitamin D and brain volumetric changes: Systematic review and meta-analysis. Maturitas. 78(1): 30–39.
- Arastoo, A. A., Khojastehkia, H., Rahimi, Z., Khafaie, M. A., Hosseini, S. A., Mansouri, M. T., & et al. (2018). Evaluation of serum 25-Hydroxy vitamin D levels in children with autism Spectrum disorder. *Italian Journal of Pediatrics, 44:150*
- Atapattu, N. (2013). Approach to a child presenting with rickets. *Sri Lanka Journal of Child Health, 42(1): 40-44*
- Azzam, H. M. E., Sayyah, H., Youssef, S., Lotfy, H., Abdelhamid, I. A., Hala A. Abd Elhamed, H. A., & et al.,

(2015). Autism and vitamin D: an intervention study. Middle East Current Psychiatry, 22(1):9-14

- Babelghaith, S. D., Wajid, S., Al-Zaaqi, M. A., Al-Malki, S., Al-Amri, F. D., Alfadly, S., … Alarifi, M. N. (2017). Knowledge and practice of vitamin d deficiency among people lives in riyadh, saudi arabia-a cross-sectional study. Biomedical Research (India), 28(7), 3114–3118.
- Babli, A. I., AlDawood, K. M., & Khamis, A. H. (2015). Knowledge, attitude, and practice of general practitioners in Dammam, Saudi Arabia towards Vitamin D supplementation to infants. J Family Community Med, 22(3): 135–139.
- Basit, S. (2013). Vitamin D in health and disease: a literature review. Br J Biomed Sci. 70:161–172.
- Bedaso, A., Gebrie, M., Deribe, B. & et al. (2019). Knowledge and practice on adequate sunlight exposure of infants among mothers attending EPI unit of Aleta Wondo Health Center, SNNPR, Ethiopia. BMC Res Notes, 12(183)
- Bener, A., Khattab, A. O., & Al-Dabbagh, M. M. (2014). Is high prevalence of Vitamin D deficiency evidence for autism disorder?: In a highly endogamous population. *Journal of pediatric neurosciences*, *9(3), 227–233.*

- Biber, K. (2016). Views Of Expectant Mothers About Sources Of Knowledge And Skills Related To Motherhood. *European Journal of Education Studies*, *2*(11), 30-46
- Bikle, D. (2017). Vitamin D: Production, Metabolism, and Mechanisms of Action.
- Bilagi, U. (2018). Vitamin D and Heart Disease. *Journal of The Association of Physicians of India*. *66:78-83*
- Bolisani, E., and Bratianu, C. (2018). The Elusive Definition of Knowledge.Emergent knowledge strategies: Strategic thinking in knowledge management. In Springer International Publishing. https://doi.org/10.1007/978-3-319-60656
- Brett, N. R., Lavery, P., Agellon, S., Vanstone, C. A., Goruk, S., Field, C. J., & Weiler, H. A. (2018). Vitamin D Status and Immune Health Outcomes in a Cross-Sectional Study and a Randomized Trial of Healthy Young Children. Nutrients, 10:680
- Brinksma, A., Huizinga, G., Sulkers, E., Kamps, W., Roodbol, P., & Tissing, W. (2012). Malnutrition in childhood cancer patients: a review on its prevalence and possible causes. Crit Rev Oncol Hematol. 83(2):249-75

- Brooks, M. (2020). Vitamin D Deficiency, May Boost COVID19 Risk.Medscape. https://www.https://www.medscape.com/viewarticle/93
- Burt, M. G., Mangelsdorf, B. L., Stranks, S. N., Mangoni, A. (2016). Relationship between Vitamin D status and autonomic nervous system activity. Nutrients, 8:565
- Business Dictionary. (2019).Attitude. http://www.businessdictionary.com/definition/attitude.html
- Çakır, B. Ç., & Demirel, F. (2014). Effects of seasonal variation and maternal clothing style on vitamin D levels of mothers and their infants. *The Turkish Journal of Pediatrics, 56: 475-481*
- Cannell, J. J. (2017). Vitamin D and autism, what's new?Rev Endocr Metab Disord, 18:183–93
- Castellani, M. L., Shaik-Dasthagirisaheb, Y. B., Tripodi, D., et al. (2010) Interrelationship between vitamins and cytokinesin immunity. J Biol Regul Homeost Agents. 24:385–390.
- Centers of Disease Control and Prevention. (2019). Vitamin D. https://www.cdc.gov/breastfeeding/breastfeeding- special-circumstances/diet-and-micronutrients/vitamin-d.html

- Chaney, A. (2015). Primary care management of vitamin D deficiency and liver disease. *Journal of the American Association of Nurse Practitioners, 27(8),415-419*
- Chang, S. W., & Lee, H. C. (2019). Vitamin D and health The missing vitamin in humans. Pediatrics and Neonatology, 60(3):237-244
- Chauhan, N., Padhy, S. K., Shah, R., & Malhotra, S. (2019). Vitamin D Deficiency in Children with Psychiatric Illness in a Tertiary Care Hospital in North India. *Journal of neurosciences in rural practice, 10(1), 16–20.*
- Chiang, M., Natarajan, R., & Fan, X. (2016). Vitamin D in schizophrenia: a clinical review. Evid Based Ment Health.19(1):6–9.
- Chirumbolo, S., Bjørklund, G., Sboarina, A., & Vella, A. (2017). The Role of Vitamin D in the Immune System as a Pro-survival Molecule. Clinical Therapeutic, 39(5):894-916
- Choi, J. (2017). Rickets. Health line. https://www.healthline.com/health/rickets
- Chowdhury, R., Taneja, S., Kvestad, I., Hysing, M., Bhandari, N., & Strand, T. A. (2020). Vitamin D status in early childhood is not associated with cognitive development and linear growth

at 6–9 years of age in North Indian children: a cohort study. *Nutrition Journal,19:14*

- Christakos, S., Dhawan, P., Verstuyf, A., Verlinden, L., & Carmeliet, G. (2016). Vitamin D: Metabolism, molecular mechanism of action, and pleiotropic effects. Physiol. Rev, 96:365–408
- Christodoulou, S., Goula, T., Ververidis, A., & Drosos, G. (2013). Vitamin D and Bone Disease. BioMed Research International, 2013:1-6. http://dx.doi.org/10.1155/2013/396541
- Chun, R. F., Liu, P. T., Modlin, R. L., Adams, J. S., & Hewison, M. (2014). Impact of vitamin D on immune function: lessons learned from genome-wide analysis. Fortiers in psychology, 5(151):1-15.
- Currenti, S. A. (2010). Understanding and determining the etiology of autism. Cell Mol Neurobiol, 30:161–171
- Dağhan, Ş., Toraman, A. U., Yelten, G., Taşkıran, G., & Savan, F. (2019). Knowledge and Practices of Mothers Regarding Use of Vitamin D for Infant Health. JCP, 17(1):58-70
- Danik, J. S., & Manson, J. E. (2012). Vitamin d and cardiovascular disease. Current treatment options in cardiovascular medicine,14(4), 414–424.

- Danok, A. S., (2013). Assessment of Eating Habits of Obese Adolescent′s at Secondary Schools in Kirkuk City. Master thesis. College of Nursing. Baghdad University. 6.
- Day, R.E., Krishnarao, R., Sahota, P. et al. (2019). We still don't know that our children need vitamin D daily: a study of parents' understanding of vitamin D requirements in children aged 0-2 years. BMC Public Health, 19, 1119. https://doi.org/10.1186/s12889-019-7340-x
- Delisle, H., & Batal, M. (2016). The double burden of malnutrition associated with poverty. Correspondence, 387(10037):2504-2505
- DeLuca, H. F. (2014). History of the discovery of vitamin D and its active metabolites. Bonekey Rep. 3: 479.
- Demir, M., Uyan, U., & Melek, M. (2014). The effects of vitamin D deficiency on atrial fibrillation. Clin Appl Thromb Hemost. 20:98–103.
- Di Marco, N., Kaufman, J., & Rodda, C. P. (2019). Shedding Light on Vitamin D Status and Its Complexities during Pregnancy, Infancy and Childhood: An Australian Perspective. Int. J. Environ. Res. Public Health 16(538):1-17.

- Di Somma, C., Scarano, E., Barrea, L., Zhukouskaya, V. V., Savastano, S., Mele, C., Scacchi, M., Aimaretti, G., Colao, A., & Marzullo, P. (2017). Vitamin D and Neurological Diseases: An Endocrine View. *International journal of molecular sciences, 18(11), 2482.* https://doi.org/10.3390/ijms18112482
- Dusso, A. S. (2014). Update on the biologic role of the vitamin D endocrine system. Curr Vasc Pharmacol, 12:272–7.
- Ebeling, P. R. (2014). Vitamin D and bone health: Epidemiologic studies. Bonekey Rep. 3: 511
- Elshafie, D., Al-Khashan, H. and Mishriky, A. (2012): Comparison of vitamin D deficiency in Saudi married couples, *European journal of clinical nutrition, 66(6), P. 743*
- Eyles, D. W, Burne, T. H., McGrath, J. J. (2013). Vitamin D, effects on brain development, adult brain function and the links between low levels of vitamin D and neuropsychiatric disease. Front Neuroendocrinol.34(1):47–64.
- Fang, W. T., Eric, N. G., Wang, C. M., & Hsu, M. H. (2017). Normative Beliefs, Attitudes, and Social Norms: People Reduce Waste as an Index of Social Relationships When Spending Leisure Time. Sustainability, 9(1696):1-12.

- Fasih, Z. (2016). Evaluating the Frequency of Vitamin D Deficiency in the Pediatric Age Group and Identifying the Biochemical Predictors Associated with Vitamin D Deficiency. Pediatrics & Therapeutics, 06(02), 1–5.
- Föcker, M., Antel, J., Grasemann, C., Führer, D., Timmesfeld, N., Öztürk, D., Libuda, L. (2018). Effect of an vitamin D deficiency on depressive symptoms in child and adolescent psychiatric patients - a randomized controlled trial: study protocol. BMC psychiatry,18(1):57.
- Franklin, M. (2019). Knowledge and attitudes of vitamin D and sun exposure practices amongst New Zealand mothers with children aged five years old and under. Master thesis. Massey University. 1-75
- Gamal, M., Matyori, A., Alkaibari, M., Alzahrani, T., Al-Sanea, M. M., Iqubal, S. M. S., & Khan, A. A. (2018). Prevalence of Vitamin D deficiency in Jeddah's children, Kingdom of Saudi Arabia. *Journal of Pure and Applied Microbiology, 12(4), 1737– 1741*
- Gedamu, H., & Tafere, Y. (2019). Assessment of Knowledge, Attitude, and Practice of Sunlight Exposure of Infants among Mothers Attending in Governmental Health Facilities in Farta

District, South Gondar Zone, North West Ethiopia, 2018. International *Journal of Reproductive Medicine, 2019, 2638190:1-7*

- Gichana, M. B. (2013). nutritional knowledge of mothers and nutritional status of their children 6-59 months under malezi bora programme in kawangware sub location, dagoretti, nairobi county. Master thesis. University of Nairobi. 1-84.
- Gil, A., Plaza-Diaz, J., & Mesa, M. D. (2018). Vitamin D: classic and novel actions. Annals of Nutrition and Metabolism, 72(2), 87-95.
- Gillberg, C. (2010). The ESSENCE in child psychiatry: Early Symptomatic Syndromes Eliciting Neurodevelopmental Clinical Examinations. Res Dev Disabil. 31:1543-51.
- Goday, P. S. (2020). Malnutrition in children in resource-limited countries: Clinical assessment. Up to date. https://www.uptodate.com/contents/malnutrition-in-children-in-resource-limited-countries-clinical-assessment
- Gorter, E. A., Oostdijk, W., Felius, A., Krijnen, P., & Schipper, I. B. (2016). Vitamin D Deficiency in Pediatric Fracture Patients: Prevalence, Risk Factors, and Vitamin D

Supplementation. *Journal of clinical research in pediatric endocrinology, 8(4), 445–451*.

- Gruber, B. M., (2015). The phenomenon of vitamin D. Postepy Hig. Med. Dośw. 69:127–139
- Guo, Y., Ke, H., Liu, Y., Fu, M., Ning, J., Yu, L., … Wu, J. (2018). Prevalence of vitamin D insuf fi ciency among children in southern china. Medicine, 97(25):1–5
- Haq, A., Svobodová, J., Imran, S., Stanford, C., Razzaque, M. S. (2016). Vitamin D deficiency: A single centre analysis of patients from 136 countries. J Steroid Biochem Mol Biol. 164:209–213
- Heavey, E. (2019). Statistics for nursing, a practical approach. Third edition. Jones & Bartlett Learning. 1-315
- Hebbar, K. B., Wittkamp, M., Alvarez, J. A., McCracken, C. E., & Tangpricha, V. (2014). Vitamin D deficiency in pediatric critical illness. *Journal of Clinical & Translational Endocrinology, 1(4):170-175*
- Hossein-Nezhad, A., & Holick, M. F., (2013). Vitamin D for health: A global perspective. Mayo Clin. Proc, 8:720–755.

- Howe, L. C., & Krosnick, J. A. (2017). Attitude Strength. Annual Review of Psychology, 68(1), 327–351. https://doi.org/10.1146/annurev-psych-122414-033600
- Huybrechts, I., Himes, J.H., Ottevaere, C. et al. (2011). Validity of parent-reported weight and height of preschool children measured at home or estimated without home measurement: a validation study. BMC Pediatr 11(63).
- Imera, J. K. (2013). knowledge, attitude and practices of mothers with malnourished children less than thirty-six months regarding breastfeeding and complementary feeding in kitui county hospital. Master thesis. University of Nairobi. 1-70.
- Iniesta, R., Rush, R., Paciarotti, I., Rhatigan, E., Brougham, F., McKenzie, J. and Wilson, D. (2016): Systematic Review and Meta-analysis: Prevalence and Possible Causes of Vitamin D Deficiency and Insufficiency in Pediatric Cancer Patients, Clinical Nutrition, 35(1), P.1.
- Iruretagoyena, M., Hirigoyen, D., Naves, R., & Burgos, P. I. (2015). Immune response modulation by vitamin D: role in systemic lupus erythematosus. Frontiers in immunology, 6, 513.
- Isa, H. M. A., Almaliki, M. S., Alsabea, A. S. S., & Mohamed, A. M. (2019). Vitamin D deficiency in healthy children in

Bahrain: do gender and age matter. *Eastern Mediterranean Health Journal. 2019;25(x):xxx– xxx*

- Jain, V. (2014). 3D Model of Attitude. *International Journal of Advanced Research in Management and Social Sciences, 3(3): 2278-6236*
- Jia, F., Wang, B., Shan, L., Xu, Z., & Staal, W. G. (2015). Core Symptoms of Autism Improved After Vitamin D Supplementation. PEDIATRICS, 135(1):1-5
- Józefowicz, O., Rabe-Jabłonska, J., Wozniacka, A., Strzelecki, D. (2014). Analysis of vitamin D status in major depression. J Psychiatr Pract. 20(5):329–337.
- Judge, T. A., & Kammeyer-Mueller, J. D. (2012). Job Attitudes. Annual Review of Psychology, 63(1), 341–367. https://doi.org/10.1146/annurev-psych-120710-100511
- Kamal, W. (2018). Mothers' Awareness regarding Vitamin D Deficiency among Their Infants in Kalyobia Governorate. *Menoufia Nursing Journal, 2(1):1-20*
- Kamboj, P., Dwivedi, S., & G.S. Toteja, G. S. (2018). Prevalence of hypovitaminosis D in India & way forward. Indian J Med Res, 148:548-556

- Kamel, W. K., Abd El-Hamid, H. S., Abd El-Megeed,H. A., Mohy El-Deen, H. F. (2017). Mothers' Awareness regarding Vitamin D Deficiencyamong Their Infantsin Kalyobia Governorate. *Menoufia Nursing Journal, 2(1), 1-16*
- Kavitha, D., Anjalakshi, C., & et al. (2015). Knowledge, Attitude And Practice Regarding Vitamin D Deficiency Among Antenatal Mothers In Tamilnadu. Int J Pharm Bio Sci, 6(4), 486- 497
- Kavitha, M. (2015). Assess the Knowledge on Malnutrition among Mothers in Vinayaka Mission Hospital, Salem. *Journal of Nursing and Health Science, 4(4): 27-35*
- Kempker, J. A., Han, J. E., Tangpricha, V., Ziegler, T. R., Martin, G.S. (2012). Vitamin D and sepsis: an emerging relationship. Dermatoendocrinol, 4(2):101-108
- Keung, L., & Perwad, F. (2018). Vitamin D and kidney disease. Bone Reports, 9:93-100
- Khamoushi, A., Aalipanah, E., Sohrabi, Z., & Akbarzadeh, M. (2019). Vitamin D and Autism Spectrum Disorder: A Review. Int J Nutr Sci,4(1):9-13

- Khan, A., Khan, S., Zia-ul-Islam, S., Tauqeer, A. M., Riffat, A., & Khan, M. (2017). Causes, sign and symptoms of malnutrition among the children. J Nutr Hum Health. 1(1):24-27
- Kheiri, B., Abdalla, A., Osman, M., Ahmed, S., Hassan, M., & Bachuwa, G. (2018). Vitamin D deficiency and risk of cardiovascular diseases: a narrative review. Clinical hypertension, 24, 9. https://doi.org/10.1186/s40885-018-0094-4
- Khoshbakht, Y., Bidaki, R., & Salehi-Abargouei, A. (2018). Vitamin D Status and Attention Deficit Hyperactivity Disorder: A Systematic Review and Meta-Analysis of Observational Studies. Advances in Nutrition, 9(1):9–20
- Khosravi, Z. S., Kafeshani, M., Tavasoli, P., Zadeh, A. H., & Entezari, M. H. (2018). Effect of Vitamin D Supplementation on Weight Loss, Glycemic Indices, and Lipid Profile in Obese and Overweight Women: A Clinical Trial Study. *International journal of preventive medicine, 9:63*
- Kinney, D. K., Barch, D. H., Chayka, B., Napoleon, S., Munir, K. M. (2010). Environmental risk factors for autism: do they help cause de novo genetic mutations that contribute to the disorder? Med Hypotheses, 74:102–106

- Kočovská, E., Andorsdóttir, G., Weihe, P., Halling, J., Fernell, E., Stóra, T., et al. (2014). Vitamin D in the General Population of Young Adults with Autism in the Faroe Islands. J Autism Dev Disord. 44:2996-3005
- Kostoglou-Athanassiou, I., Athanassiou, L., & Athanassiou, P. (2019). Vitamin D and Autoimmune Diseases. Open access peer-reviewedchapter. DOI: 10.5772/intechopen.89707
- Krishna, S. M. (2019). Vitamin D as A Protector of Arterial Health: Potential Role in Peripheral Arterial Disease Formation. Int J Mol Sci, 20(19): 4907.
- Kroenung, J., & Eckhardt, A. (2011). Three classes of attitude and their implications for IS research. International Conference on Information Systems 2011, ICIS 2011, 2, 1728– 1744
- Ksiazek, A., Zagrodna, A., & Lisowska, M. S. (2019).Vitamin D, Skeletal Muscle Function and Athletic Performance in Athletes—A Narrative Review. Nutrients, 11:1800
- Küçükazman, M., Ata, N., Dal, K., Yeniova, A., Kefeli, A., Basyigit, S., Aktas, B., Akin, K., Ağladıoğlu, K., Üre, Ö., Topal, F., Nazligül, Y., Beyan, E., Ertugrul, D. (2014). The association of vitamin D deficiency with non-alcoholic fatty liver disease. Clin (Sao Paulo), 69:542–546.

- Kyu, H. H., Pinho, C., Wagner, J. A., Brown, J. C., Bertozzi-Villa, A., Charlson, F. J., Coffeng, L. E., Dandona, L., Erskine, H. E., Ferrari, A. J., et al. (2016). Global and National Burden of Diseases and Injuries Among Children and Adolescents Between 1990 and 2013: Findings from the Global Burden of Disease 2013 Study. JAMA Pediatr.170:267-287.
- Lee, J. H., Keefe, J. H. O., Bell, D., Hensrud, D. D., Holick, M. F. (2017). Vitamin D deficiency an important, common, and easily treatable cardiovascular risk factor? J Am Coll Cardiol.52:1949–1956.
- Lee, J. Y., So, T. Y., & Thackray, J. (2013). A review on vitamin d deficiency treatment in pediatric patients. The journal of pediatric pharmacology and therapeutics : JPPT : *The official journal of PPAG, 18(4), 277–291*.
- Lelijveld, N., Seal, A., Wells, J. C., Kirkby, J., Opondo, C., Chimwezi, E., et al. (2016). Chronic disease outcomes after severe acute malnutrition in Malawian children (ChroSAM): a cohort study. Lancet Glob Health, 4:e654–62
- Lemond, A. (2018). Are You at Risk for Vitamin D Deficiency? Everything You Need to Know. Every day health. https://www.everydayhealth.com/vitamin-d/vitamin-d-

deficiency-causes-signs-symptoms-risk-factors-consequences/#deficiencyriskfactors

- Lerchbaum, E., & Obermayer-Pietsch, B., (2012). Vitamin D and fertility: A systematic review. Eur. J. Endocrinol, 166:765–778
- Litonjua, A. A. (2017). Vitamin D Levels, Asthma, and Lung Function: Timeto Act on Deficiency?. J Allergy Clin Immunol Pract, 5:797-8
- Littlejohns, T. J., Henley, W. E., Lang, I. A., Annweiler, C., Beauchet, O., Chaves, P. H., Fried, L., Kestenbaum, B. R., Kuller, L. H., Langa, K. M., Lopez, O. L., Kos, K., Soni, M., & Llewellyn, D. J. (2014). Vitamin D and the risk of dementia and Alzheimer disease. Neurology, 83(10),920–928.
- Liu, M., Li, X., Sun, R., Zeng, Y., Chen, S., & Zhang, P. (2016). Vitamin D nutritional status and the risk for cardiovascular disease (Review). Experimental and Therapeutic Medicine, 11(4): 1189-1193
- Llewellyn, D. J., Lang, I. A., Langa, K. M., & Melzer, D. (2011). Vitamin D and cognitive impairment in the elderly U.S. population. J Gerontol A Biol Sci Med Sci, 66:59-65.

- Macleod, A. S., & Havran, W. L. (2011). Functions of skin-residentγδT cells. Cell Mol Life Sci. 68:2399–2408.
- Maddock, J., Zhou, A., Cavadino, A., Kuźma, E., Bao, Y., Smart, M. C., … Hyppönen, E. (2017). Vitamin D and cognitive function: A Mendelian randomisation study. Scientific reports, 7(1):13230.
- Mailhot, G., & White, J. H. (2020). Vitamin D and Immunity in Infants and Children. Nutrients, 12(5), 1233.
- Marengo, K. (2019). What are the best dietary sources of vitamin D?. medical news today.
- Marques, C. D. L., Dantas, A. T., Fragoso, T. S., & Duarte, Â. L. (2010). The importance of vitamin D levels in autoimmune diseases. Bras J Rheumatol,50(1):67-80
- McCarthy, A., Delvin, E., Marcil, V., Belanger, V., Marchand, V., Boctor, D., Rashid, M., Noble, A., Davidson, B., Groleau, V., Spahis, S., Roy, C., & Levy, E. (2019). Prevalence of Malnutrition in Pediatric Hospitals in Developed and In-Transition Countries: The Impact of Hospital Practices. Nutrients, 11(2):236.
- McDonnell, S. L., Baggerly, C., French, C. B., Baggerly, L. L., Garland, C. F., Gorham, E. D., … Heaney, R. (2016). Serum 25-

hydroxyvitamin d concentrations ≥40 ng/ml are associated with >65% lower cancer risk: Pooled analysis of randomized trial and prospective cohort study. PLoS ONE, 11(4), 1–15.

- Mehta, N. M., Corkins, M. R., Lyman, B., Malone, A., Goday, P. S., Carney, L., et al. (2013). Defining Pediatric Malnutrition: A Paradigm Shift Toward Etiology-Related Definitions. *Journal of Parenteral and Enteral Nutrition, 37(4):460-481*
- Meštrović, T. (2018). Rickets Treatments. News of medical life sciences.https://www.news-medical.net/health/Rickets-Treatments.aspx
- Misra, M., Pacaud, D., Petryk, A. & et al. (2008). Vitamin D Deficiency in Children and Its Management: Review of Current Knowledge and Recommendations. Pediatrics, 122(2), 398
- Mordeniz, C. (2019). Introductory Chapter: Traditional and Complementary Medicine. Open access peer-reviewed chapter, DOI: 10.5772/intechopen.86373
- Moromizato, T. Litoniua, A. A., Gibbons, F. K., Giovanncci, E., Christopher, K. B. (2014). Association of low plasma 25-hydroxyvitamin D levels and sepsis in the critically ill. Crit Care Med, 42(1):97-107

- Munns, C. F., Shaw, N., Mairead Kiely, M., & et al. (2016). Global Consensus Recommendations on Prevention and Management of Nutritional Rickets. Horm Res Paediatr, 85,83-106
- Murrell, D. (2017). Everything you need to know about rickets. Medical news today.
- Naeini, A. A., Fasihi, F., Najafi, M., Ghazvini, M. R., & Hasanzadeh, A. (2019). The effects of vitamin D supplementation on ADHD (Attention Deficit Hyperactivity Disorder) in 6–13 year-old students: A randomized, double-blind, placebo-controlled study. *European Journal of Integrative Medicine, 25:28-33*
- Nair, R., & Maseeh, A. (2012). Vitamin D: The "sunshine" vitamin. *Journal Pharmacology & pharmacotherapeutics. 3(2):118-126*
- National Institutes of Health. (2019). Rickets.
- National institute of health. (2019). Vitamin D.
- Neves, D. (2015). Anti-Ageing Nutrients: Evidence-Based Prevention of Age-Associated Diseases. 306.
- Ngari, M. M., Thitiri, J., Mwalekwa, L., Timbwa, M., Iversen, P. O., Fegan, G. W., & Berkley, J. A. (2018). The impact of rickets on growth and morbidity during recovery among

children with complicated severe acute malnutrition in Kenya: A cohort study. Maternal & child nutrition, 14(2), e12569.

- Norman, P. E., & Powell, J. T. (2014). Vitamin D and Cardiovascular Disease. Circulation research, 114(2): 379–393.
- Norval, M. (2005). A Short Circular History of Vitamin D from its Discovery to its Effects. Res Medica, 268(2):57-58
- Organic Allergy Relief (Cited 25 March 2021). posted on MARCH 25, 2017; Retrieved by: https://www.organicallergyrelief.com/
- Parva, N. R., Tadepalli, S., Singh, P., Qian, A., Joshi, R., Kandala, H., … Cheriyath, P. (2018). Prevalence of Vitamin D Deficiency and Associated Risk Factors in the US Population (2011-2012). Cureus, 10(6), e2741.
- Patience, S. (2013). Vitamin D deficiency in at-risk groups. Community Pract. 86(3):38-40.
- Pekkanen, M. P., Ukkola, O., Hedberg, P., Piira, O. P., Lepojärvi, S., Lumme, J., Tulppo, M., & Huikuri, H. (2015). Serum 25-hydroxyvitamin D is associated with major cardiovascular risk factors and cardiac structure and function in patients with coronary artery disease. Nutr Metab Cardiovasc Dis. 25:471–478.

- Prietl, B., Treiber, G., Pieber, T. R., & Amrein, K. (2013). Vitamin D and immune function. Nutrients, 5(7), 2502–2521.
- Principi, N., & Esposito, S. (2016). Adverse events following immunization: real causality and myths. Expert Opin Drug Saf,15:825–35.
- Principi, N., & Esposito, S. (2020). Vitamin D Deficiency During Pregnancy and Autism Spectrum Disorders Development. Frontiers in psychiatry, 10, 987.
- Quora (Cited 4 January 2021). Ray Schilling, What are the effects of the deficiency of vitamin D3. Retrieved by: https://www.quora.com/
- Rajebi, H., Khodadad, A., Fahimi, G., & Abolhassani, (2016). Vitamin D Deficiency among Female Nurses of Children's Medical Center Hospital and Its Related Factors. Acta Med Iran,54(2):146-150.
- Rapson, I. R., Michos, E. D., Alonso, A., Hirsch, A. T., Matsushita, K., Reis, J. P., & Lutsey, P. L. (2017). Serum 25-hydroxyvitamin D is associated with incident peripheral artery disease among white and black adults in the ARIC study cohort. Atherosclerosis, 257, 123–129.

- Rasheed, T. A. W., Taha, H. K., & Rasheed, B. A. (2017). Knowledge, attitude and practice of Iraqimothers towards Vitamin D supplementation to their infants in Baghdad Al - Rusafa 2016. *Al-Kindy College Medical Journal,13(2),111-116*
- Raubenheimer, E. J., & Noffke, C. E. E. (2011). Vitamin D and health - a historical overview. SA orthop. j. 10(2):39-43
- Ravisankar, P., Reddy, A., Nagalakshmi, B., Koushik, O. S., Kumar, B. V., & Anvith, P. S. (2015). The Comprehensive Review on Fat Soluble Vitamins. *IOSR Journal Of Pharmacy. 5(11):12-28*
- Ricciardi, C. J., Bae, J., Esposito, D., et al. (2015). 1,25-Dihydroxyvi-tamin D3/vitamin D receptor suppresses brown adipocyte differentiation and mitochondrial respiration. EurJ Nutr. 54:1001–1012
- Robinson-cohen, C., Hoofnagle, A. N., Ix, J. H., Kestenbaum, R., de Boer, I. H. (2013). Racial differences in the association of serum 25-hydroxyvitamin D concentration with coronary heart disease events. JAMA. 310:179–188
- Rusińska, A., Płudowski, P., Walczak, M., Borszewska-Kornacka, M. K., Bossowski, A., & Sokół, D. C. (2018). Vitamin D Supplementation Guidelines for General Population

and Groups at Risk of Vitamin D Deficiency in Poland—Recommendations of the Polish Society of Pediatric Endocrinology and Diabetes and the Expert Panel With Participation of National Specialist Consultants and Representatives of Scientific Societies—2018 Update. Front. Endocrinol. 9(246):1-21

- Saglam, Y., Kizildag, H., Toprak, G., Alp, N. B., & Yalcinkaya, E. Y. (2017). Prevalence of vitamin D insufficiency in children with forearm fractures. *Journal of children's orthopaedics, 11(3):180-184.*
- Sahay, M., & Sahay, R. (2012). Rickets-vitamin D deficiency and dependency. *Indian journal of endocrinology and metabolism, 16(2), 164–176.*
- Sahin, N., Altun, H., Kurutas, E. B., & Balkan, D. (2018). Vitamin D and vitamin D receptor levels in children with attention-deficit/hyperactivity disorder. Neuropsychiatric Disease and Treatment, 14: 581—585
- Sahota, O. (2014). Understanding vitamin D deficiency. Age Ageing, 43(5): 589–591
- Saleem, J., Zakar, R., Zakar, M. Z., Belay, M., Rowe, M., Timms, P. M., et al. (2018). High-dose vitamin D3 in the

treatment of severe acute malnutrition: a multicenter double-blind randomized controlled trial. *The American Journal of Clinical Nutrition, 107(5):725–733*

- Santillan, A. G., Garcia, E. M., Castro, J. C., Abdala, J. H., & Trejo, J. (2012). Cognitive, Affective and Behavioral Components That Explain Attitude toward Statistics. *Journal of Mathematics Research, 4(5)*. https://doi.org/10.5539/jmr.v4n5p8
- Schneider, W., Niklas, F., & Schmiedeler, S. (2014). Intellectual development from earlychildhood to early adulthood: The impact of early IQ differences on stabilityand change over time. Learn Individ Differ,32:156–162.
- Selim, N. S. S., Wahdan, M. M., Aboulezz, N. F., Sabbour, S. M. (2020). Knowledge, Attitude and Practice towards vitamin D importance and supplementation among mothers of under five children in a primary health care center in Cairo. QJM: An *International Journal of Medicine, 113(1)*, 1-20
- Sharif, M. R., Madani, M., Tabatabaei, F., Tabatabaee, Z. (2015). The relationship between serum Vitamin D levels and attention deficit hyperactivity disorder. Iran J Child Neurol. 9(4):48–53.um disorder, and ADHD.

- Singh, J., Dharrao, S. B., & Baheti, T. (2016). Vitamin D in Therapeutics: Past, Present and Future. *MVP Journal of Medical Sciences, 3(2), 128–133*.
- Sintzel, M. B., Rametta, M. & Reder, A. T. (2018). Vitamin D and Multiple Sclerosis: A Comprehensive Review. Neurol Ther,7:59–85
- Smith, D. L. (2017). These 10 Groups Of People Are More Prone To Vitamin D Deficiency. Prevention. https://www.prevention.com/health/a20488821/risk-for-vitamin-d- deficiency/
- Soliman, N. S., Wahdan, M. M., Abouelezz, N. F., Sabbour, S. M. (2020). Knowledge, Attitude and Practice towards Vitamin D Importance and Supplementation among Mothers of under Five Children in a Primary Health Care Center in Cairo. *The Egyptian Journal of Community Medicine, 38(4), 62-75*
- Soni, M., Kos, K., Lang, I. A., Jones, K., Melzer, D., & Llewellyn, D. J. (2012). Vitamin D and cognitive function. *Scandinavian Journal of Clinical & Laboratory Investigation, Early Online: 1–4*

- Sotodehasl, N., Tamadon, M. R., Malek, F. (2018). Vitamin D deficiency and autism; a review on recent findings. *Journal of Parathyroid Disease,6(1):7–12*
- Spedding S. (2014). Vitamin D and depression: a systematic review and meta-analysis comparing studies with and without biological flaws. Nutrients, 6(4), 1501–1518.
- Stubbs, G., Henley, K., & Green, J. (2016). Autism: will vitamin D supplementation during pregnancy and early childhood reduce the recurrence rate of autism in newborn siblings? Med Hypotheses, 88:74–8.
- Tanner, S. B., & Harwell, S. A. (2015). More than healthy bones: a review of vitamin D in muscle health. Therapeutic advances in musculoskeletal disease, 7(4), 152–159.
- Thiele, D. K., Ralph, J., El-Masri, M., & Anderson, C. M. (2017). Vitamin D3 Supplementation During Pregnancy and Lactation Improves Vitamin D Status of the Mother–Infant Dyad. the Association of Women's Health, Obstetric and Neonatal Nurses, 46(1):135-147
- Tofail, F., Islam, M. M., Mahfuz, M., Alam, A., Aktar, S., Haque, R., Hossain, I & et al., (2019). Association of vitamin D

nutrition with neuro-developmental outcome of infants of slums in Bangladesh. PLOS ONE 14(9): e0221805

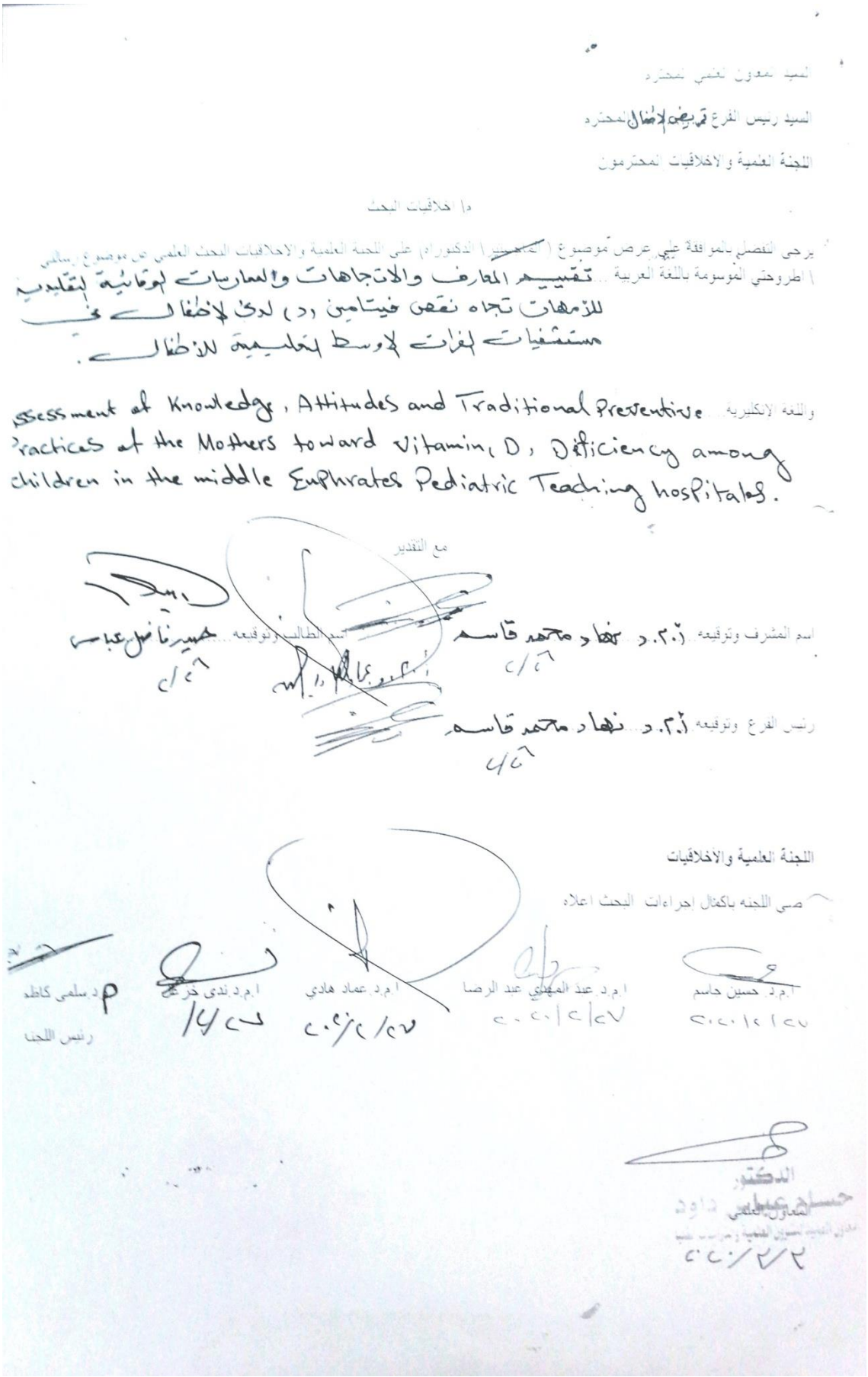
- Trautvetter, U., Neef, N., Leiterer, M., Kiehntopf, M., Kratzsch, J., & Jahreis, G. (2014). Effect of calcium phosphate and vitamin D_3 supplementation on bone remodelling and metabolism of calcium, phosphorus, magnesium and iron. *Nutrition journal, 13, 6. doi:10.1186/1475-2891-13-6*
- Umaretiya, P. J., Oberhelman, S. S., Cozine, E. W., Maxson, J. A., Quigg, S. M., & Thacher, T. D. (2017). Maternal preferences for vitamin d supplementation in breastfed infants. Annals of Family Medicine, 15(1), 68–70.
- van Harreveld, F., Nohlen, H. U., & Schneider, I. K. (2015). The ABC of Ambivalence: Affective, Behavioral, and Cognitive Consequences of Attitudinal Conflict. In Advances in Experimental Social Psychology (1st ed., Vol. 52):1-40. *https://doi.org/10.1016/bs.aesp.2015.01.002*
- Veena, S. R., Krishnaveni, G. V., Srinivasan, K., Thajna, K. P., Hegde, B. G., Gale, C. R., & Fall, C. H. (2017). Association between maternal vitamin D status during pregnancy and offspring cognitive function during childhood and adolescence.

Asia Pacific journal of clinical nutrition, 26(3), 438–449. https://doi.org/10.6133/apjcn.032016.07

- Vega-Encabo, J. (2016). The Concept of Knowledge: What is It For? Disputatio, 8(43):187-202
- Verkaik-Kloosterman, J., Seves, S. & Ocké, M. C. (2017). Vitamin D Concentrations in Fortified Foods and Dietary Supplements Intended for Infants: Implications for Vitamin D Intake. Food chemistry, 15(221):629-635.
- Vocabulary, (2019). Mother. https://www.vocabulary.com/dictionary/mother
- Wacker, M., & Holick, M. F. (2013). Sunlight and Vitamin D A global perspective for health. Dermato- Endocrinology, 5(1):51-108
- Wacker, M., & Holick, M.F. (2013). Vitamin D—effects on skeletal and extra skeletal health and the need for supplementation. Nutrients. 5(1):111–48.
- Wagner, C. L., Taylor, S. N., Johnson, D. D., & Hollis, B. W. (2012). The role of vitamin D in pregnancy and lactation: emerging concepts. Women's health (London, England), 8(3), 323–340. https://doi.org/10.2217/whe.12.17

- Wang, L., Song, Y., Manson, J., Pilz, S., März, W., Michaëlsson, K., Lundqvist, A., Jassal, S., Barrett-Connor, E., Zhang, C., Eaton, C., May, H., Anderson, J., Sesso, H. (2012). Circulating 25-hydroxy-vitamin D and risk of cardiovascular disease: a meta-analysis of prospective studies. Circ Cardiovasc Qual Outcomes. 5:819–829
- WHO, (2019). Early child development. https://www.who.int/topics/early-child-development/en/
- Wintermeyer, E., Ihle, C., Ehnert, S., Stöckle, U., Ochs, G., & de Zwart, P. (2016). Crucial Role of Vitamin D in the Musculoskeletal System. Nutrients, 8:319
- Wong, Y. Y. E., Flicker, L., Yeap, B. B., McCaul, K. A., Hankey, G. J., & Norman, P. E. (2013). Is hypovitaminosis D associated with abdominal aortic aneurysm, and is there a dose-response relationship? Eur J Vasc Endovasc Surg. 45:657–664.
- World health organization. (2012). Guideline: Vitamin D supplementation in pregnant women. https://apps.who.int/iris/bitstream/handle/10665/85313/9789241 50

- Wrzosek, M., Łukaszkiewicz, J., Wrzosek, M., Jakubczyk, A., Matsumoto, H., Piątkiewicz, P., et al. Vitamin D and the central nervous system. Pharmacol Rep. 65(2): 271–8.
- Yean, T. F., Johari, J., & Sukery, A. F. M. (2015). The influence of attitude, subjective norms, and perceived behavioural control on intention to return to work: A case of socso's insured employees. Kajian Malaysia, 33, 141–154
- Younis, K., Ahmad, S., & Badpa, A. (2015). Malnutrition: Causes and Strategies. J Food Process Technol 6(4):1-8
- Zadka, K., Pałkowska-Goździk, E., & Danuta Rosołowska-Huszcz, D. (2018). The State of Knowledge about Nutrition Sources of Vitamin D, Its Role in the Human Body, and Necessity of Supplementation among Parents in Central Poland. Int J Environ Res Public Health, 15(7),1489.
- Zhang, R., & Naughton, D. P. (2010). Vitamin D in health and disease: current perspectives. Nutr J. 9:1–13.
- Zhu, Z., Zhan, J., Shao, J., Chen, W., Chen, L., Li, W., … Zhao, Z. (2012). High prevalence of vitamin D deficiency among children aged 1 month to 16 years in Hangzhou, China. BMC Public Health, 12(1)



السيد المعاون العلمي المحترم

السيد رئيس الفرع تمريض الاطفال المحترم

اللجنة العلمية والاخلاقيات المحترمون

م/ اخلاقيات البحث

يرجى التفضل بالموافقة على عرض موضوع (الماجستير / الدكتوراه) على اللجنة العلمية والاخلاقيات البحث العلمي عن موضوع رسالتي / اطروحتي الموسومة باللغة العربية تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات الفرات الاوسط التعليمية للأطفال.

واللغة الانكليزية Assessment of Knowledge, Attitudes and Traditional Preventive Practices of the Mothers toward Vitamin, D, Deficiency among children in the middle Euphrates Pediatric Teaching hospitals.

مع التقدير

اسم المشرف وتوقيعه أ.م.د. نهاد محمد قاسم

اسم الطالب وتوقيعه حيدر ناظم عباس

رئيس الفرع وتوقيعه أ.م.د. نهاد محمد قاسم

اللجنة العلمية والاخلاقيات

مع اللجنة باكمال اجراءات البحث اعلاه

أ.م.د. حسين حاسم

أ.م.د. عبد المهدي عبد الرضا

أ.م.د. عماد هادي

أ.م.د. ندى حزعل

د. سلمى كاظم

رئيس اللجنة

الدكتور

حسام عباس داود

المعاون العلمي

Ministry of Higher Education and Scientific Research
وزارة التعليم العالي والبحث العلمي
University of Babylon
College of Nursing
جامعة بابل
كلية التمريض
لجنة الدراسات العليا

Ref. No. :
Date: /

العدد :
التاريخ :

(العمل الطوعي مسؤولية الجميع لبناء الوطن)

الى / دائرة صحة بابل
م/ تسهيل مهمة

تحية طيبة :

يطيب لنا حسن التواصل معكم ويرجى تفضلكم بتسهيل مهمة طالب الدكتوراه (حيدر فاضل عباس محسن) لغرض جمع عينة دراسة الدكتوراه والخاصة بالبحث الموسوم :

تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات الفرات الأوسط التعليمية للأطفال .

Assessment of Knowledge ,Attitudes ,and Traditional Preventive Practices of the Mothers toward Vitamin (D) Deficiancy among Children in the Middle Euphrates Pediatric Teaching Hospitals

مع الاحترام ...

الدكتور
حسام عباس داود
معاون العميد للشؤون العلمية والدراسات العليا
١٠ / ٣ / ٢٠٢٠

صورة عنه الى //
- مكتب السيد العميد للتفضل بالاطلاع مع الاحترام .
- لجنة الدراسات العليا مع الأولويات .
- الصادرة .

Elaf

E-mail:nursing@uobabylon.edu.iq
STARS
وطني 07711632208
المكتب 009647711632208
www.uobabylon.edu.iq

Republic of Iraq
Babel Health Directorate
Email:
Babel_Health@yahoo.com
Tel 282628/ 282621

جمهـــــورية العـــــراق
محافظة بابـــل
دائرة صحـــــة محافظة بابـــل
المديـــر العـــام
مركز التدريب والتنمية البشرية
وحدة إدارة البحـوث

العـدد: ٦٢٢
التاريخ: ٢٠٢٠/١٠/٩

إلـى / مستشفى بابل التعليمي للنسائية والاطفال
م/ تسهيـــل مهمـــة

دائرة الصحة
دائرة صحة بابل
مركز التدريب والتنمية البشرية

السلام عليكم ..

اشارة الى كتاب جامعة بابل / كلية التمريض ذي العدد ٧٦٤ في ٢٠٢٠/٣/١٠
ربطـا" استمارات الموافقة المبدئية لمشروع البحث العائد لطالب الدراسات العليا / دكتوراه (حيدر فاضل عباس محسن) من جامعة بابل / كلية التمريض ،
للتفضل بالاطلاع وتسهيل مهمة الموما إليه من خلال توقيع وختم استمارات إجراء البحث المرفقة في مؤسساتكم وحسب الضوابط والإمكانيات لاستحصال الموافقة المبدئية ليتسنى لنا إجراء اللازم على أن لا تتحمل مؤسساتكم أية تبعات مادية وقانونية ....

[redacted] الاطلاع مع الاحترام ،

المرفقات :

استمارة عدد /٢

الدكتور
محمد عبد الله عجرش
مدير مركز التدريب والتنمية البشرية
/ /٢٠٢٠

نسخة منه إلى :
- مكتب المدير العام / مركز التدريب والتنمية البشرية/ وحدة ادارة البحوث.... مع الأوليات.

موحد المرضى الراقدين داخل مستشفى بابل للنسائية والاطفال لسنة 2020

ت	المؤشر	ك2	شباط	اذار	نيسان	ايار	حزيران	تموز	اب	ايلول	ت1	ت2	ك1	الكلي
		القيمة												
1	عدد الراقدين الكلي	4107	3818	2552	1940	2357	1768	2069	2202	2521	2570	2715	2841	31460
2	راقدين نسائية	1065	1044	1127	922	1061	828	879	985	1070	1024	1107	1116	12228
3	راقدين الاطفال	1906	1786	722	407	491	302	381	381	445	548	650	746	8765
4	راقدين لامراض الانتقالية	73	58	48	24	25	14	14	14	25	31	29	23	378
5	راقدين العناية المركزة	33	11	18	39	36	18	11	24	18	11	47	27	293
6	راقدين الخدج	545	490	137	92	170	357	173	413	470	32	5	7	2891
7	راقدين جناح خاص اطفال	119	121	124	94	113	11	139	70	55	499	458	452	2255
8	راقدين جراحة اطفال	202	110	27	19	19	142	67	193	242	149	166	185	1521
9	راقدين امراض كلية	0	0	0	0	0	0	0	0	20	232	210	238	720
10	راقدين جناح خاص نسائية	164	198	349	343	442	96	405	122	176	44	43	47	2429
11	راقدين بسبب الامراض التنفسية	2271	981	378	78	117	61	34	41	118	117	143	182	4521
12	راقدين بسبب ذات الرئة	11	396	178	37	39	25	10	17	47	41	41	61	903
13	راقدين بسبب الاسهال	1166	28	82	39	119	61	59	66	110	199	252	312	2493
14	راقدين بسبب الاسهال الدموي	0	4	4	1	1	3	0	3	50	7	8	2	83
15	راقدين نسائية من خارج المحافظة	16	6	1	11	20	5	10	18	49	16	20	26	198
16	راقدين اطفال من خارج المحافظة	38	13	6	3	15	21	25	19	19	26	26	31	242

Ministry of Higher Education and Scientific Research
وزارة التعليم العالي والبحث العلمي
University of Babylon
College of Nursing
جامعة بابل
كلية التمريض
لجنة الدراسات العليا

العدد : ٧٦٥
التاريخ : ١٠ / ٣ / ٢٠٢٠

Ref. No. :
Date: / /

(العمل الطوعي مسؤولية الجميع لبناء العراق)

الى / دائرة صحة الديوانية
م/ تسهيل مهمة

تحية طيبة :

يطيب لنا حسن التواصل معكم ويرجى تفضلكم بتسهيل مهمة طالب الدكتوراه (حيدر فاضل عباس محسن) لغرض جمع عينة دراسة الدكتوراه والخاصة بالبحث الموسوم :

تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات الفرات الأوسط التعليمية للأطفال .

Assessment of Knowledge ,Attitudes ,and Traditional Preventive Practices of the Mothers toward Vitamin (D) Deficiancy among Children in the Middle Euphrates Pediatric Teaching Hospitals

مع الاحترام ...

الدكتور
حسام عباس داود
معاون العميد للشؤون العلمية والدراسات العليا
١٠/ ٣/ ٢٠٢٠

صورة عنه الى //
- مكتب السيد العميد للتفضل بالاطلاع مع الاحترام .
- لجنة الدراسات العليا مع الأوليات .
- الصادرة .

Elaf

E-mail:nursing@uobabylon.edu.iq
وطني 07711632208
المكتب 009647711632208
www.uobabylon.edu.iq

وزارة الصحة العراقية
دائرة صحة الديوانية
مركز تدريب و تطوير الملاكات
Al-Diwaniyah Health Office \ HRTDC

مركز تدريب وتطوير الملاكات / صحة الديوانية
وزارة الصحة العراقية
Iraqi Ministry of Health
Founded 1920

دائرة صحة الديوانية
مركز تدريب وتطوير الملاكات
الديوانية
العدد /
التاريخ /

No. :
Date : / /

العدد : ١٣٤
التاريخ : ٢٠٢٠/٩/٢

مستشفى النسائية والاطفال التعليمي
الديوانية
العدد/ ٤٥٩٤
التاريخ ٢٠٢٠/٩/٢

الى / م٠ النسائية والاطفال

م/ تسهيل مهمة

نهديكم أطيب تحياتنا :-

نرفق لكم كتاب جامعة بابل / كلية التمريض / لجنة الدراسات العليا ٧٦٥ في ٢٠٢٠/٣/١٠ والمتضمن تسهيل مهمة طالب الدراسات العليا / الدكتوراه (حيدر فاضل عباس) لغرض انجاز بحثه الموسوم (تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات الفرات الأوسط التعليمية للأطفال) لا مانع لدينا من تسهيل مهمه لانجاز بحثه الموسوم خدمة للصالح العام ولمواكبة عجلة التقدم ٠

مع الاحترام

الطبيب الاختصاص
يحيى فالح محمد
مدير قسم التدريب والتنمية البشرية
٢٠٢٠/ /

الطبيب الاختصاص
مؤيد حميد الجنابي
مدير المستشفى

نسخة منه الى //
* مكتب المدير العام
* مركز تدريب وتطوير الملاكات / وحدة البحوث

جدول يوضح عدد الاسرة و عدد الراقدين في مستشفى النسائية والاطفال في الديوانية ومعدل اشغال الاسرة وايام المكوث لسنة ٢٠٢٠

الشهر	باطنية اطفال				الخدج وحديثي الولادة				النسائية وتوليد			
	عدد الاسرة	عدد رقود المرضى	ايام المكوث	معدل اشغال الاسرة المهيئة	عدد الاسرة	عدد رقود المرضى	ايام المكوث	معدل اشغال الاسرة المهيئة	عدد الاسرة	عدد رقود المرضى	ايام المكوث	معدل اشغال الاسرة المهيئة
كانون ٢	113	926	2860	84%	44	192	625	47%	76	1548	2359	103%
شباط	113	1002	2130	62%	44	192	495	37%	76	1398	2057	90%
آذار	113	779	1941	57%	44	180	577	43%	76	1353	2004	87%
نيسان	113	457	914	26%	44	183	603	45%	76	1158	1686	73%
مايس	113	498	1488	43%	44	192	612	46%	76	1152	2304	101%
حزيران	113	637	1844	54%	44	181	588	44%	76	969	1533	67%
تموز	113	488	1049	30%	44	187	621	47%	76	1015	1480	64%
آب	113	198	600	17%	44	190	586	44%	76	1055	1509	66%
أيلول	113	334	710	20%	44	178	628	47%	76	1152	1670	73%
تشرين ١	113	489	1020	30%	44	184	605	45%	76	1355	2083	91%
تشرين ٢	113	775	1690	49%	44	186	663	50%	76	1351	2007	88%
كانون ١	113	1099	2335	68%	44	188	596	45%	76	1377	2038	89%
المجموع	1356	7682	18581	5.4	528	2233	7199	5.4	912	14883	22730	9.92
المعدل	113	1181.8462	2858.6154	0.830769231	44	343.53846	1107.53846	0.830769231	76	2289.6923	3496.9231	1.526153846

Ministry of Higher Education and Scientific Research
وزارة التعليم العالي والبحث العلمي
University of Babylon
College of Nursing
جامعة بابل
كلية التمريض
لجنة الدراسات العليا

Ref. No. :
Date: /

العدد :
التاريخ :

(العمل الطوعي مسؤولية الجميع لبناء العراق)

الى / دائرة صحة كربلاء المقدسة
م/ تسهيل مهمة

تحية طيبة :

يطيب لنا حسن التواصل معكم ويرجى تفضلكم بتسهيل مهمة طالب الدكتوراه (حيدر فاضل عباس محسن) لغرض جمع عينة دراسة الدكتوراه والخاصة بالبحث الموسوم :

تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات الفرات الأوسط التعليمية للأطفال .

Assessment of Knowledge ,Attitudes ,and Traditional Preventive Practices of the Mothers toward Vitamin (D) Deficiancy among Children in the Middle Euphrates Pediatric Teaching Hospitals

مع الاحترام ...

الدكتور
حسام عباس داود
معاون العميد للشؤون العلمية والدراسات العليا
٢٠٢٠/٣/١

صورة عنه الى //
- مكتب السيد العميد للتفضل بالاطلاع مع الاحترام .
- لجنة الدراسات العليا مع الأوليات .
- الصادرة .

Elaf

E-mail:nursing@uobabylon.edu.iq
STARS
07711632208
009647711632208

محافظة كربلاء المقدسة
دائرة صحة كربلاء المقدسة
مركز التدريب والتنمية البشرية
شعبة ادارة المعرفة
وحدة البحوث
العدد: ٧٦
التاريخ ١٦ / ١ / ٢٠٢١

جمهورية العراق

Holy Karbala governorate
Karbala Health Department
General manager's office
Training and Human Development
Center

إلى/ جامعة بابل / كلية التمريض

الموضوع/ تسهيل مهمة

تحيه طيبه....

كتابكم ذي العدد ٧٦٦ في ٢٠٢٠/٣/١٠

لا مانع لدينا من تسهيل مهمة طالب الدكتوراه (حيدر فاضل عباس) لإنجاز بحثه الموسوم :-

تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للامهات تجاه نقص فيتامين (د) لدى الاطفال في مستشفيات الفرات الاوسط التعليمية للاطفال)

في مؤسساتنا الصحية / مستشفى كربلاء التعليمي للاطفال علما ان المشرف العملي للبحث (د٠ عدي عبد الرضا) على ان لاتتحمل دائرتنا اي نفقات مادية مع الاحترام ٠

الدكتورة
تقوى خضر عبد الكريم
مدير مركز التدريب والتنمية البشرية
٢٠٢١/ ١/ ١٨

نسخة منه إلى
مستشفى كربلاء التعليمي للاطفال كتابكم المرقم ٣٣٨ في ٢٠٢١/١/١٨
مركز التدريب والتنمية البشرية مع الاوليات
زينا /

العنوان/كربلاء المقدسة- حي الحسين(ع) – قرب دائرة كاتب العدل - رقم الهاتف / ٠٣٢٣٢٨٠٠٢
البريد الالكتروني / train.centerKH@yahoo.com - Email /

جمهورية العراق

Holy karbala governarate
Karbala health directorate

محافظة كربلاء المقدسة
دائرة صحة كربلاء المقدسة
مستشفى كربلاء التعليمي للأطفال
العدد/ ٢٢٨
التاريخ / ١٨ / ١ / ٢٠٢١

دائرة صحة كربلاء المقدسة
مستشفى كربلاء التعليمي للأطفال
الصادرة
العدد
التاريخ / / ٢٠٢

الى / دائرة صحة كربلاء المقدسة / مركز التدريب والتنمية البشرية / شعبة إدارة المعرفة / وحدة البحوث

م / عدم ممانعة

السلام عليكم ٠٠٠ ٠
كتابكم المرقم ١٢٠ في ٢٠٢١/١/١٨
نود إعلامكم بعدم ممانعة مستشفانا من تسهيل مهمة طالب دراسات (حيدر فاضل عباس) لانجاز بحثه الموسوم (تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات (الفرات الأوسط التعليمية للأطفال) ويكون الدكتور (عدي عبد الرضا مريعي) مشرفا عمليا على البحث

٠٠٠ مع التقديـــــــــر

الدكتور
احمد توفيق عباس
مدير مستشفى كربلاء التعليمي للأطفال
/ ١ / ٢٠٢١

صورة منه إلى //
وحدة التدريب والتنمية / الاضبارة العامة

مقارنات احصائية ٢٠٢٠

التفاصيل	ك الثاني	شباط	اذار	نيسان	مايس	حزيران	تموز	اب	ايلول	ت الاول	ت الثاني	ك الاول	المجموع	المجموع الكلي للمراجعين
عدد مراجعي الاستشارية	5974	4868	2109	1848	2230	1865	1722	1850	1437		3280	3182	30365	135952
عدد مراجعي الطبابة الخافرة	7613	4759	1384	947	1454	865	485	497	682		2137	2044	22867	
عدد مراجعي الطوارئ	7119	4512	2137	1827	2608	1875	1424	1587	2230		3687	3371	32377	
عدد المرضى الراقدين	2431	2013	884	634	501	548	528	411	662	861	1045	1044	11562	
معدل انشغال الاسرة المهيأة	102%	88%	32%	25%	28%	25%	24%	23%	28%		38%	36%	449%	
مجموع ايام مجموع المكوث	7187	5810	195	1761	1998	1677	1702	1650	1963		2687	2729	29359	
معدل مكوث المريض الواحد	2.9	2.8	2,5	2,8	3,8	3	3,2	4	2,8		2,7	2.6	15.3	
اعداد الوفيات داخل المستشفى	43	37	26	37	26	26	49	29	45		40	37	395	
اعداد الفحوص المختبرية	23860	1776	6827	1440	7000	3845	3840	3854	6395				58837	
اعداد مراجعي المختبر	9592	2763	5943	624	6499	3314	3276	3314	3803				39128	
اعداد الفحوص الشعاعية	2671	2647	894	2331	469	1339	353	483	138				11325	
اعداد وفيات الخدج	5	6	3	37	26	7	11	6	9				110	
الايكو	283	318	160	152	144	157	122	87	138				1561	

٣. كربلاء / تعليمي للاطفال

جمهورية العراق
محافظة النجف الأشرف
دائرة صحة النجف
مركز التدريب و التنمية البشرية

العدد:- ١٢٠٣٢
التاريخ:- ٢٠٢٠/٥/

إلى/ جامعة بابل/ كلية التمريض
م / تسهيل مهمة

تحية طيبة ...
كتابكم المرقم ٧٦٧ في ٢٠٢٠/٣/١٠ ، بخصوص تسهيل مهمة الباحث طالب الدكتوراه **(حيدر فاضل عباس محسن)** لإجراء البحث الموسوم .
تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الاطفال في مستشفيات الفرات الاوسط التعليمية للأطفال
حصلت موافقة اللجنة العلمية للبحوث / مركز الدائرة على إجراء البحث في **(مستشفى الزهراء التعليمي)** على أن لا تتحمل دائرتنا أية تبعات مادية مع الإحترام .

ملاحظة :-
- تم إستيفاء أجور جباية البحوث والبالغة (١٠,٠٠٠) دينار بموجب الوصل المرقم (١١١٦٠٥) في ٢٠٢٠/٥/٤ .

دائرة صحة النجف الصادر لشؤون الامور الادارية والمالية والقانونية

الدكتور
د/ رضوان كامل الكندي
المدير العام
٢٠٢٠/٥/٧

نسخة منه الى/
- مكتب المدير العام / للعلم مع الإحترام .
- مركز التدريب و التنمية البشرية / مع الأوليات .
- مستشفى الزهراء التعليمي لتسهيل مهمة الباحث اعلاه مع الاحترام .

جمهورية العراق

محافظة النجف الاشرف

مركز التدريب والتنمية البشرية

جامعة الكوفة

العدد:-

التاريخ:- ٤/٥/٢٠٢٠

((إستهداف أي مكون عراقي إستهداف لكل العراقيين))

إلى / مستشفى الزهراء التعليمي

م/ تسهيل مهمة

تحية طيبة ...

إشارة الى كتاب جامعة بابل / كلية التمريض المرقم ٧٦٧في ٢٠٢٠/٣/١٠ والمتضمن طلب الموافقة على تسهيل مهمة أجراء بحث في مؤسستكم والموسوم بـ :-

تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الاطفال في مستشفيات الفرات الأوسط التعليمية للأطفال.

للباحث طالب الدراسات العليا / الدكتوراه (حيدر فاضل عباس محسن) للتفضل بالاطلاع وبيان رأيكم مع الاحترام.

المرفقات :-

استمارة أجراء بحث توقع وتعاد الينا .

الدكتور

حيدر خضير عباس

مدير مركز التدريب والتنمية البشرية

٤/٥/٢٠٢٠

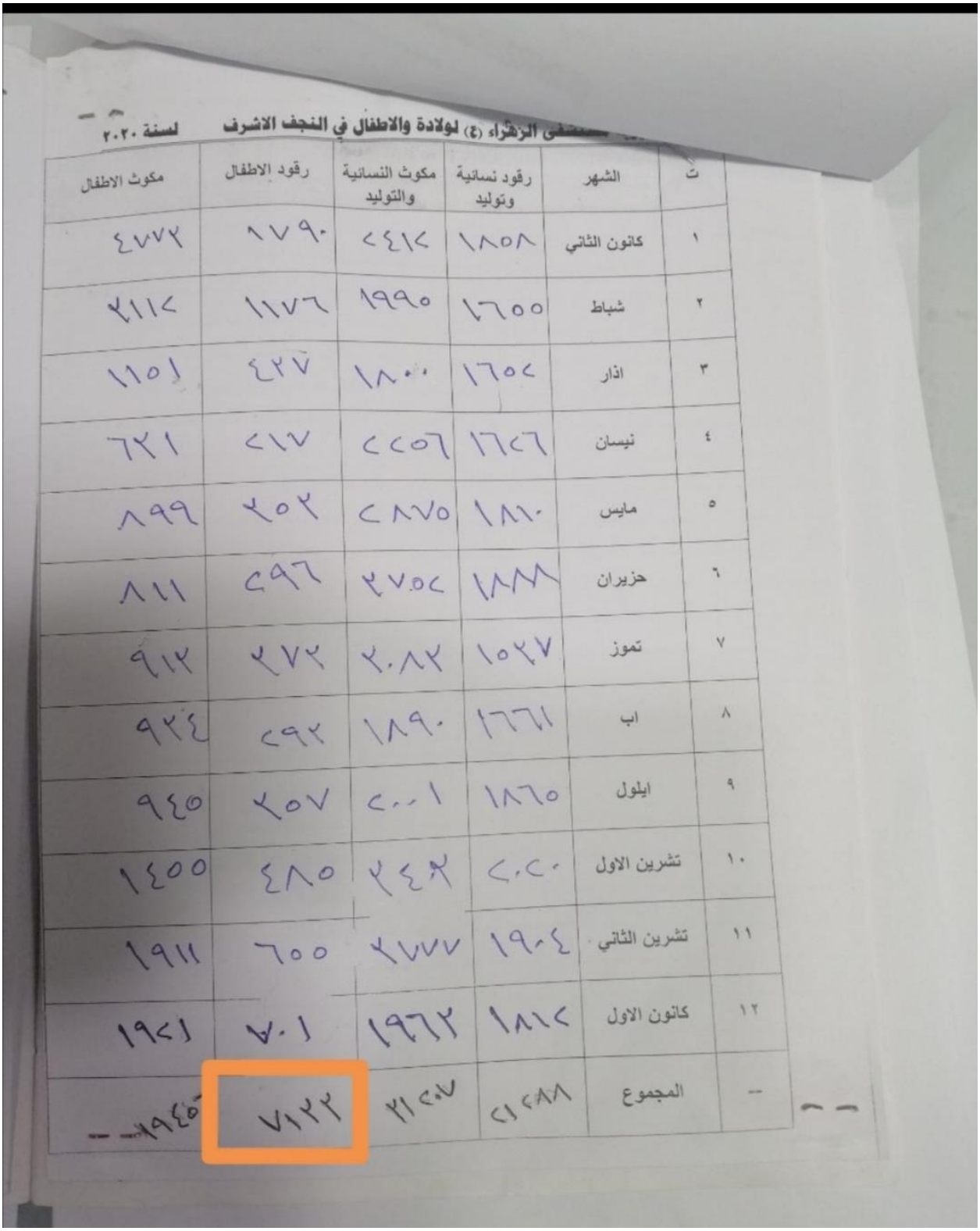
مستشفى الزهراء التعليمي

معاون المدير لشؤون التمريض

٢٠٢٠/٥/٧

نسخة منه الى

- مكتب المدير العام / للعلم مع الإحترام .
- مركز التدريب والتنمية البشرية / مع الأوليات .



لسنة ٢٠٢٠ ...مستشفى الزهراء (ع) لولادة والاطفال في النجف الاشرف

ت	الشهر	رقود نسائية وتوليد	مكوث النسائية والتوليد	رقود الاطفال	مكوث الاطفال
١	كانون الثاني	١٨٥٨	٢٤١٢	١٧٩٠	٤٧٧٢
٢	شباط	١٦٥٥	١٩٩٥	١١٧٦	٢١١٢
٣	اذار	١٦٥٢	١٨٠٠	٤٢٧	١١٥١
٤	نيسان	١٦٢٦	٢٥٥٦	٢١٧	٦٢١
٥	مايس	١٨١٠	٢٨٧٥	٢٥٢	٨٩٩
٦	حزيران	١٨٨٨	٢٧٥٢	٢٩٦	٨١١
٧	تموز	١٥٢٧	٢٠٨٢	٢٧٢	٩١٢
٨	اب	١٦٦١	١٨٩٠	٢٩٢	٩٢٤
٩	ايلول	١٨٦٥	٢٠٠١	٢٥٧	٩٤٥
١٠	تشرين الاول	٢٠٢٠	٢٤٩٢	٤٨٥	١٤٥٥
١١	تشرين الثاني	١٩٠٤	٢٧٧٧	٦٥٥	١٩١١
١٢	كانون الاول	١٨١٢	١٩٦٢	٧٠١	١٩٢١
--	المجموع	٢١٢٨١	٢١٢٠٧	٧١٢٢	١٩٤٥

Ministry of Higher Education and Scientific Research
University of Babylon / College of Nursing

تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات الفرات الأوسط التعليمية للاطفال

Assessment of Knowledge, Attitudes, and Traditional Preventive Practices of the Mothers toward Vitamin (D) Deficiency among Children in the Middle Euphrates Pediatric Teaching Hospitals.

Dear mother...
With all appreciation, gratitude, pride and pride, I appreciate the participation of your generous person in this questionnaire, which will help us in taking the desired benefit from the research, which will be preferred, God willing, to children, to reduce their affliction of vitamin D deficiency, So I hope the answer accurately and be correct Information to the benefit uncles for everyone.

Questionnaire No: ——————— Date: ——————————— Governorate:———————————

Demographic Information:

Part one (information about the child)

• Age of child / year ☐

• Gender/ Male ☐ Female ☐

Part two (mother's social and demographic information)

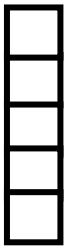
• Mother Age / year ☐

• Place of residence Urban ☐ Rural ☐

• Type of family
- Nuclear ☐ (The father, mother and brothers live only)
- Extended ☐ (The father, mother and children live with his father and brothers, there is more than one family)

• Number of children in the family ☐
• Mother's occupation ☐

- Working
-Not working
• Educational level of the mother
  - Not read and write
  - Primary
  - Intermediate and above
  - Institute and above



• Monthly Income
- Sufficient
-Sufficient some extent
-Insufficient

Part One (Mothers' Knowledge)

A test for mothers regarding knowledge of vitamin D information and sources, its role in the body and its complications in children, as well as knowledge about nutritional supplements.

No	Items	I Know	Uncertain	Do not know
1	I have simple information about vitamin D and its importance.			
2	Vitamin D has many benefits for children.			
3	Vitamin D is synthesized inside the body.			
4	Vitamin D is important in maintaining the level of calcium and phosphate in the body.			
5	Vitamin D promotes absorption of minerals in the intestine.			
6	Vitamin D helps absorb calcium in the body.			
7	Vitamin D is important for bone growth and immunity.			
8	Vitamin D helps heal the bones after any injury or surgery.			

9	**Sunlight is the best source of vitamin D production in the body.**			
10	**Children are at greater risk than adults for vitamin D deficiency.**			
11	**Males are more likely to have vitamin D deficiency than females.**			
12	**Obesity and digestive disorders are one of the factors that cause vitamin D deficiency in children.**			
13	**Consuming chronic medications such as antacids, cholesterol, cancer and cortisone drugs for children with certain diseases affects the absorption of vitamin D in the body.**			
14	**Today, vitamin D deficiency is one of the most important health problems in our country.**			
15	**Most of the required vitamin D is produced when the skin is directly exposed to sunlight and for a sufficient period.**			
16	**Children who are always at home are at greater risk than others for vitamin D deficiency.**			
17	**Darker skin is more susceptible to vitamin D deficiency than fair skin.**			
18	**Vitamin D inhibits the growth of cancer cells and enhances the activity of the immune system.**			
19	**If the mother suffers from vitamin D deficiency, her baby depends on breastfeeding completely.**			
20	**Giving vitamin D supplement to a child varies according to the seasons of the year.**			
21	**Eating more vitamin D than prescribed dietary recommendations can be harmful to a child.**			
22	**It is important for the child to take vitamin D supplements, and this varies with different age groups.**			

23	**Diets that contain fat are one of the major dietary sources of vitamin D.**			
24	**Meat and poultry are one of the major food sources of vitamin D.**			
25	**Eggs are a nutritious source of vitamin D.**			
26	**Milk and dairy products are one of the major food sources of vitamin D.**			
27	**Fruits are one of the nutritional sources of vitamin D.**			
28	**Vitamin D helps protect bones from fragility.**			
29	**Knowledge regarding signs and symptoms of vitamin D deficiency**	**I Know**	**Uncert ain**	**Do not know**
29-1	**Nausea**			
29-2	**Insomnia**			
29-3	**Anorexia**			
29-4	**Muscle spasm**			
29-5	**Inability to walk or difficulty walking and curving legs**			
29-6	**Curvature of the spine**			
29-7	**Pelvic abnormalities**			
29-8	**Chest bone protrusion**			
29-9	**Skull shape distortion**			

29-10	**Delayed wound healing**			
29-11	**Delayed tooth formation**			
29-12	**Severe headache, especially migraines**			
29-13	**Significant hair loss**			
29-14	**Impaired memory, cognition, and general transmission of the body**			
29-15	**Fractures as a result of exposure to minor bruises**			
29-16	**Increased child mortality**			

Part Two (Mothers' Attitudes)

Close-up testing of mothers by assessing the role of the mother in vitamin D deficiency in children.

No	Items	Agree	Partially agree	Disagree
1	**I think that being unfamiliar with the benefits of sun exposure prevents the production of the vitamin D required for a child's need.**			
2	**I think I have enough space in my private residence for my child to be exposed to sunlight to take advantage of Vitamin D.**			
3	**I am afraid of staying in residential buildings for a long time without exposing my child to sunlight needed to produce Vitamin D.**			
4	**I am interested in providing special places for children to play games and outdoor activities, as exposure of children to sunlight helps to produce Vitamin D.**			

5	**Imagine urbanization (urban housing) reducing exposure to sunlight and producing the amount of vitamin D needed for a child's development.**			
6	**I am afraid of the permanent use of powder and cream on the face, neck and hands of the child because it reduces or prevents the exposure of the skin to sunlight needed to produce vitamin D.**			
7	**Make sure to expose my child to frequent sunlight and I think that this does not lead to poisoning by increasing the percentage of vitamin in the body.**			
8	**I imagine that the high material cost of food sources that contain vitamin D is one of the obstacles to providing these sources.**			
9	**I suspect that taking nutritional supplements is necessary to treat vitamin D deficiency, but not to prevent it.**			
10	**I imagine that parents' unwillingness or fear of giving nutritional supplements to a child is one of the drawbacks of vitamin D deficiency.**			
11	**Vitamin D deficiency can be linked to some diseases such as rickets and stiffness.**			
12	**Often, the undesirable taste of some foods for children is one of the barriers that prevent them from consuming food sources that contain vitamin D.**			
13	**I think that vitamin D deficiency in children can be overcome by taking nutritional supplements compared to eating nutrients and exposure to sunlight.**			
14	**I fear for my child not being exposed to sunlight enough to meet the body's need for vitamin D**			
15	**Be sure to use nutritional supplements to replace vitamin D as directed by your doctor.**			

Part Three (Mothers' Practices)

A test for mothers regarding traditional preventive practices toward giving vitamin D, who prescribes it, and when it is given to a child

No	Items	Always	Sometimes	Never
1	To expose one part of my child's body to sunlight to benefit from Vitamin D.			
2	Follow my child's physical parameter (height / weight).			
3	I always watch the straightness of my child's legs.			
4	Take the child for a regular check-up at the appointment in the health center or private clinic.			
5	Giving breast milk by breastfeeding to get vitamin D with great benefit.			
6	In the event that the mother's milk is not available, we must consume the fortified milk to meet the child's need for vitamin D.			
7	Consider giving foods rich in vitamin D, such as milk and eggs.			
8	The duration of exposure to sunlight to get enough vitamin D is 15 to 20 minutes for fair skin and 30 minutes for darker skin daily.			
9	The best time for a child to be exposed to the sun is from 7-12 am continuously during the winter.			
10	The best time for the child to be exposed to the sun is from 8-10 am and 4-5 pm continuously during the summer.			
11	Pay attention to my baby's skin when exposed to direct sunlight for long times until he does not get sunburned.			
12	Use the hat / cover the child to avoid direct exposure to sunlight for long times when leaving.			

13	**Exposing the child directly to sunlight during the day to get the most out of Vitamin D.**			
14	**Use of oral drops to protect the child from vitamin D deficiency, according to a doctor's consultation.**			
15	**Protect the child from eating fast food and sweets.**			

وزارة التعليم العالي والبحث العلمي

جامعة بابل/ كلية التمريض

تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات الفرات الأوسط التعليمية للاطفال.

Assessment of Knowledge, Attitudes, and Traditional Preventive Practices of the Mothers toward Vitamin (D) Deficiency among Children in the Middle Euphrates Pediatric Teaching Hospitals.

عزيزتي الأم ...

بكل التقدير والامتنان والفخر والاعتزاز اقدر مشاركة شخصكم الكريم في هذه الاستبانة التي ستساعدنا في اخذ الفائدة المرجوة من البحث والذي سيعود فضله أن شاء الله على الأطفال للحد من اصابتهم بنقص فيتامين (د).. لذا أرجوا الإجابة بشكل دقيق وتوخي صحة المعلومة لأعمام الفائدة للجميع.

رقم الاستبانة:_____ التاريخ:_____ المحافظة:_____

المعلومات الديموغرافية :

الجزء الاول (معلومات عن الطفل)

- **عمرالطفل / سنة** ☐
- **الجنس /** **ذكر** ☐ **انثى** ☐

الجزء الثاني (المعلومات الاجتماعية والديموغرافية للأم)

- **عمرالام / سنة** ☐
- **مكان الاقامة /** **حضر** ☐ **ريف** ☐

- نوع الأسرة /
- مفردة ☐ (اي يسكن الاب والام والاخوان فقط)
- ممتدة ☐ (اي يسكن الاب والأم والأطفال مع ابيه واخوانه ووجود اكثر من اسرة)

- عدد اطفال الأسرة ☐

- مهنة الام
  - تعمل ☐
  - لاتعمل ☐

- المستوى التعليمي للام
  - لايقرا ولا يكتب ☐
  - ابتدائي ☐
  - متوسط فأكثر ☐
  - معهد فأكثر ☐

- الدخل الشهري للاسرة
  - يكفي ☐
  - يكفي ألى حد ما ☐
  - لايكفي ☐

الجزء الاول (معارف الامهات)

اختبار للأمهات فيما يتعلق بمعرفة معلومات ومصادر فيتامين (د) ودوره في الجسم ومضاعفات نقصه لدى الاطفال وكذلك المعارف حول المكملات الغذائية .

ت	الفقرات	أعرف	غير متاكد	لاأعرف
1	لدي معلومات بسيطة عن فيتامين (د) واهميته			
2	فيتامين (د) له فوائد عديدة للاطفال .			
3	يتم تصنيع فيتامين (د) داخل الجسم .			
4	يعتبر فيتامين (د) مهم في الحفاظ على مستوى الكالسيوم والفوسفات في الجسم .			
5	يعزز فيتامين (د) من امتصاص المعادن في الامعاء .			
6	يساعد فيتامين (د) على امتصاص الكالسيوم في الجسم .			
7	يعتبر فيتامين (د) مهم لنمو العظام والمناعة .			
8	يساعد فيتامين (د) على التئام العظام بعد اي اصابة او عملية جراحية .			
9	يعتبر ضوء الشمس أفضل مصدر لانتاج فيتامين (د) في الجسم .			
10	الاطفال معرضون اكثر من الكبار لخطر نقص فيتامين (د) .			
11	الذكور معرضون للاصابة بنقص فيتامين (د) اكثرمن الاناث.			
12	السمنة والاضطرابات الهضمية احدى عوامل الاصابة بنقص فيتامين (د) لدى الاطفال .			
13	تناول الادوية المزمنة مثل أدوية مضادات الحموضه وأدوية خفض ضغط الدم والكوليسترول وأدوية السرطان والكورتيزون للاطفال المصابين ببعض الامراض تؤثر على امتصاص فيتامين (د) في الجسم .			
14	حاليا ، يعد نقص فيتامين (د) أحد أهم المشكلات الصحية في بلدنا			
15	يتم إنتاج معظم فيتامين (د) المطلوب عند تعرض الجلد مباشرة لأشعة الشمس ولمدة كافية .			

16	الاطفال المتواجدون دائما في المنزل ، معرضون لخطر كبير اكثر من غيرهم لنقص فيتامين (د) .			
17	البشرة الداكنة أكثر عرضة لنقص فيتامين(د) من البشرة الفاتحة .			
18	ان فيتامين (د)يمنع نمو الخلايا السرطانية ويعزز النشاط للجهاز المناعي .			
19	اذا كانت الام تعاني من نقص فيتامين (د) وطفلها يعتمد على الرضاعة الطبيعية بصورة كاملة .			
20	اعطاء مكملات فيتامين (د) للطفل يختلف حسب مواسم السنة .			
21	تناول فيتامين (د) أكثر من التوصيات الغذائية المقررة يمكن أن تكون ضارة للطفل .			
22	من المهم للطفل تناول مكملات غذائية تحتوي على فيتامين (د) ويختلف ذلك باختلاف الفئات العمرية .			
23	الوجبات الغذائية التي تحتوي على الدهون هي احدى المصادر الغذائية الرئيسية لفيتامين (د) .			
24	اللحوم والدواجن هي أحدى المصادر الغذائية الرئيسية لفيتامين (د) .			
25	البيض هو أحد المصادر الغذائية لفيتامين (د) .			
26	الحليب ومنتجات الألبان هي احدى المصادر الغذائية الرئيسية لفيتامين (د) .			
27	الفواكه هي احدى المصادر الغذائية لفيتامين (د) .			
28	ان فيتامين (د) يعمل على حماية العظام من الهشاشة .			
29	**المعارف المتعلقة بعلامات وأعراض نقص فيتامين (د)**	**أعرف**	**غير متاكد**	**لاأعرف**
29-1	الغثيان			
29-2	الأرق			
29-3	فقدان الشهية			

29-4	التشنج العضلي			
29-5	عدم القدرة على المشي أو الصعوبة في المشي وتقوس الساقين			
29-6	انحناء العمود الفقري			
29-7	تشوهات الحوض			
29-8	بروز عظم الصدر			
29-9	تشوه شكل الجمجمة			
29-10	تأخر شفاء الجروح			
29-11	تأخر تكون الاسنان			
29-12	الصداع الشديد وخاصة النصفي			
29-13	تساقط الشعر بشكلٍ ملحوظ			
29-14	ضعف الذاكرة والإدراك والنحول العام في الجسم			
29-15	الإصابة بالكسور نتيجة التعرض لرضوض بسيطة			
29-16	زيادة معدل الوفيات عند الاطفال			

الجزء الثاني (أتجاهات الامهات)

اختبار للأمهات عن قرب من خلال تقييم دور الأم من نقص فيتامين (د) لدى الاطفال .

ت	الفقرات	موافق	موافق جزئيا	لااوافق
1	اعتقد أن عدم الالمام بفوائد التعرض لاشعة الشمس يمنع إنتاج كمية فيتامين (د) المطلوبة لحاجة الطفل .			
2	اظن أن لدي ما يكفي من المساحة في سكني الخاص لتعرض طفلي لأشعة الشمس للأستفادة من فيتامين (د)			
3	اخشى من البقاء داخل المباني السكنية لمدة طويلة دون تعريض طفلي لأشعة الشمس اللازمة لإنتاج فيتامين (د) .			

4	اهتم بتوفير الاماكن الخاصة للاطفال لممارسة الالعاب والانشطة في الهواء الطلق حيث يساعد تعرض الاطفال لاشعة الشمس على انتاج فيتامين (د) .			
5	اتصور أن التحضر (السكن في المدن) يقلل التعرض لأشعة الشمس وإنتاج كمية فيتامين (د) المطلوبة لنمو الطفل .			
6	اخاف من الاستخدام الدائم للبودرة والكريم على الوجه والعنق واليدين للطفل لانه يقلل اويمنع تعرض الجلد لأشعة الشمس اللازمة لانتاج فيتامين (د) .			
7	احرص على تعريض طفلي المتكرر لأشعة الشمس واعتقد ان ذلك لا يؤدي إلى التسمم بزيادة نسبة الفيتامين في الجسم .			
8	اتصور ان التكلفة المادية العالية للمصادر الغذائية التي تحتوي على فيتامين (د) هي احدى المعوقات لتوفير هذه المصادر			
9	اظن ان أخذ المكملات الغذائية ضروري لعلاج نقص فيتامين (د) ولكن ليس للوقاية منه .			
10	اتصور ان عدم رغبة الوالدين او خوفهم من اعطاء المكملات الغذائية للطفل هي أحدى عوائق نقص فيتامين (د) .			
11	من الممكن ارتباط نقص فيتامين (د) ببعض الامراض مثل الكساح والتصلب .			
12	غالبا مايكون الطعم الغير المرغوب به لبعض الأطعمة بالنسبة للإطفال هو أحد المعوقات التي تحول دون استهلاكهم للمصادر الغذائية التي تحتوي على فيتامين (د) .			
13	اظن ان نقص فيتامين (د) لدى الاطفال من الممكن تجاوزه من خلال تناول المكملات الغذائية مقارنة بتناول المواد الغذائية والتعرض لاشعة للشمس .			
14	اخشى على طفلي من عدم تعرضه لأشعة الشمس بصورة كافية لسد حاجة الجسم من فيتامين (د)			
15	احرص على استعمال المكملات الغذائية لتعويض فيتامين (د) وحسب اوامر الطبيب .			

الجزء الثالث (ممارسات الامهات)

اختبار للأمهات فيما يتعلق بالممارسات الوقائية التقليدية تجاه إعطاء فيتامين (د) ومن يصفه ومتى يتم اعطائه للطفل

ت	الفقرات	دائما	احيانا	ابدا
1	أعرض احد أجزاء جسم طفلي لأشعة الشمس للاستفادة من فيتامين (د) .			
2	اتابع المؤشرات الجسمانية لطفلي (الطول / الوزن) .			
3	اراقب دائما استقامة سيقان طفلي .			
4	اخذ الطفل للفحص الدوري وحسب الموعد المحدد في المركز الصحي او العيادة الخاصة .			
5	اعطاء حليب الام عن طريق الرضاعة الطبيعية للحصول على فيتامين (د) وبفائدة كبيرة .			
6	في حالة عدم توفر حليب الام علينا أستهلاك الحليب المدعم لسد حاجة الطفل من فيتامين (د) .			
7	مراعاة اعطاء اغذية غنية بفيتامين (د) كالالبان والبيض .			
8	ان مدة التعرض لأشعة الشمس للحصول على فيتامين (د) بصورة كافية هي من 15 الى 20 دقيقة للبشرة الفاتحة و 30 دقيقة للبشرة الداكنة يوميا .			
9	أفضل وقت لتعرض الطفل لأشعة الشمس هو من 7- 12 صباحا بأستمرار خلال فصل الشتاء .			
10	أفضل وقت لتعرض الطفل لأشعة الشمس هو من 8- 10 صباحا و 4 – 5 عصرا بأستمرار خلال فصل الصيف .			
11	انتبه لجلد طفلي عند التعرض المباشر لاشعة الشمس لاوقات طويلة حتى لايصاب بحروق الشمس .			
12	أستخدم القبعة /تغطية الطفل لتجنب التعرض المباشر لأشعة الشمس لاوقات طويلة عند الخروج .			

13	تعريض الطفل بشكل مباشر لأشعة الشمس خلال النهار للحصول على اقصى استفادة من فيتامين (د) .			
14	استعمال القطرات الفموية من اجل وقاية الطفل من نقص فيتامين (د) وحسب استشارة الطبيب .			
15	حماية الطفل من الاكثار من تناول الوجبات السريعة والحلويات .			

خبراء تحكيم استمارة الاستبانة

ت	اسم الخبير	اللقب العلمي	مكان العمل	الاختصاص	سنوات الخبرة
1	د. عفيفة رضا عزيز	أستاذ	جامعةبغداد/كليةالتمريض	تمريض صحة الاسرة والمجتمع	40
2	د. علي حسين الفيداوي	أستاذ	جامعة الكوفة /كلية الطب	بورد عربي/طب اطفال	39
3	د.طالب عبد الجليل جاسم	أستاذ	كلية الطب/جامعة الكوفة	دكتوراه طب وامراض الاطفال	38
4	د. سلمى كاظم جهاد	أستاذ	جامعة بابل/كليةالتمريض	تمريض صحة الاسرة والمجتمع	36
5	د. أمين عجيل الياسري	أستاذ	جامعة بابل/كليةالتمريض	تمريض صحة الاسرة والمجتمع	37
6	د.اركان بهلول ناجي	أستاذ	جامعةبغداد/كليةالتمريض	تمريض صحة الاسرة والمجتمع	35
7	د.شامل عبدالزهرة محمد	أستاذ	كلية الطب/جامعة الكوفة	دكتوراه طب وامراض الاطفال	34
8	د. باسمة شمخي جبار	أستاذ	كلية الطب/جامعة الكوفة	دكتوراه نسائية وتوليد	33
9	د. حسين جاسم محمد	أستاذ	جامعة بابل/كليةالتمريض	تمريض صحة الاسرة والمجتمع	29
10	د. رائد محمدرضا عمران	أستاذ	كلية الطب/جامعة الكوفة	دكتوراه طب وامراض الاطفال	28
11	د. جاسم محمد هاشم	أستاذ	كلية الطب/جامعة الكوفة	دكتوراه طب وامراض الاطفال	27
12	د. حسين هادي عطية	أستاذ	جامعةبغداد/كليةالتمريض	تمريض البالغين	18
13	د. عبد المهدي عبد الرضا	أستاذ	جامعة بابل/كليةالتمريض	تمريض الصحة النفسية	36
14	د. سحر ادهم علي	أستاذ	جامعة بابل/كليةالتمريض	تمريض بالغين	30
15	د. وسام جبار قاسم	أستاذ	جامعةبغداد/كليةالتمريض	تمريض صحة الاسرة والمجتمع	26
16	د. زينب حسن حميدي	أستاذ مساعد	كلية الطب/جامعة الكوفة	دكتوراه نسائية وتوليد	32
17	د. ناجي ياسرسعدون	أستاذ مساعد	جامعة بابل/كليةالتمريض	تمريض صحة الاسرة والمجتمع	31
18	د. علاء جمعة منجي	أستاذ مساعد	كلية الطب/جامعة الكوفة	دكتوراه طب وامراض الاطفال	22
19	د. هضاب جواد محسن	أستاذ مساعد	كلية الطب/جامعة الكوفة	دكتوراه طب وامراض الاطفال	12
20	د.آيسن كمال محمد	مدرس	جامعةبغداد/كليةالتمريض	تمريض صحة الاسرة والمجتمع	15
21	د.هند خـــــالد صبيح	طبيب استشاري	معهد بحوث التغذيه	طب المجتمع	28
22	د.عماد الدين عبد الهادي النقاش	طبيب استشاري	معهد بحوث التغذيه	طب المجتمع	25

Ministry of Higher Education and Scientific Research
University of Babylon
College of Education for Human Sciences

وزارة التعليم العالي والبحث العلمي
جمهورية العراق
جامعة بابل
كلية التربية للعلوم الانسانية

Ref. No :
Date: / /

العدد :
التاريخ :

إلى / جامعة بابل / كلية التمريض / مكتب السيد المعاون العلمي المحترم

م / إعادة اطروحة

تحية طيبة :

نعيد إليكم اطروحة طالب الدراسات العليا / الدكتوراه (**حيدر فاضل عباس**) بعد تقويمها لغويا من قبل أ.م.د. **حسين حميد معيوف** من قسم اللغة الانكليزية في كليتنا وقد ثُبت الملاحظات على متن الاطروحة .نأمل من الباحث الالتزام بها أثناء طبع الاطروحة.

مع الاحترام

أ.د.اسامة كاظم عمران
معاون العميد للشؤون العلمية
والدراسات العليا

نسخة منه إلى //
- الدراسات العليا .
- الصادرة

حنان

البريد الالكتروني bad_edu_humsci@yahoo.com
امنية 07801010633
www.uobabylon .edu.iq

الخلاصة

دراسة وصفية أجريت لتقييم معارف و اتجاهات وممارسات الأمهات التقليدية تجاه نقص فيتامين د لدى الاطفال في مستشفيات الأطفال التعليمية في الفرات الأوسط للفترة من الاول من كانون الأول 2020 ولغاية العاشر من نيسان 2021.

تضمنت عينة الدراسة (586) عينة من أمهات الأطفال الذين تقل أعمارهم عن 5 سنوات تم اختيارهن باستخدام عينة غير أحتمالية (عينة ملائمة) من 4 مستشفيات تعليمية في الفرات الأوسط والتي تشمل 4 محافظات . أداة الدراسة هي استمارة استبيان تتألف من 4 أجزاء تشمل: الخصائص الاجتماعية الديموغرافية والمعارف والاتجاهات والممارسات الوقائية التقليدية حول نقص فيتامين (د) لدى الاطفال . جمعت البيانات من العينة باستخدام أسلوب الملأ الذاتي والمقابلة .تم تحديد صلاحية المحتوى للاستبيان من قبل لجنة من الخبراء ، في حين تم تحديد موثوقية الاستبيان من خلال (معامل ألفا كرونباخ) ، وتم تحليل البيانات الكترونيا بواسطة برنامج (SPSS) .

أشارت نتائج الدراسة إلى أن متوسط عمر الأمهات (28.39) والانحراف المعياري (5.86) ، (63.3٪) منهم يسكنون المدينة ، (55.5٪) من أسر ممتدة ، (39.4٪) من الأمهات لديهن طفلان ، (66٪) لا يعملن ، (38.1٪) لديهن تعليم ابتدائي ، و (61.6٪) منهم لديهن دخل شهري يكفي إلى حد ما . (99.8٪) من الأمهات لديهن مستوى منخفض من المعارف ، (94.5٪)لديهن اتجاهات سلبية ، و (94٪) لديهن ممارسات بمستوى منخفض حول نقص فيتامين د .توجد علاقة ذات دلالة إحصائية بين اتجاهات الأمهات والممارسات التقليدية بمستوى معنوية 0.00 .

استنتجت الدراسة أن الأمهات في محافظات الفرات الأوسط لديهن مستوى معارف ضعيفً ، واتجاهات سلبية، وممارسات ضعيفة تجاه نقص فيتامين (د) بين الأطفال .

أوصت الدراسة بأهمية الاهتمام بالأم أثناء و بعد فترة الحمل والاهتمام بأطفالهن من خلال استخدام الفحوصات المختبرية والبدء بالدور التثقيفي في مراكز الرعاية الصحية الاولية من خلال البرامج والندوات والمناهج الارشادية وطبع البوسترات والملصقات من أجل زيادة معلومات الأمهات عن نقص فيتامين (د) ومضاعفاته لدى الأطفال وكذلك توضيح طرق منع نقص وعلاج فيتامين د .

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة بابل- كلية التمريض

تقييم المعارف والاتجاهات والممارسات الوقائية التقليدية للأمهات تجاه نقص فيتامين (د) لدى الأطفال في مستشفيات الفرات الأوسط التعليمية للأطفال

أطروحة مقدمة الى
مجلس كلية التمريض/ جامعة بابل - كجزء من
متطلبات نيل درجة الدكتوراه - فلسفة في
التمريض
من قبل

حيدر فاضل عباس

بأشراف
الاستاذ المساعد الدكتور نهاد محمد الدوري
الاستاذ المساعد الدكتور عماد هادي حميد

2021 ميلادي آب **1443هجري ذي الحجة**