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ASSESSMENT OF MOTHERS' KNOWLEDGE AND ATTITUDE ABOUT THE IMPORTANCE OF VITAMIN D SUPPLEMENTS FOR CHILDREN IN BASRA CITY

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Abstract

Background: Vitamin D is an important vitamin inside the human body. Vitamin D deficiency is common especially in women of childbearing age mostly because of a lack of knowledge regarding the impact of vitamin D and how to avoid being deficient in it. Vitamin D deficiency leads to many diseases that negatively affect the general health and maternal health.

Objectives: The main aims of our study were twofold. Firstly, we assess the knowledge and attitude of mothers about vitamin D. Secondly, a link relationship between knowledge and socio-demographic characteristics.

Material and methods: Descriptive Cross-Sectional research were carried out through the period of 18th November 2022 to 15th April 2023. The study included a random sample of (200) mothers from Basrah city, including all mothers who answered the questionnaire. A questionnaire was used as an instrument for data collection to assess mothers' knowledge The data were analyzed by using descriptive statistics and statistical inferential to find the difference between the socio-demographics variables of mothers and their knowledge and attitudes. Data were analyzed through the use of the SPSS application version 26.

Results: The results of the study show that (98.5 %) of people have heard of vitamin D before, (and 36.5%) of the mothers had learned about vitamin D from the media. When it came to vitamin D sources (sun, food, and supplements), moms gave the greatest response (43%) to the choice listed above. Moreover, about (52%) of mothers did not know the correct answer about the daily recommendation of vitamin D for children. Additionally, almost (79%) of moms agreed that taking

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vitamin D supplements through pregnancy is a good idea, (85.5%) thought that vitamin D supplements are essential for children, and about (79%) of moms believe that their child should get a test to determine the amount of vitamin D in their blood.

Conclusion: The mothers in the study had good knowledge and attitudes about vitamin D and its supplementation.

Recommendations: Education and training mothers who visit health centers during pregnancy and after birth that focus on the importance of vitamin D, Conducting study more comprehensive about the practice of mothers regarding vitamin D..

Keywords: *Mothers, Knowledge, Attitudes, Vitamin D, Children.*

Introduction

Vitamin D serves several crucial purposes. It modulates cell development, and neuromuscular, immunological, and bone metabolism by controlling calcium and phosphate balance. It may also have a significant impact on reducing inflammation and neuromuscular function. In addition to being created by the body when exposed to sunshine, vitamin D can also be found in eggs, fatty salmon, and fortified foods (Rafeeq et al., 2020). The vitamin D level of the mother at delivery affects the levels of vitamin D in the newborn (Khalessi et al., 2015). Because they are reliant on breast milk during their first few months of life, because breast milk is not a good source of vitamin D, and because sun exposure can be limited for a variety of reasons, infants are especially vulnerable to vitamin D deficiency (Antonucci et al., 2018). Infants with low vitamin D levels may experience seizures, breathing difficulties, and malformations of the bones (rickets) (Al Rekhawi et. al., 2017). Even though research has shown that a lack of sun exposure is the primary cause of vitamin D deficiency, vitamin D deficiency can still occur in hot, sunny regions (Mendes et. al., 2018). There is evidence that the Middle East has a higher predominance of rickets and vitamin D deficiency more than many Western nations; a comprehensive meta-analysis concluded that 20–80% of people in the region are vitamin D deficient (Lips et. al., 2019). The American Academy of Pediatrics (AAP) advises giving all babies who breastfeed 400 IU of vitamin D per day as a supplement (Hekimoğlu et. al., 2023).

Objective of the study

1. To assess mothers' Knowledge and Attitudes about Vitamin D supplements among their children in Basrah.

2. To determine the association between mothers' sociodemographic traits along with their knowledge and attitudes regarding vitamin D supplements for their children.

Methods

Design of the study: A descriptive Cross-Sectional study design is carried out throughout the present study (Assessment of mothers' knowledge and attitude toward the importance of vitamin D supplements for children in Basra city) from the period of 18th November 2022 to 15th April 2022.

Sample of the study: The research included about 200 random samples of mothers who answered the questionnaire from different regions of Basrah city (from Basrah University, Al-Zubair district, and Al-Dear district).

Ethical consideration: Before data collection, the researcher met with mothers and discussed the purpose of the study before participating and obtained oral consent from every patient before data collection.

Project instrument: To achieve the objectives of the study, the researchers use a questionnaire that consists of three parts (Appendix 1, Appendix 2): **Part one: Socio-demographic data** It consists of six variables (mother's age), (number of children), (child's age), (employment), (level of education) and (family income). **Part two: knowledge of mothers** It includes eight questions designed to evaluate the mother's understanding of the following topics: the importance of vitamin D; the daily amount of vitamin D that is required; the source of her knowledge about vitamin D; the complications that related to vitamin D deficiency; and the main sources of vitamin D. **Part three: Attitude of mothers** included six questions focus on the attitudes of the mothers regarding vitamin D and its supplementation (questioning about their attitudes toward using supplements containing vitamin D through pregnancy, exposing their babies to direct sunlight, and whether or not their child needs a vitamin D supplement).

Statically and data analysis: The raw data were analyzed using descriptive statistics and to find the difference between the socio-demographic variables of mothers and their knowledge and attitudes. Data were analyzed by using the SPSS application version 20. inferential data analysis includes frequency and percentage. The chi-square test was used to determine the significant relationship between the mother's knowledge with their socio-demographic characteristics.

Results

This study included 200 mothers who were selected from different areas in Basrah city. The results of the study show that the mother age group (15 - 25 years) represents (43.5.%) of all participants, and about 36 % of them were housewives. The results also showed that 36% of mothers had one child, and about 26% of children aged (7- 12 months). According to the level of education (45.5%) of mothers had a bachelor's degree. About (58.5%) of the studied mothers showed that they lived on a medium income. Table (2) reported that About (98.5%) of mothers had heard about vitamin D. About (36.5%) of mothers had been informed about vitamin D from the media. Furthermore, regarding the natural sources of vitamin D, the highest answer (43%) identified by mothers was the option above (sun, food, and supplements). Moreover, about (52%) of mothers did not know the correct answer about the daily recommendation of vitamin D for children. The table also showed that about (65%) of mothers answered yes about sufficient vitamin D in breast milk, which is considered an incorrect answer. About (95%) of participating mothers say that vitamin D is essential to bone growth and immunity, and about (65%) of mothers answered that vitamin D helps absorb calcium. Regarding vitamin D deficiency causing hypertension, Diabetes, arthritis, and asthma (44%) of mothers answered yes.

Table 1. Characteristics of samples according to maternal socio-demographic data

Variables	Groups	Frequency N = 200	Percent 100%

Age of mother	15 – 25 years	87	43.5
	26 – 35 years	75	37.5
	36 – 45 years	38	19
Number of Children	One	72	36
	Two	51	25.5
	Three	36	18
	More than	41	20.5
Age of child	0 - 6 months	46	23
	7 - 12 months	52	26
	13- 18 months	30	15
	19 - 24 months	41	20.5
	24 – 36 months	31	15.5
Occupation	Housewife	112	56
	Employed	49	24.5
	Student	39	19.5
Education	Primary	37	18.5
	Secondary	67	33.5
	Bachelor	91	45.5
	Master / PhD	5	2.5
Family income	Poor	34	17
	Medium	117	58.5
	Good	49	24.5

The results of the study show that about (80.5%) had good knowledge of vitamin D and its supplements. And regarding mothers' attitudes revealed that about (79%) of mothers agreed with using vitamin D supplements in pregnancy. Moreover, about (85.5%) of mothers agreed that vitamin D supplement is necessary for children. About 48.5% of people did not believe that a breastfed baby would require a vitamin D supplement more than one on a milk formula. About (79%) of mothers think that should do a test on their child to know the level of vitamin D concentrations in the blood. There were (96%) of mothers think that children should be exposed to sunlight, and (44.5%) of mothers don't think that if the child is exposed to sunlight, they do not need to give them vitamin D drops.

Table 2. Mother's knowledge about Vitamin

Question	Answers	Frequency N = 200	Percent 100%
Have heard about Vitamin D	Yes	197	98.5
	No	3	1.5
Who/What is the source of information about Vitamin D	Family/friends	43	21.5
	Physician	52	26
	University/workplace	32	16
	Media	73	36.5
What are the sources of vitamin D	Sun	73	36.5
	Food	14	7
	Supplements	17	8.5
	All above	86	43
	Don't know	10	5
The daily recommended Vitamin D for children	400 – 600 IU	74	37
	500 – 1000 IU	22	11
	Don't know	104	52
Is there enough vitamin D in breast milk	Yes	130	65
	No	42	21
	Don't know	28	14
Vitamin D is essential for immunity and bone growth	Yes	190	95
	No	1	0.5
	Don't know	9	4.5
Vitamin D facilitates the absorption of calcium.	Yes	130	65
	No	5	2.5
	Don't know	65	32.5
Vitamin D deficiency causes hypertension, Diabetes, arthritis, and asthma.	Yes	88	44
	No	33	16.5
	Don't know	79	39.5

Table 3. Assessment of mother's knowledge of vitamin D supplements.

Classification	Frequency	Percent
Poor	39	19.5
Good	161	80.5

Table (4): Mother's attitudes toward Vitamin D supplementation

Question	Answers	Frequency N = 200	Percent 100%
Do you think that you should take vitamin D supplementation during lactation?	Yes	158	79
	No	17	8.5
	Don't know	25	12.5
Do you think that your child needs a vitamin D supplement	Yes	171	85.5
	No	22	11
	Don't know	7	3.5
Do you think that a breastfed baby requires less vitamin D than a baby-fed milk formula?	Yes	76	38
	No	97	48.5
	Don't know	27	13.5
Do you think your child should have a test to determine the level of vitamin D	Yes	158	79
	No	22	11
	Don't know	20	10
Do you think that your child should be exposed to sunlight	Yes	192	96
	No	7	3.5
	Don't know	1	0.5
Do you think that your child does not require vitamin D drops if they are exposed to sunlight	Yes	87	43.5
	No	89	44.5
	Don't know	24	12

Table 5. Relationship between knowledge and socio-demographic data.

Variables	Groups	Knowledge		p-value
		Poor	Good	
Age of mother	15 – 25 years	0	87	0.1 NS
	26 – 35 years	0	75	
	36 – 45 years	1	38	
Number of Children	One	0	72	0.2 NS
	Two	0	51	
	Three	0	36	
	More than	1	40	
Age of the child	0 - 6 months	0	46	0.4 NS
	7 - 12 months	0	52	
	13- 18 months	0	30	
	19 - 24 months	1	40	
	24- 36 months	0	31	
Occupation	Housewife	1	111	0.6 NS
	Employed	0	49	
	Student	0	39	
Education	Primary	1	36	0.2 NS
	Secondary	0	67	
	Bachelor	0	91	
	Master / PhD	0	5	
Family income	Poor	1	33	0.08 NS
	Medium	0	117	
	Good	0	49	

NS= not significant

The results also, demonstrate that there is no significant correlation between knowledge and sociodemographic data.

Discussion

Vitamin D deficiency is a very important case around the world. The normal value of vitamin D in a pregnant mother is important for a healthy pregnancy, and its deficiency may be associated with many diseases that pose a threat to the mother and child's health. Mothers' poor knowledge about vitamin D may be related to its availability in food. The absence of

health recommendations to obtain it, and the lack of attention directed to this issue in the media and health education.

Knowledge part

The current study reported that About (98.5%) had previously heard about vitamin D, this result is close to a result conducted in Turkey in 2022, where the level of hearing about vitamin D was (97%) (KÜRKLÜ et. al., 2022). In another study in the United Arab Emirates in 2023 about (99.5%) of the participants' mothers had prior knowledge of vitamin D (Al-Blooshi et. al., 2023). Furthermore, (36.5%) of mothers had been informed about vitamin D from the media. These findings are in agreement with the study in Cairo 2020**,** since (62.4%) of mothers had to get their information about vitamin D through media (46.5%) (Soliman et. al., 2020) and disagreed with a study in the United Arab Emirates 2023 (42%) of mothers' herd through media but the majority of them (73%) obtained data regarding vitamin D from medical experts (Al-Blooshi et. al., 2023).

Depending on the main sources of vitamin D, the biggest answer (43%) identified by mothers was the option all above (sun, food, and supplements), (36.5%) answered from sun, (8.5%) from supplements, and (7%) from food. These results are similar to a study in the Saudi Kingdom 2017 and Cairo 2020 found that the majority of mothers correctly identified the sun as a source of vitamin D. (Bassam and Abd-Elmageed, 2022; Soliman et. al., 2020). Moreover, about (52%) of mothers did not know the correct answer about the daily recommendation of vitamin D for children, and only (37%) of mothers answered the correct option. In Turkey in 2022 about (60%) of mothers give the daily recommended dose (KÜRKLÜ et. al., 2022).

The report also showed that about (65%) of mothers answered yes about sufficient vitamin D in breast milk. On the other hand, in Baghdad in 2016, only 14.25 percent of people knew that breast milk is inadequate in vitamin D, which is regarded as a low percentage (Rasheed et. al., 2017). where 40% of mothers believed milk to be an adequate source of vitamin D and over 40% were unaware of the nutritional sources of the vitamin (Çiçek et. al., 2015). About (95%) of mothers say that vitamin D has benefits for bone growth and immunity, and about (65%) of mothers answered that vitamin D helps in calcium absorption. Regarding vitamin D deficiency causing hypertension, Diabetes, asthma, and arthritis, (44%) of mothers answered yes. These results agreed with a study in Baghdad 2016**,** since (60.25%) of mothers agreed that vitamin D is essential for bone growth and immunity, about (64.25%) of mothers answered that vitamin D helps to absorb calcium, and about (22%) said that lake of vitamin D cause hypertension, diabetes, asthma, and arthritis (Rasheed et. al., 2017). On the other hand, an Indian study in 2015 discovered that just 29% of mothers knew the importance of vitamin D for bone health, and 52% of Indian mothers were unaware of these advantages. (Kavitha et. al., 2015). This study showed that about (80.5 %) of mothers had good knowledge of vitamin D and its supplementation. These results may be due to the surrounding environment and media which encourage people to take vitamin D supplements due to their importance to body health.

Attitudes Part

The current study revealed that (79%) agreed with getting vitamin D supplementation throughout pregnancy. A bout of mothers (85.5%) agreed that vitamin D supplements are very important for children. These results agreed with a study in Cairo in 2020 in which, (56.9%) of mothers concurred with using vitamin D supplements through pregnancy (Soliman et. al., 2020). About (48.5%) didn't think that if the baby is breastfed does not need to take vitamin D supplements than if it were on milk formula. This result disagreed with a study in Baghdad 2016 in which (52.25%) of mothers said that the baby does not require vitamin D supplements than if the baby was on the milk formula (Rasheed et. al., 2017).

About (79%) of mothers think that should do a test on their baby to know the level of vitamin D in their blood. This is agreed with Cairo 2020 (Soliman et. al., 2020). There were (96%) of mothers think that babies should be exposed to sunlight, and (44.5%) of mothers don't think that if the babies are exposed to sunlight, they do not need vitamin D drops. In Cairo 2020 had the same results, most mothers (90.3%) agreed with exposing their babies to the sun (Soliman et. al., 2020). This study demonstrated that the relationship between socio-demographic data and knowledge is not significant. These results disagreed with previous studies in Cairo 2020 and in the United Arab Emirates 2023 that found a relationship between education level and knowledge of vitamin D (Soliman et. al., 2020; Al-Blooshi et. al., 2023).

Conclusions

In our study, the analytical results showed that the majority of mothers had good knowledge of vitamin D. This study showed that mothers had positive attitudes about the benefits of vitamin D supplements. There was not a significant relationship between mothers' knowledge about vitamin D deficiency and the socio-demographics of mothers.

Recommendations

It is suggested that the Ministry of Health oversee the free program that provides vitamin D to expectant mothers, their postpartum bodies, and their offspring via health centers. Broadcasting education and training mothers who visit health centers through pregnancy as well as after birth by focusing on the benefits of vitamin D. Preparing a booklet about vitamin D focusing on its sources and avoiding its deficiency and disseminating it to all primary health centers. Intensify awareness programs, especially on social media. Open counseling sessions for women of childbearing age on the importance of vitamin D for infants. Holding educational seminars about the risk of babies suffering from vitamin D deficiency. Conducting periodic tests to check the normal value of vitamin D in children. Conducting study more comprehensive about the practice of mothers regarding vitamin D.

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