Knowledge about Nutritional Rickets by Mothers in some Primary Health Care Centers in Baghdad

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Abstract:
Background: It is a childhood disease that causes weak or soft bones and may be exposed to fractures and skeletal deformities.
Methodology: across – sectional descriptive study was conducted during November and December, 2018 in both Primary Health Care centers of Bab- Al Muadhum and Baghdad Al- Gadeda Awal involving 139 mothers, they were subjected to self-administrated questionnaire covering their socio-demographic, disease related characteristics and different questions related to rickets. The data were statistically analyzed by frequency, percentage, and percentage score for each question.
Results: showed very high percent score 95%, 88%, for insufficient intake of calcium and no enough exposure to sun as disease etiology and for signs and symptoms the highest present score 84% for bowing of legs.The response to prevention and treatment is even more encouraging. 92%, 95% of people are fully exposed to the sun and consume enough calcium and vitamin D every day.
Conclusion: Satisfactory knowledge of included mothers for disease etiology, signs and symptoms and more encouraging for prevention and treatment.
Key words: rickets/ mothers/ knowledge.

Introduction:

Rickets is a disease that first appears in children between six and twenty-four months old [(1)], due to multiple factors such an vitamin D deficiency which may result from a low dietary intake and calcium deficiency [(2)], prolonged breast feeding without supplementation [(3)], lack of sunlight exposure [(4).]. The underlying mechanism involves insufficient growth plate calcification.[(5)]

Nutritional rickets are common in many countries, including Middle Eastern countries, developing countries (Ethiopia, Yemen), and Asian countries (China and Mongolia) [(6)].

The signs and manifestations of rickets including bone and solid torment , hypo calcemic tetany, deferred tooth emissions, late conclusion of the fontanelle, broadening of joints, bowed legs and thump knees, uncommon state of ribs (rachitic rosary), enlarged wrist and lower leg joints and postponed development. [(1, 7)].

Analysis is essentially subject to blood test like low degree of calcium and phosphorus, and a high antacid phosphatase along with X-beams findings.[(8)]

Nutritional rickets has many complications related to growth delay. Delay in sitting, standing, crawling, walking, failure to thrive, and delay in dental eruption , also bone fractures, muscle spasms, abnormally curved spine ,and limb and pelvic deformities.[(9-12)]

Dietary rickets has impressive consideration according to public perspective in various created and non-industrial nations, consideration has been centered around rickets on account of its connection to expanded baby and youth mortality particularly when muddled by lower respiratory lot diseases .[(13)] Rickets can be prevented by exposure to sunshine lights, ultra violate lights, oral using of vitamin D, daily dose for prophylaxis this vitamin D one mq or 400 1.U[(14)].

The aim of health education is health promotion changes in people behavior. Mothers' health knowledge plays a vital role in this respect since that it will be reflected on care provided to child [(15).]

Aim of the study:

To evaluate the knowledge of mothers attending some Primary Heath Care centers (PHCCs) regarding nutritional rickets.

Participants and methods:

Descriptive cross-sectional review conducted at Primary Health Care Centers (PHCCs) of Baghdad Al- Gadida Awal and Bab-Almuadhum.
The data were gathered during November and December 2018.

Sampling and data collection: One hundred and thirty-nine mothers (139) were enrolled into the study who met the inclusion criteria of having at least one child aged 24 months. All participants had been informed about the aim of the study and permission of the participants has taken by oral consent and privacy was taken into consideration and they filled previously prepared self-administrated questionnaire in selected areas in the primary health center like vaccination room. The questionnaire consists of demographic characteristics and disease related characteristics and different statements covering different aspects regarding the knowledge of the subject of nutritional rickets collected from different researches and textbooks references in three main

domains (disease etiology, signs and symptoms, ways of prevention and control).

Knowledge has been evaluated by utilizing recurrence, rate for each question reactions, the inquiry reactions were scored as 3 was for noting yes(correct) reply, two (2) for noting don't have the foggiest idea and (1) one for noting no (incorrect)and the percent score of moms' reactions for every particular thing was determined by the accompanying condition: All out scores for all took an interest moms in each question X 100/greatest potential scores for all remembered moms for a similar inquiry. The all out scores for all moms in the item= [(No. of no responses x 1) + (No. of don't know answers x 2) + (No. of yes answers x 3)]. While the greatest potential scores for all took an interest moms in each question == No. of all out (example x 3], in light of Triple Likert Scale. [16]

Results:

Table (1): shows that the highest proportion of mothers (43.89%) in the age group 20-30 year, the majority (78.42%) from urban residency, 54.67% of last child's age 1-5 years, , 48.20% had 4-6 family number, 89.93% were married, 35.25%secondary level of education .

Table 1: Distribution of mothers regarding socio demographic characteristics:

Socio-demographic characteristic of mothers	no	%
Age of mother 6 (year)s		
<20	8	5.75
20-30	61	43.89
31-40	49	35.26
>40	21	15.10
Residency		
Urban	109	78.42
Rural	30	21.58
Last Childs age (years)		
<1	29	20.86
1-5	76	54.67
5-10	28	20.15
>10	6	4.32
No.of family members		
<3	8	5.75
4-6	67	48.20
7-9	48	34.54
10 and over	16	11.51
Marital status		
Married	125	89.93
Divorced/separated	5	3.59
Widow	9	6.48
Mothers educational level		
Can read and write	25	17.98
Primary	35	25.18
Secondary	49	35.25
Collage and more	30	21.59

Table (2) : Distribution of mothers regarding disease related information .

Disease related information	No.	%
Having any child with rickets		
yes	30	21.58
No	109	78.42
Having rickets among relatives		
yes	33	23.74
No	106	76.26
Age of starting rickets		
<6months	48	34.53
6months-2years	58	41.72
>2 years	33	23.75
The disease can be treated		
yes	115	82.73
No	24	17.27
Food rich in calcium		
Milk	90	64.75
Fish	21	15.10
Liver	14	10.08
Leafy vegetables	39	28.08
Seeds	5	3.59
Food rich with vitamin D		
Egg	52	37.41
Fish	57	41.00
Cod liver oil	20	14.39
Milk	35	25.17
Cooking oil	2	1.43

Table (2): shows that only 21.58% of mothers had child with rickets, 23.74% had rickets among relatives, 41.72 % in the age of starting rickets 6 months-2years , 82.73% the disease can be treated , 64.75% milk is the most rich food in calcium, 41.0% stated that fish as the most food rich in vitamin D.

Table (3) shows the knowledge responses of mothers regarding disease etiology, it was with highest correct responses (82%, 76.26%) with present score 90%, 88% regarding in sufficient intake of calcium and no enough exposure to sunlight , the lowest correct responses (20.87% and 21.59%) , with present score 58 and 54% regarding twin pregnancy and obesity in children .

Table (3); knowledge responses of the mothers regarding disease etiology:

Disease etiology	Yes		No		Don't know		Percent score
	No.	%	No.	%	No.	%	
Obesity in children	30	21.59	82	58.99	27	19.42	54
Exclusive breast feeding	50	35.98	80	57.55	9	6.47	59
Early walking	26	18.72	88	63.30	25	17.98	51
Hereditary causes	57	41.00	60	43.17	27	19.43	68
Insufficient intake of calcium	114	82.00	14	10.29	11	7.91	90
Preterm delivery	67	48.2	41	29.5	31	22.3	73
No enough exposure to sunlight	106	76.26	16	11.51	17	12.23	88
Multi pregnancies	51	36.69	52	37.41	36	25.90	66
Twin pregnancies	29	20.87	65	46.76	45	32.37	58
Disease decrease calcium absorption	62	44.60	31	22.30	46	33.00	74
Vegetarian diet	49	35.22	44	31.65	48	34.53	69

The table (4): shows mothers responses regarding signs and symptoms of rickets, the highest current responses (73.38% and 48.29%) with present score 84% and 72% regarding bowing of legs and delayed teeth eruption, while the lowest correct responses (25.89% and 29.49%) with percent score % and 62% regarding bossing of skull and swelling of joints.

Table (4) knowledge responses of mothers regarding signs and symptoms of rickets .

Signs and symptoms	Yes		No		Don't know		Percent score
	No.	%	No.	%	No.	%	
Delayed closure of fontanels	56	40.28	47	33.81	36	25.89	69
Delayed teeth eruption	68	48.29	47	33.81	24	17.26	72
Bowing of leg	102	73.38	28	20.14	9	6.47	84
Swelling of joints	41	29.49	60	43.16	38	27.33	62
Cracking of knee	58	41.72	53	38.12	28	20.14	68
Exposure to fracture	65	46.76	39	28	35	25.17	73
Muscular spasm	42	30.21	54	38.84	43	30.93	64
Delayed growth and short stature	77	55.39	33	23.74	29	80.86	77
Muscular pain	50	35.97	40	28.77	49	35.25	69
Bossing of skull	36	25.89	66	47.48	37	26.61	60
Arching of back	57	41	47	33.81	35	25.17	69
Thoracic cage deformity	42	30.21	63	45.32	34	24.46	62
Widening of wrist	42	30.21	42	30.21	55	39.56	67

Table (5): shows mothers knowledge responses regarding prevention and control of rickets, the highest correct responses (82.74 % , 79.14%) was with present score 92% and 95% , regarding enough exposure to sunlight and monitoring child growth, the lowest correct responses (36.69%) , was with present score72% for intake of cod liver oil .

Table (5) knowledge responses of mothers regarding ways of prevention and control.

Prevention and control	Yes		No		Don't know		Percent score
	No.	%	No.	%	No.	%	
Enough exposure to sunlight	115	82.74	11	7.91	13	9.35	92
Weaning at 4-6 month	78	56.12	37	26.62	24	17.26	76
Intake of vit D supplementation in case of exclusive breast feeding	86	61.88	20	14.38	33	23.74	82
Intake of cod liver oil	51	36.69	27	19.43	61	43.88	72
Regular doctor visit for early diagnoses	103	74.1	9	6.47	27	19.42	84
Intake of calcium and vitamin D daily	109	78.41	13	9.35	17	12.24	90
Intake of vitamin D injections	71	51.08	25	17.98	43	30.94	78
Monitoring Childs growth	110	79.14	12	8.63	17	12.23	95

Discussion :

Rickets in childhood is manifested by softening and weakening of the bone, resulted from deficiency of vitamin D [17].

In the current study, the highest percentage of mothers (43.88 %), where in the age group 20-30 years, which was consisted with the results of [1], with mean age 28.4 ± 7.4 and 26.1± 5.3 years for rickets and non- rickets group . Also 35.25% with secondary education compared to [1], 17.3 % for non-rickets group, < 13 % for rickets group.

Knowledge responses regarding disease etiology was with excellent present score (90%) for insufficient intake of calcium, 88% for no enough exposure to sunshine , this result contradict to finding of [18] in Nigeria as inadequate exposure to sunshine and in adequate intake of calcium was mentioned by quarter of the respondents , also [19] mentioned that's rickets results from inadequate intake of vitamin D and in sufficient exposure to sunlight.

Detection the disease was with very good percent score, 84% for bowing of legs , while the results of [1] related 17.3 % for rick etic group , and 32.2% for non- rick etic group .

All responses regarding the ways of prevention and treatment in this study was satisfactory especially for enough exposure to sun (present score 92%) and daily intake of vitamin D and calcium percent score (90%)

While the result of [18] in Nigeria showed one fifth of the mothers knew increased exposure to sunshine, surgery and as the form of major treatment for deformed knee joint.

Follow up with doctors' advice was suggested by (present score 89%) in this study while [1] shows 15.9% ricketic group and 12.4 % in non-ricketic group . The mothers52.5% included by [15] with high level of education knew how to prevent rickets (exposure to sunlight) while 90% of mothers who read and write only not know how to prevent the disease, don't know how to prevent rickets by exposure the child to sun and al Rawi et al [20] found that rickets is still a common problem in our country during infancy and early childhood and found that most of the rickety children were not exposed to sun.

Conclusion:

In general, the knowledge of mothers regarding nutritional rickets was satisfactory with more encouraging responses regarding ways of prevention and control

Recommendation:

1. Nutrition education progress for mothers should be carried on.
2. A nutritional surveillance system must be established.
3. Further studies on the rickets to provide additional data.

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Rewrite Article

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