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(RESEARCH ARTICLE)



A study to assess knowledge and attitude regarding vitamin A deficiency among mothers of under five children in selected pediatric OPD, WB

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Abstract

Aim: This study intends to focus on assessment of knowledge and attitude regarding vitamin A deficiency among mothers of under five children in selected Paediatric OPD, West Bengal. 100 participants were selected through purposive sampling technique.

Materials and Methods: Data were selected through interviewing technique using structured interview schedule.

Results: It revealed that most of the mothers (55%) had average knowledge, (28%) mothers had good knowledge, and (17%) mothers had poor knowledge. Knowledge score ranged from 1-12 with mean 7.1 and median 7.5 and calculated SD was 2.4. It also revealed that most of the mothers (60%) of under five children had good attitude, (34%) mothers had average attitude and (6%) mothers had poor attitude. Attitude score ranged from 1-10 with mean 7.6 and median 7.1 and calculated SD was 1.8. There was significant association with knowledge score and selected demographic variables, like- age of mothers, educational qualification, distance of health centre from home and any missed dose of baby. There was also significant association between attitude score with selected demographic variables like- educational qualification, habitant, distance of health centre and visited health centre along with children. The study findings have significant implications for nursing administration and research.

Keywords: Assess; Mothers of under five children; Knowledge; Attitude; Vitamin A deficiency

1 Introduction

Vitamin A is an essential nutrient needed for the normal functioning of the visual system. It is a fat soluble vitamin that is naturally present in many foods. Vitamin A is important for normal vision, immune system, reproduction, growth and development. Vitamin A also helps our heart, lungs and other organs to work properly ^[1,2].

The national prevalence of vitamin A deficiency risk is below 20% in Indian children. But biochemical vitamin A deficiency is believed to be serious health problem ^[3].

Vitamin A deficiency is the leading cause of the preventable childhood blindness and increases the risk of death frame with common childhood illness such as Diarrhea. Nearly two in three children are in mud that was protected with the requisite of two annual high dose vitamin A supplements in 2021 ^[4,5].

Vitamin A deficiency is mostly seen in poorer people and in developing countries. About 2,50,000 – 5, 00,000 malnourished children in developing world go blind each year. Vitamin A deficiency can be combated with a variety of

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food and medicine based approaches including increased food diversity, food fortification and medical vitamin A supplements in every 6 months “[6,7]”.

Overall, it is essential to provide mothers accurate and reliable information about children health and nutrition especially about vitamin A through various channels such as healthcare providers and Community health workers. Education and awareness raising programme can also be helpful improving the knowledge and attitude of mothers of under five children towards the nutrition in WB “[10,11]”.

1.1 Problem Statement

A study to assess knowledge and attitude regarding vitamin A deficiency among mothers of under five children in selected paediatric OPD, WB.

Objectives

- To assess the knowledge regarding vitamin A deficiency among mothers of under five children.
- To assess the attitude regarding vitamin A deficiency among mothers of under five children.
- To find out the association of knowledge and attitude score of mothers of under five children regarding vitamin-A deficiency with selected demographic variables.

2 Material and methods

2.1 Research Approach

Quantitative research approach.

2.2 Research Design

Descriptive research design.

2.3 Setting

- Pilot Study: Healthworld Hospitals, Durgapur
- Final Study: Healthworld Hospitals, Durgapur

2.4 Population

All mothers of under five children who were attending paediatric OPD.

2.5 Sample

Mothers of under five children attending paediatric OPD of Health World Hospitals, WB.

2.6 Technique

Purposive sampling technique.

2.7 Sample size

- Pilot Study: 20 Mothers of under five children
- Final Study: 100 Mothers of under five children

2.8 Sampling Criteria

2.8.1 Inclusion Criteria

- Mothers of under five children.
- Those who were willing to participate.
- Those who were available at the time of data collection period.

2.8.2 Exclusion Criteria

- Those who were unwilling to participate.

- Those who were unable to communicate at the time of data collection.

Table 1 Data collection tools and techniques

Sl. No.	Tools	Variables to be measured	Techniques
1	Semi structured interview schedule	Demographic variables	Interviewing
2	Structured interview schedule	Knowledge level of mothers regarding Vitamin- A deficiency	Interviewing
3	Structured interview schedule	Attitude level of mothers regarding Vitamin- A deficiency	Interviewing

Table 2 Scoring and grading of Tool (knowledge)

Level of knowledge	Score	Score percentage (%)
Good	9–12	75–100
Average	5–8	41–66
Poor	0–4	0–33

Table 3 Scoring and grading of Tool (attitude)

Level of attitude	Score	Score percentage (%)
Good	8–10	80–100
Average	5–7	50–70
Poor	0–4	0–4

3 Result

3.1 Section I

Findings related to sample characteristics regarding vitamin A deficiency among mothers of under five children.

Table 4 Frequency and percentage distribution of mothers of under five children by children age, mothers' age, no. of children, educational qualification of mothers n = 100

Demographic Variables	Frequency	Percentage (%)
Age of the child (months)		
9–≤24	22	22
>24–≤36	23	23
>36	55	55
Age of the mothers (years)		
≤25	87	87
>25	13	13
No. of children		
1	63	63

2	34	34
≥3	3	3
Educational qualification of mothers		
Graduation	22	22
Secondary	28	28
Primary	50	50

Data presented in table 4 depicted that 55% (55) children belonged to the age group of children above 36 months, 23% (23) children belonged to the age group of 24–36 months and 22% (22) children belonged to the age group of 9–24 months. It also showed that 87% (87) mothers belonged to the age group below 25 years and 13% (13) mothers belonged to the age group of above 25 years.

It also showed that 63% (63) mothers had one (1) child, 34% (34) mothers had two (2) children and 3% (3) mothers had three (3) children.

It also depicted 28% (28) mothers passed Secondary education, 50% (50) mothers passed Primary education and 22% (22) mothers had achieved Graduation degree.

Table 5 Frequency and percentage distribution of mothers of under five children by habitant, distance of health center from home, visited the health center along with children and any missing dose of baby n = 100

Demographic Variables	Frequency	Percentage (%)
Habitant		
Urban	37	37
Rural	63	63
Distance of health center from home (km)		
1–3	78	78
4–6	14	14
7–12	8	8
Visited the health center along with children		
Yes	99	99
No	1	1
Any missing dose of baby		
Yes	6	6
No	94	94

Data presented in table 5 depicted that 63% (63) of mothers of under five children were residents of rural area and 37% (37) mothers of under five children were resident of urban area.

It also showed that homes of 78% (78) of mothers of under five children were at a distance of 1–3 Km from health center, homes of 14% (14) of mothers of under five children were at a distance of 4–6 Km from health center and homes of 8% (8) of mothers of under five children were at a distance of 7–12 Km from health center.

It also showed that 99% (99) of mothers of under five children visited the health center and 1% (1) had not visited health center.

It also depicted that 94% (94) of under five children had not missed any dose of Vitamin-A oil and 6% (6) of under five children had missed doses of Vitamin-A oil.

3.2 Section II

Findings related to knowledge score regarding vitamin A deficiency among mothers of under five children.

Table 6 Frequency and percentage distribution showing the knowledge level regarding vitamin-A deficiency

Level of knowledge	Score	Score percentage	Frequency	Percentage
Good	9–12	75–100	28	28
Average	5–8	41–66	55	55
Poor	0–4	0–33	17	17

Table 6 depicted that 55% (55) mothers of under five children were having average knowledge, 28% (28) mothers of under five children were having good knowledge, 17% (17) mothers of under five children were having poor knowledge regarding vitamin A deficiency. So, it can be interpreted that most of the mothers of under five children had average knowledge regarding vitamin A deficiency.

3.3 Section III

Findings related to attitude score regarding vitamin A deficiency among mothers of under five children.

Table 7 Frequency and percentage showing the attitude level of mothers of under five children regarding vitamin A deficiency

Level of attitude	Score	Score percentage	Frequency	Percentage
Good	8–10	80–100	60	60
Average	5–7	50–70	34	34
Poor	0–4	0–40	6	6

Table 7 depicts that 60% (60) mothers of under five children were having good attitude, 34% (34) mothers of under five children were having average attitude, 6% (6) mothers of under five children were having poor attitude related to vitamin A deficiency. So, it can be interpreted that most of the mothers of under five children have good attitude to vitamin A deficiency.

Table 8 Finding related to mean, median, standard deviation of knowledge score regarding Vitamin A deficiency among mothers of under five children

Variable	Range	Mean	Median	SD
Knowledge score	1–12	7.1	7.5	2.4

Range = Obtained range; Maximum score = 12; Minimum score = 1

Data presented in the table 8, depicted that the obtained range of knowledge score among mothers of under five children was 1–12 with mean knowledge score was 7.1 and median was 7.5.

It also depicted that SD of knowledge Score among mothers of under five children was 2.4, which can be interpreted that the obtained score were mildly dispersed.

Table 9 Finding related to mean, medians, stranded deviations of attitude score regarding Vitamin A deficiency among mothers of under five children

Variable	Range	Mean	Median	SD
Attitude score	1–10	7.5	7.1	1.8

Range = Obtained range ; Maximum score = 10; Minimum score = 1

Data presented in the table 9 depicted that the obtained range of attitude score regarding Vitamin A deficiency among mothers of under five children was 1–10, with mean attitude score 7.6 and median was 7.1. It depicted that SD regarding Vitamin A deficiency among mothers of under five children was 1.8, which can be interpreted that the obtained score was mildly dispersed.

3.4 Section IV

Findings related to association between knowledge score among mothers of under five children with selected demographic variables.

Table 10 Association between knowledge score among mothers of under five children with selected demographic variables n = 100

Sample Characteristics	Knowledge Score		Value of chi-square
	<Median	>Median	
Age of the mothers (Years)			
<25	25	35	5.21*
>25	26	14	
Number of Children			
1	35	28	0.41
≥2	23	14	
Educational qualification			
<Primary	24	26	4.01*
>Primary	33	17	
Habitant			
Urban	21	26	1.02
Rural	29	24	

$$\chi^2_{df(1)} = 3.841, p < 0.05, * \text{Significant}$$

Data presented in table 10 depicted those mothers of under five children who aged <25 years, 25 mothers had below median level of knowledge and 35 mothers had above median level of knowledge. Among the mothers aged >25 years, 26 mothers had below median level of knowledge, 14 mothers had above median level of knowledge. Chi-square computed between age of mothers and knowledge score was 5.21. The calculated chi-square value was more than the tabulated value at 0.05 level of significance. Thus, the computed chi-square value was statistically significant at 0.05 level of significance. Hence it could be inferred that age of the mothers of under five children was statistically had significant association with knowledge score.

It depicted that, among mothers of under five children with number of children <2, 35 mothers had below median level of knowledge, 28 mothers had above median level of knowledge. Among the mothers of under five children with the number of children ≥2, 23 mothers had below median level of knowledge, 14 mothers had above median level of knowledge. Chi-square computed between the number of children of under five mothers and knowledge score was 0.41. The calculated chi-square value was less than the tabulated value at 0.05 level of significance. Thus, the computed chi-square value was statistically not significant at 0.05 level of significance. Hence it can be inferred as number of under five children statistically did not have significant association with knowledge score.

It depicted that, among mothers of under five children with their educational qualification <primary, 24 mothers had below median level of knowledge, 26 mothers had above median level of knowledge. Among the mothers with their educational qualification >primary, 33 mothers had below median level of knowledge, 17 mothers had above median level of knowledge. Chi-square computed between the educational qualification of under five mothers and knowledge score was 4.01. The calculated chi-square value was more than the tabulated value at 0.05 level of significance. Thus, the computed chi-square value was statistically significant at 0.05 level of significance. Hence it could be inferred that education qualification of mothers of under five children had statistically significant association with knowledge score.

It also depicted that, among mothers of under five children with residing in urban area, 21 mothers had below median level of knowledge, 26 mothers had above median level of knowledge. Among the mothers residing in rural area, 29 mothers had below median level of knowledge, 24 mothers had above median level of knowledge. Chi-square computed between type of habitant of mothers of under five years children and knowledge score was 1.02. The calculated chi-square value was less than the tabulated value at 0.05 level of significance. Thus, the computed chi-square value was statistically not significant at 0.05 level of significance. Hence it can be inferred that number of children of mothers of under five years children was statistically not significantly associated with knowledge score.

Table 11 Association between knowledge score among mothers of under five children with selected demographic variables n = 100

Sample Characteristics	Knowledge Score		Value of chi-square
	< Median	>Median	
Distance of health center from home (Km)			
≤3	24	36	4.86*
>3	25	15	
Visited the health center along with children			
Yes	50	49	0.971
No	1	0	
Any missed dose			
Yes	6	0	6.12*
No	45	49	

$\chi^2_{df(1)} = 3.841, p < 0.05, *$ Significant

Data presented in table 11 depicted that among those mothers of under five children had a distance of health center from home <2 km, 24 mothers had below median level of knowledge, 36 mothers had above median level of knowledge. Among the mothers of under five children had a distance of health center from home >2 km, 25 mothers had below median level of knowledge, 15 mothers had above median level of knowledge. Chi-square computed between the distance of health center from home of mothers of under five children and knowledge score was 4.86. The calculated chi-square value was more than the tabulated value at 0.05 level of significance. Thus, the computed chi-square value was statistically significant at 0.05 level of significance. Hence it can be inferred that distance of health center from home of mothers of under five children was significantly associated statistically with knowledge score.

It depicted that, among mothers of under five children who had visited health center along with child, 50 mothers had below median level of knowledge, 49 mothers had above median level of knowledge. Among the mothers who had not visited health center along with children, 1 mother had below median level of knowledge, no mother had above median level of knowledge. Chi-square computed between the mothers of under five years children had visited the health center along with children and knowledge score was 0.971. The calculated chi-square value was less than the tabulated value at 0.05 level of significance. Thus, the computed chi-square value was statistically not significant at 0.05 level of significance. Hence it could be inferred that had the mothers of under five years children visited the health center along with children was not significantly associated statistically with knowledge score.

It also depicted that, among mothers of under five children if had missed any dose of vitamin-A oil, 6 mothers had below median level of knowledge, no mother had above median level of knowledge. Among the mothers of under five children if had missed any dose of vitamin-A oil, 45 mothers had below median level of knowledge, 49 mothers had above median level of knowledge. Chi-square computed between if the child had missed any dose of vitamin-A oil and knowledge score was 6.12. The calculated chi-square value was more than the tabulated value at 0.05 level of significance. Thus, the computed chi-square value was statistically significant at 0.05 level of significance. Hence it can be inferred that if the child had missed any dose of vitamin-A oil was significantly associated statistically with knowledge score.

Section IV: Findings related to association of attitude of the mothers of under five children with selected demographic variables.

Table 12 Association of attitude regarding Vitamin A deficiency among mothers of under five children with selected demographic variables n = 100

Sample Characteristics	Attitude Score		Value of chi- square
	<Median	>Median	
Age of the mothers			
≤25	30	8	0.04
>25	50	12	
Educational qualification			
≤Primary	23	27	1.23
>Primary	19	31	
Number of children			
1	20	28	2.19
≥2	14	38	
Habitant			
Urban	26	30	4.83*
Rural	11	33	

$\chi^2_{df(1)} = 3.841, p < 0.05, *$ Significant

Data presented in the table 12 depicted that, among the mothers of under five children with their age <25 years, 30 mothers had below median level of attitude, 8 mothers of under five children had above median level of attitude. Among the mothers with their age >25 years, 50 mothers had below median level of attitude, 12 mothers had above median level of attitude. Chi-square computed between age of mothers of under five children and attitude score was 0.04. The calculated Chi-square value was less than the tabulated value at 0.05 level of significance. Thus, the computed Chi-square value was statistically not significant at 0.05 level of significance. Hence, it can be inferred as age of mothers of under five children had not statistically significant association with attitude score.

It depicted that, mothers of under five children with their educational qualification primary, 23 mothers had below median level of attitude, 27 mothers of under five children had above median level of attitude. Among the mothers with the educational qualification >primary, 19 mothers had below median level of attitude, 31 mothers had above median level of attitude. Chi-square computed between educational qualification of mothers of under five children and attitude score was 1.23. The calculated Chi-square value was more than the tabulated value at 0.05 level of significance. Thus, the computed Chi-square value is statistically significant at 0.05 level of significance. Hence, it can be inferred as educational qualification of mothers of under five children was significantly associated statistically with attitude score.

It depicted that, among mothers of under five children with their number of children <2, 20 mothers had below median level of attitude, 28 mothers had above median level of attitude. Among the mothers with the number of children ≥2, 14 mothers had below median level of attitude, 38 mothers had below median level of attitude. Chi-square computed between number of children of mothers of under five children and attitude score was 2.19. The calculated Chi-square value was less than the tabulated value at 0.05 level of significance. Thus, the computed Chi-square value is not statistically significant at 0.05 level of significance. Hence, it can be inferred as number of children mothers of under five children was not statistically associated significantly with attitude score.

It also depicted that, among mothers of under five children residing in urban area, 26 mothers had below median level of attitude, 30 mothers had above median level of attitude. Among the mothers residing in rural area, 11 mothers had below median level of attitude, 33 mothers had above median level of attitude. Chi-square computed between type of habitant of mothers of under five children and attitude score was 4.83. The calculated Chi-square value was more than the tabulated value at 0.05 level of significance. Thus, the computed Chi-square value was statistically significant at 0.05 level of significance. Hence, it can be inferred as type of habitant of mothers of under five children was statistically associated significantly with attitude score.

Table 13 Association of attitude regarding vitamin A deficiency among mothers of under five children with selected demographic variables n = 100

Sample Characteristics	Knowledge Score		Value of chi-square
	< Median	>Median	
Distance of health center from home (Km)			
≤3	37	41	4.58*
>3	9	13	
Visited the health center along with children			
Yes	24	36	4.86*
No	25	15	
Any missed dose			
Yes	25	35	3
No	24	16	

$\chi^2_{df(1)} = 3.841, p < 0.05, *$ Significant

Data presented in the table 13 depicted that, among mothers of under five children with distance of health center from home ≤ 2 km, 31 mothers had below median level of attitude 29 mothers had above median level of attitude. Among the mothers with distance of health center from home > 2 km, 12 mothers had below median level of attitude, 28 mothers had above median level of attitude. Chi-square computed between distance of health center from home of mothers of under five children and attitude score was 4.58. The calculated Chi-square value was more than tabulated value at 0.05 level of significance. Thus, computed Chi-square value was statistically significant at 0.05 level of significance. Hence it can be inferred as distance of health center from home of mothers of under five children had statistically significant association with attitude score.

It depicted that, among mothers of under five children had visited the health center along with child, 24 mothers had below median level of attitude, 36 mothers had above median level of attitude. Among the mothers of under 5 years children had not visited health centre with their children, 25 mothers had below median level of attitude, 15 mothers had above median level of attitude. Chi-square computed between if mothers had visited the health center along with children and attitude score was 4.86. The calculated Chi-square value was more than the tabulated value at 0.05 level of significance. Thus, the computed Chi-square value was statistically significant at 0.05 level of significance. Hence, it can be inferred as if mothers had visited the health center along with children was significantly associated statistically with attitude score.

It also depicted that, among mothers of under five children did not miss any dose of vitamin-A oil, 25 mothers had below median level of attitude, 35 mothers had above median level of attitude. Among the mothers of the under five years children who had missed doses of vitamin-A oil, 24 mothers had below median level of attitude, 16 mothers had above median level of attitude. Chi-square computed between if the child had missed any dose of vitamin-A oil and attitude score was 3. The calculated Chi-square value was less than the tabulated value at 0.05 level of significance. Thus, the computed Chi-square value was statistically not significant at 0.05 level of significance. Hence, it can be inferred as if the child had missed any dose of vitamin-A oil had not statistically significant association with attitude score.

3.5 Hypothesis

- **H₁:** There is a significant association between knowledge and selected demographic variables like age of the mothers, educational qualification, distance of health center from home and if the child had missed any dose as evidenced by semi structured interview schedule at 0.05 level of significance.
- **H₂:** There is a significant association between attitude and selected demographic variables like educational qualification of mothers, habitant, distance of the health centre from home and visited the health centre along with child as evidenced by semi structured interview schedule at 0.05 level of significance.

4 Discussion

Discussion comparing the findings of present study with findings of other related studies is given in this section.

4.1 Discussion related to sample characteristics of mothers of under five children

In the present study most of the mothers (87%) belonged to age group of <25 years, most of the of the mothers (63%) had 1 child, most of the mothers educational qualification (84%) was primary, most of the mothers were habitant (63%) of rural area, the distance of health centre from home most of the mothers (78%) was 1–3 km, most of the mothers had visited the health centre along with child (99%), most of the baby (94%) had not missed any dose.

The findings of the present study are supported by other studies conducted by:

Shanthi S (2017) to assess knowledge and attitude and practice among mothers of under five children regarding vitamin A intake in the outpatient department. The result shows that 32% of respondents never attained school, 93% were house wife and 70% belonged to low socio-economic status. Mean age of mother was 29 years, 65% mothers have poor knowledge about Vitamin A deficiency “[11]”.

Berde AS, Bester P (2019) to assess the knowledge of mothers of under five years children regarding vitamin-A deficiency in selected areas of west Saidapet. The result shows that 38.9% women were illiterate, 80% were non-working, 32.6% know about vitamin A rich food and 18.9% were aware about vitamin A prophylaxis programme “[19]”.

4.2 Discussion related to assessment of knowledge score regarding vitamin-A deficiency among mothers of under five children

- Most of the mothers (55%) were having average knowledge, 28% mothers were having good knowledge and 17% mothers were having poor knowledge.
- Knowledge score of mothers of under five children was 1–12 with mean knowledge score 7.1 and median 7.5. So, it can be interpreted that the obtained knowledge score was almost normally distributed with mild skewness. SD of knowledge score of mothers was 2.4, which can be interpreted that the obtained scores was mildly dispersed.

The findings of the present study are quite similar with studies conducted by:

Daphne Chen Nee Wu et al. Public health Nutr (2019 Mar) to assess knowledge among mothers of under five children on consumption of adequately fortified oil were significantly higher in the intervention where the health benefits of vitamin A improved significantly form about 33-45% “[20]”.

Souza G et al. J Pediatia (Rioj) (2012) to assess the knowledge among mothers of under five children. The average vitamin-A concentration observe in mature milk was 1.761 Mol/L and prevalence of vitamin A deficiency was observed in 20.5% mothers. Only 38.9% of lactating women presented enough vitamin A concentration in milk for the infants liver resources (2.3 mol/l) “[21]”.

4.3 Discussion related to assess attitude score regarding vitamin-A deficiency among mothers of under five children

- Most of the mothers (60%) were having good attitude, (34%) mothers were having average attitude and (6%) mothers were having poor attitude.
- Attitude score of mothers was 1–10 with mean attitude score 7.6 and median 7.1. So, it can be interpreted that the obtained attitude score was almost normally distributed with mild Skewness. It also depicted that SD of attitude score of mothers was 1.8, which can be interpreted that the obtained score was mildly dispersed.

The findings of the present study are quite similar with studies conducted by:

Khaliq R, Rizvi F, Afzal M, Rahman MU (2007) assessed knowledge regarding vitamin A deficiency among mothers of under five children. The result of the study showed that out of the total sample, 32% mothers had positive attitude, 68% had negative attitude towards vitamin A intake “[24]”.

Malek LJA, Benkhaial FS (2018) assessed attitude towards vitamin A deficiency among the mothers of under five children. The result of the study showed that 76% (1057) of the parents have positive attitude towards advising others

to give their children vitamin A supplementation. While 88% of the interviewed parents (1224) had positive attitude of regarding vitamin-A to their children in the next campaign “[37]”.

5 Conclusion

The findings of the present study showed that most of the mothers of under five children participated in the study were having average score which indicated average knowledge regarding the Vitamin A deficiency, but most of them have good attitude. So, health professional need to provide adequate knowledge to the mothers of under five children to prevent Vitamin A deficiency disorder.

Compliance with ethical standards

Statement of ethical approval

Ethical approval was taken from Ethics Committee of Healthworld Hospitals where the study was conducted.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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