

Evaluation of Knowledge Level of Under Five Children's Mother Regarding Vitamin A Deficiency

Daneshwari Hiremath¹, Deelip S Natekar², Mahalaxmi C³, Kalakappa N Huli³, Meenakshi M^{3*}, Manojkumar CH³, Roopa J³, Apoorva A³

¹Associate Professor and HOD, Department of Child Health Nursing, Shri B.V.V.S. Sajjalashree Institute of Nursing Sciences, Navangar, Bagalkot, Karnataka, India

²Principal, Department of Community Health Nursing, Shri B.V.V.S. Sajjalashree Institute of Nursing Sciences, Navangar, Bagalkot, Karnataka, India

³Student, Department of Child Health Nursing, Shri B.V.V.S. Sajjalashree Institute of Nursing Sciences, Navangar, Bagalkot, Karnataka, India

***Address for Correspondence:** Meenakshi M, Student, Department of Child Health Nursing, Shri B. V. V. S. Sajjalashree Institute of Nursing Sciences, Navanagar, Bagalkot- 587102, Karnataka, India

E-mail: manjulasc9686@gmail.com

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ABSTRACT

Background: Early childhood is regarded as one of the most essential and valuable periods before attaining adulthood. The first five years of life are the most important for a child's development as many biological, psychological, and emotional changes take place during this time. Children need enough nutrients during the developmental stage to support growth and immunity. They experience certain deficiency disorders if their needs are not fulfilled. Therefore, the current study was undertaken to establish a theoretical basis for the assessment of knowledge of mothers of under five years regarding vitamin A deficiency.

Methods: The study utilized a descriptive survey design and a simple random technique was used to obtain 60 samples from Anganawadi, urban area of Bagalkot, Karnataka, India. Data were collected using a semi-structured questionnaire to assess the level of knowledge among mothers of under-five children regarding vitamin A deficiency. The collected data were analysed by using descriptive and inferential statistics.

Results: Among the 60 samples studied, the knowledge of under-five children's mothers was very poor for 10% of mothers, poor for 66.66% of mothers, and good knowledge was reported for 23.33% mothers. The results of the present study showed a non-significant association between knowledge levels of mothers of under-five children and age group ($p < 1$), religion ($p = 0$), education ($p < 0.139$), number of children ($p < 0.262$), income ($p < 0.258$), occupation ($p < 0.686$), and type of family ($p < 0.022$).

Conclusion: The study concluded that the knowledge of mothers of under-five children was very poor for 10% of mothers and poor for 66.66% of mothers.

Key-words: Children, Childhood blindness, Maternal Awareness, Vitamin A deficiency, Knowledge, Mothers

INTRODUCTION

Vitamin A is critical for the optical system's normal functioning. It is also required to maintain cell function for growth, production of red blood cells, epithelial cells,

reproduction, and immunity. Vitamin A deficiency is an essential factor for childhood blindness and a significant contributing factor to mortality and morbidity among under-five children ^[1].

It is mainly seen in poorer people and under developing countries. Two key factors leading to vitamin A deficiency in children are: 1) Their mothers are deficient in vitamin A, which causes the production of breast milk low in vitamin A; and 2) Children are weaned onto Vitamin A- deficient diet ^[2]. Their prolonged illness during childhood, which is exacerbated by anorexia,

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malabsorption, and accelerated catabolism, is a third factor that contributes to their low vitamin A level [3,4].

A mother must know the causes, importance, sources, and deficiency of vitamins. According to our study, 10% of mothers of under-five children have very poor knowledge, 66.66% of mothers have poor knowledge, and 23.33% mothers have good knowledge regarding vitamin A deficiency. Vitamin A deficiency is a systemic condition that mostly affects the eyes. It arises from diets not providing enough vitamin A to support growth and development, psychological functions, and periods of added stress due to illness [5]. Vitamin A is found in foods such as milk, red and orange fruits, liver, red palm oil, eggs, and green leafy vegetables. Although these sources provide varying amounts of vitamin A to the body [6].

MATERIALS AND METHODS

A descriptive survey design was utilized for the present study. A simple random technique obtained 60 samples from the Anganawadi urban area of Bagalkot, Karnataka, India. This study was conducted in selected urban areas of Bagalkot. The study setting was selected according to the availability of mothers' and investigators' convenience. Data were collected from mothers of under-five children using a semi-structured questionnaire and their knowledge regarding vitamin A deficiency was evaluated. Descriptive and inferential statistics were used to analyse the collected data.

Research Design- A descriptive survey design was used to assess data from under-five children's mothers about vitamin A deficiency. The dependent variable was used to determine the level of knowledge about Vitamin A deficiency in mothers of children under five years old. In contrast, the independent variable was used to assess the mothers' understanding of preventing vitamin A deficiency in children under five. Various sociodemographic variables of mothers of children of 0-5 years of age, including mother's age, educational status, religion, monthly income, total number of children, occupation, and type of family, were studied. The present study sample size was 60 mothers of children under five who resided in urban areas of Bagalkot, Karnataka, India. A convenient sampling technique selected the samples. The mothers were chosen conveniently according to the duration of study. Those

subjects who fulfilled the inclusion criteria were selected using a simple random technique. A semi-structured questionnaire was utilised to collect the data in the present study.

A pilot study was carried out at the end of the planning phase to explore and test the research elements. A pilot study was conducted in some selected urban area of Bagalkot from 28-6-2023 to 29-6-2023 to determine the study design's feasibility and practicability. Six mothers were chosen randomly using self-administered structured closed-ended knowledge and practice questionnaires.

Statistical Analysis- The obtained data were assessed using inferential and descriptive statistics. Sociodemographic data were evaluated by using percentage and frequency distribution. Mean and standard deviation were used to analyse the scores of under-five children's mothers. The chi-square test was used to assess the relationship between the knowledge of under-five children's mothers and the selected sociodemographic variables.

Ethical Consideration- Formal permission was taken from the Principal, BVVS Sajjalashree Institute of Nursing Sciences, Bagalkot, Karnataka, India. An ethical clearance certificate was obtained and enclosed from the ethical committee of B.V.V.S Sajjalashree Institute of Nursing Sciences, Bagalkot, Karnataka, India. Researchers explained the purpose of the study to the participants, and written informed consent was obtained from the mothers of the children under five participating in the study. Anonymity and confidentiality regarding the data and identity of mothers were maintained.

RESULTS

The results of the present study show that among 60 samples, the knowledge level of under-five children's mothers was very poor for 10% mothers, poor for 66.66% mothers, and good for 23.33% mothers. The frequency and percentage distribution of sociodemographic characteristics of mothers of under-five children is shown in Table 1. The majority (53.33%) of mothers were 24-29 years old, Hindu (93.33%), housewives (96.66%), living in a joint family (51.66%), had 2 children (55%), with a monthly income of Rs.5000-10000 (83.33%).

Table 1: Percentage distribution and frequency of sociodemographic variables

Sociodemographic variables	Frequency	Percentage (%)
Age of mother (in years)		
18-23	9	15
24-29	32	53.33
30-35	17	28.33
36 and above	2	3.33
Religion of mother		
Hindu	56	93.33
Muslim	4	6.66
Christian	0	0
Other	0	0
Educational status of the mother		
Primary	24	40
PUC	23	38.33
Degree	9	15
No formal education	4	6.66
Total number of children		
1 child	12	20
2 children	33	55
3 children	13	21.66
More than 3 children	2	3.33
Family monthly income (in Rupees)		
5000–10000	50	83.33
10000–15000	9	15
15000–20000	1	1.66
20000 and above	0	0
Occupation of mother		
Housewife	58	96.66
Business	1	1.66
Government servant	0	0
Private employees	1	1.66
Type of family		
Joint	31	51.66
Nuclear	29	48.33

As shown in Table 2, the calculated mean was 10.466, the standard error was 0.0513, and the standard difference was 0.394; hence, the knowledge of under-five children's mothers was insignificant. Percentage-

wise distribution scale of the level of knowledge of children's mothers is given in Table 3. Out of 60 samples, six (10%) have very poor knowledge, 40 (66.66%) have poor knowledge, and 14 (23.33%) have good knowledge.

Table 2: Knowledge about vitamin-A deficiency in mothers of under-five children

Test	Mean	Standard error	Standard difference	Table value
	10.466	0.0513	0.394	3.84

Table 3: Scale of the level of knowledge of under-five children's mothers

Range of score	Knowledge level	Frequency	Percentage (%)
0-6	Very poor	6	10
7-12	Poor	40	66.66
13-18	Good	14	23.33
19-24	Very good	0	0
25-30	Excellent	0	0

There was no significant association between the age group of under-five children's mothers and their knowledge about vitamin A deficiency because the calculated value (1) was less than the table value (3.846). Non-significant association was established between the religion of all mothers of under-five children and their knowledge level because the study value (0) was less than the table value (3.846). Similarly, a non-significant

relationship was observed between the educational status of mothers (study value=0.1395), number of children (study value=0.2622), family income (study value=0.2586), occupation of mothers (study value=0), type of family (study value=0.022) and their knowledge because study value for each variable was less than table value (3.846) (Table 4).

Table 4: Relationship between knowledge of mothers and the selected sociodemographic variables

Socio-demographic variables	Chi-square calculated value	Association
Age of mother	1	NS
Religion	0	NS
Educational status	0.1395	NS
Number of children	0.2622	NS
Income	0.2586	NS
Occupation	0	NS
Type of family	0.022	NS

Chi-Square table value=3.846; Degree of freedom (DF)=1; NS: non-significant.

DISCUSSION

The present study evaluated the knowledge levels of under-five children's mothers regarding vitamin A deficiency in selected urban areas of Bagalkot, Karnataka, India. It was observed that many mothers (53.33%) belong to the age group of 24-29 years, while only two (3.33%) mothers belong to the 36 and above age group. In comparison with a similar study, it was found that many mothers (40%) belong to the 21-25 years age group and only 8 (13.3%) mothers belong to the below 20 years age group^[7].

Most mothers (93.33%) in the present study were Hindu by religion, while no one (0%) was Christian. Comparable results were obtained by Castro *et al.*, who found 6% of mothers from the Hindu religion and 18% from the Muslim community^[8]. The educational status of most mothers in the present study was primary (40%) and only 6.66% mothers obtained nonformal education. On comparing the data to previous studies, Mesh *et al.* found that 22 (36.70%) mothers belonged to primary education and 8 (13.30%) mothers were postgraduate^[9]. Many mothers (55%) have 2 children, while only 2

(3.33%) have more than 3 children. Similar results were reported by Miglioli *et al.*; they found that 27(45%) mothers have 2 children, while 7(17.70%) mothers have more than 3 children^[10].

The monthly family income of most mothers (83.33%) in the present study was Rs.5000-10000 while none of the mother's family income was more than Rs.20000 and above. Similar results were reported by a previous study where 21(35%) mothers' family income was below Rs.20000 and 8(13.30%) mothers had a family monthly income of more than Rs.20000^[11]. Many mothers were housewives, 58(96.66%) and none were government employees (0%). Haslow *et al.*^[12] in a similar study determined that 38(63.30%) mothers were housewives and 7(12.40%) were private employees. In the present study, most mothers (51.66%) belong to a joint family, and 29(48.33%) belong to nuclear research. These findings were contrary to those of a study by Arlappa^[13] who found that 5(8%) of mothers belong to a joint family and 36 (92%) of mothers belong to a nuclear family. Few studies have also assessed vitamin A dietary intake among children under five years old to evaluate vitamin A supplementation coverage. One such study by Yadav *et al.* conducted among children of 6-60 months in Anganwadis of Chandigarh revealed that only 20% children took food and vegetables rich in vitamin A during the past 24 hours. We did not consider this dimension in our study. However, such a targeted approach is required to update the current nutrition programme^[14].

Out of the total samples studied, 10% have very poor knowledge, 66.66% have poor knowledge, and 23.33% have good knowledge. Another study by Yamunambigai *et al.* revealed that out of 50 mothers of under-five children, the majority (72%) had insufficient knowledge. In contrast, 16% of them had fair knowledge and 12% of mothers had adequate knowledge regarding vitamin A deficiency^[15]. Few studies reported similar findings, where most mothers with under-five children had an average poor knowledge of vitamin A deficiency^[16,17].

Policy changes are currently required in India regarding the national programme to choose targeted distribution over universal distribution. In addition to health measures, the National Institute for Transforming India suggests bolstering the national programme for control of vitamin A deficiency through six months of vitamin A supplementing in addition to medical intervention^[18].

Apart from short-term emergency measures of administration of vitamin A to the vulnerable group, a long-term solution through home gardening and nutrition education programmes can be initiated, as opined by DeMaeyer^[19].

CONCLUSIONS

Children are a vulnerable segment in terms of vitamin A deficiency. The present study concluded that mothers of children under five had inadequate knowledge of vitamin A deficiency. Also, there was a non-significant relationship between the studied sociodemographic variables and the level of knowledge of mothers of children under five.

Under-five children are more prone to vitamin A deficiency diseases such as blindness, Crohn's disease, xerophthalmia, and visual impairment. Giving proper knowledge and education to the mothers about the importance of vitamin A will reduce the risk of vitamin A deficiency in under-five children. The present study will be useful to build awareness among mothers regarding vitamin A deficiency.

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CONTRIBUTION OF AUTHORS

Research concept- Dr Dileep Natekar, Dr. Daneshwari Hiremath

Research design- Dr. Daneshwari Hiremath

Supervision- Dr. Daneshwari Hiremath

Materials- All Researchers

Data collection- All Researchers

Data analysis and interpretation- All Researchers

Literature search- All Researchers

Writing article- All researchers

Critical review- Dr. Daneshwari Hiremath

Article editing- Dr. Daneshwari Hiremath

Final approval- Dr. Daneshwari Hiremath

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