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A Study To Assess The Knowledge and Practice on Prevention of Vitamin A Deficiency Among Mothers of Under Five Children in Selected Rural Areas, Shillong, Meghalaya

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Abstract

Vitamin A Deficiency is a major nutritional problem among under five children in developing and under developed countries. In the state of Meghalaya, according to a study conducted in 2015, there is a high prevalence of Vitamin A Deficiency among children and the underlying social factors. The study revealed that the prevalence of clinical Vitamin A Deficiency in children 0-5 years was 2.49% and the prevalence in 5-15 years children was 5.90%. Another study conducted in Phek District, Nagaland revealed that the overall prevalence of Vitamin A Deficiency was 37% among pre-school students and 24%-32% among adult women. It was concluded that Vitamin A Deficiency is an important public health problem among tribal population in spite of the rich biodiversity.

The present study was conducted to assess the knowledge and practice on prevention of Vitamin A Deficiency among mothers of under five children. A quantitative non-experimental research design was carried out in selected rural areas of East Khasi Hills, Meghalaya. A total of 124 mothers of under five children were selected by using simple random sampling technique. Assessment of pre-existing level of knowledge and practice was done by structured questionnaire.

Out of 124 respondents 67 (54.03%) had average knowledge, 35 (28.22%) had good knowledge and 22 (17.74%) had poor knowledge and 99 (79.83%) had good practice, 24 (19.35%) had average practice and 01 (0.80%) had poor practice regarding prevention of Vitamin A Deficiency. There was an association between knowledge on prevention of Vitamin A Deficiency with

their selected demographic variables. According to the Karl Pearson's formula, r was found to be 0.1227 and there is weaker positive correlation between knowledge and practice on prevention of Vitamin A deficiency of the participants.

The study concluded that majority of the participants 54.03% (67) have average knowledge regarding prevention of Vitamin A Deficiency and79.83% (99) have good practice.

Keywords: Knowledge, Mothers, Practice, Vitamin A Deficiency

Introduction

Background of the Study

Vitamin A Deficiency is a major nutritional problem among under five children in developing and under developed countries. Vitamin A Deficiency is a systemic disease with major effect on eyes, this deficiency is usually associated with malnutrition, chronic diarrhea, malabsorption syndrome, hepatic insufficiency and pre-maturity. Vitamin A Deficiency affects the eyes. It causes xerophthalmia which is characterized by series of clinical signs which includes night blindness, conjunctival xerosis, blind spots, corneal ulcerations[1]. Vitamin A Deficiency is the second most important factor for global blindness[2]. Therefore, identification of Vitamin A Deficiency is crucial.

According to United Nations International Children's Emergency Fund (UNICEF), Vitamin A Deficiency is major concern especially for the children living in developing countries. According to UNICEF around one third of the children are not receiving the supplementation of Vitamin A they need.

According to The American Journal of Clinical Nutrition, Biochemical Vitamin A Deficiency is believed to be a serious public-health problem(low-serum retinol prevalence>20%) in Indian children, justifying universal high-dose vitamin A supplementation[4].

According to National Institute of Nutrition, the proportion of children with sub-clinical Vitamin A Deficiency was significantly higher among 3–5 year children (63.1%) compared to 1-3 years (59.6%)[3].

According to International Journal of Nursing Education and Research, majority of mothers 37(61.67%) had average knowledge and 23(38.33%) had good knowledge regarding Vitamin A Deficiency disorders[5].

According to the International Journal for Multidisciplinary Research (IJFMR), the prevalence of Vitamin A Deficiency was higher among the children belonging to lower socio-economic class as compared to those belonging to upper and middle socio-economic class[6].

Need of the study

Vitamin A Deficiency is the leading cause of preventable childhood blindness and increases the risk of death from common childhood illnesses such as diarrhoea. Periodic, high-dose vitamin A supplementation is a proven, low-cost intervention which has been shown to reduce all-cause mortality by 12 to 24 per cent, and is therefore an important programme in support of efforts to reduce child mortality[7].

Children suffering from Vitamin A Deficiency are more likely to be sick and severe Vitamin A Deficiency can cause blindness in children. Severe Vitamin A deficiencies increase the chances of children dying. The primary cause is insufficient intake of Vitamin A rich foods and inappropriate breastfeeding either due to poverty or inadequate knowledge about nutrition. Infections, such as measles and diarrhoea can precipitate clinical Vitamin A Deficiency in children[8].

While Vitamin A Deficiency is rare in well-resourced countries, there is a growing trend of Vitamin A

deficiency in at-risk pediatric populations. Early diagnosis is critically important to prevent its associated morbidity and mortality. Even in well-resourced countries, Vitamin A deficiency should remain on the differential in patients with risk factors who present with relevant signs and symptoms. Early diagnosis and appropriate involvement of a multidisciplinary care team can help prevent morbidity and mortality associated with Vitamin A deficiency[9].

Vitamin A Deficiency is a major public health problem among young children and, to a lesser extent, pregnant and breastfeeding women, in many low-income and some middle-income countries. As well as being an important cause of childhood blindness through xeropthalmia, it is a major underlying cause of mortality and severe morbidity in children[10].

Vitamin A deficiency is the leading cause of childhood blindness and a major nutritional determinant of severe infection and mortality among children in low-income countries. Although the health consequences of vitamin A deficiency are not well described beyond early childhood, data from several intervention trials indicate that Vitamin A Deficiency in women of reproductive age may increase morbidity and mortality during pregnancy and the early postpartum period.

According to UNICEF, around one third of the children are not receiving the supplementation of Vitamin A they need. According to WHO guideline, approximately 190 million pre-school children are affected by Vitamin A Deficiency, majority of them belongs to Africa and South-east Asia region of WHO. World bank stated that the vitamin A supplementation is a cost-effective measure to improve child survival in pre-school children. Around 650,00 early childhood deaths from diarrhoea, measles, malaria and other infections each year be contributed to Vitamin A deficiency as an underlying cause.[2] The risk of death among children given small weekly dose of Vitamin A was less than half than in control group in a randomized controlled study conducted in south India. Vitamin A deficiency is associated with various poor social, economic and ecological conditions. Deprived children who are not able to get proper diet are usually exposed to Vitamin A deficiency at a very early age. Such deficiency will also reflect in the later stages of life for example during the reproductive age, a female who has earlier suffered from Vitamin A deficiency and stays chronically deficient will have its impact on her various life events.

Operational Definitions

Knowledge- Knowledge means what mothers of under five children knows about Vitamin-A deficiency and its prevention.

Mothers of under 5- It refers to those mothers who are having children between 0-5 years of age.

Practice- Practice means whether children of under five are getting Vitamin A rich diet and Vitamin A prophylaxis to prevent Vitamin A Deficiency.

Rural- It refers to a geographic area that is located outside cities or towns.

Vitamin A Deficiency- Vitamin A Deficiency means not having enough amount of Vitamin A in the body

Objectives of the study

Primary Objectives

To assess the level of knowledge and practice on prevention of Vitamin A Deficiency among mothers of under five children.

Secondary Objectives

To find the association of knowledge on prevention of Vitamin A Deficiency with their selected demographic variables.

To find the association between knowledge and practice on prevention of Vitamin A Deficiency.

Research Hypothesis

H1: The mother(s) may have less knowledge regarding Vitamin A Deficiency.

H2: There may be less association of knowledge and practice with their selected demographic variables.

Methodology

Research approach

In this study the quantitative research approach was considered appropriate in order to assess the knowledge and practice on prevention of Vitamin A deficiency among mothers of under five children in selected rural areas, East Khasi Hills, Meghalaya.

Variables in the study

Variables are qualities, quantities, properties, or characteristics of people, things, or situations that change or vary and can have more than one value. In this study, the variables are knowledge and practice on prevention of Vitamin A deficiency among mothers of under five children.

Setting of the study

The present study was conducted in rural areas, East Khasi Hills, Meghalaya. The selected rural areas for the study was Mawlai, Mawroh. The criteria for selecting this study setting were based upon the availability of study participants, feasibility of conducting the study, convenience of access for the researchers and approval from the various personnel of concerns.

Ethical considerations

The study was conducted after the review from the board of NEIGRIHMS Scientific Advisory Committee (NSAC) and then permission was obtained from the Institution Ethics Committee (IEC), NEIGRIHMS. A written permission was taken from the Director of Health Services, Medical Officer and Public Health Nurse, Mawlai-Mawroh, Headman of Mawlai-Mawroh, Shillong, Meghalaya. Written consent was obtained the participants after giving a detailed written informed consent document which contains all the information related to the study and the study procedures. The participants were informed that they can withdraw from the study at any point of time. For confidentiality and anonymity of the participants, a code number was assigned to each participant instead of the participant's name.

Study population

In this study, the population comprises of all the mothers of under five children residing in rural areas, East Khasi Hills, Meghalaya.

Sampling technique: Simple random sampling technique.

Sampling design: In the present study, samples are 124 mothers residing in rural areas of East Khasi Hills, Meghalaya.

Criteria for sample selection

Inclusion criteria

- Mothers who are having children below five years.
- Mothers who are residing in rural areas, East Khasi Hills, Meghalaya.

Exclusion criteria

- Mothers of under five children who are not willing to participate.
- Mothers of under five children who are below 18 years of age.

Data collection procedure

Prior to data collection, approval was taken from the Principal of College of Nursing, NEIGRIHMS and permission was obtained from the Medical Officer, Public Health Nurse and Headman of Mawlai-Mawroh. Data was collected from Mawroh, Meghalaya from 25th March 2024 to 6th 2024 which was a period of 2 weeks, 124 participants who met the inclusion criteria were selected. Prior to the data collection, a written consent

from the participants was taken on the day of data collection.

Description of data collection tools and techniques

The tool used for the study consists of the following:

Section 1: Questionnaire to collect the socio-demographic data of participants like Age, Educational qualification, Occupation, Monthly income of family, Religion, Number of children under five, Type of family (7 Questions were included)

Section 2: It includes questionnaire to assess the knowledge on prevention of Vitamin A deficiency. This section consists of 16 questions, correct response was scored 1 (one) point and wrong response or an unanswered question was scored 0 (zero).

Section 3: It includes questionnaire to assess the practice on prevention of Vitamin A deficiency. The section consists of 10 questions, correct response was scored 1 (one) point and wrong response or an unanswered question was scored 0(zero)

Interpretation of scores

Knowledge score was categorized into three categories:

Good knowledge: (12-16)

Average knowledge: (8-11)

Poor knowledge: (0-7)

Practice score was categorized into three categories:

Good Practice: (8-10)

Fair Practice: (5-7)

Poor Practice: (0-4)

Analysis and interpretation

Analysis and interpretation of the data was done by using both descriptive and inferential statistics based on the objectives of the study.

Organization of the findings

The data was analyzed, interpreted and presented under the following headings:

Section-1: Knowledge on prevention of Vitamin-A deficiency among mothers of under five children.

Section 2: Findings related to association between knowledge on prevention of Vitamin A deficiency with their selected demographic variables

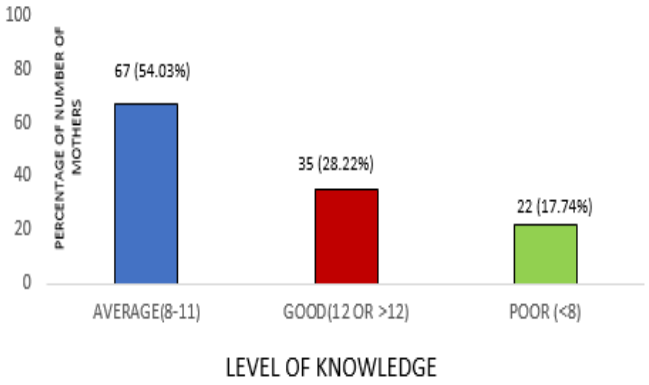
Section 3: Findings related to association between knowledge and practice on prevention on vitamin A deficiency.

Section 1: Knowledge on prevention of Vitamin-A deficiency among mothers of under five children.

Table 1: Frequency and percentage distribution of the participants according to the socio demographic variables. N=124

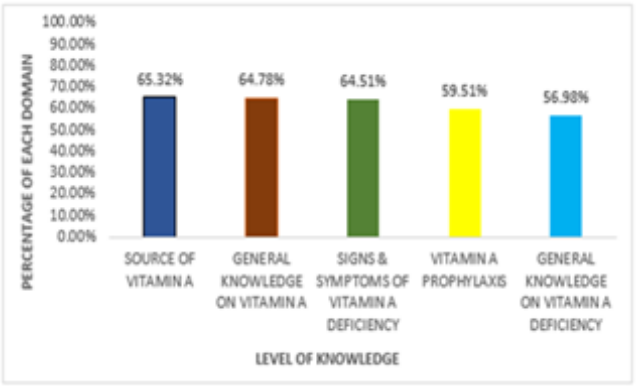
VARIABLES	FREQUENCY(f)	PERCENTAGE (%)
AGE IN YEARS		
18-28	38	30.64%
29-39	72	58.06%
40-50	14	11.29%
EDUCATIONAL QUALIFICATION		
Uneducated	7	5.64%
Primary	13	10.48%
Secondary	59	47.58%
Higher Secondary	15	12.09%
Graduate and above	30	24.19%
OCCUPATION		
Home-Maker	76	61.29%
Farmer/Labour	23	18.54%
Service	17	13.70%
Business	8	6.45%
MONTHLY INCOME OF THE FAMILY (in rupees)		
<10,000	28	22.58%
10,000-20,000	64	51.61%
21,000-31,000	11	8.87%
>31,000	21	16.93%
RELIGION		
Christian	124	100%
NO. OF CHILDREN UNDER FIVE YEARS		
Upto 2 children	119	95.96%
More than 2 children	5	4.03%
TYPES OF FAMILY		
Nuclear	94	75.80%
Joint	30	24.19%

Figure 1: Frequency and percentage distribution of knowledge score obtained by mothers of under five children on prevention of Vitamin A deficiency.



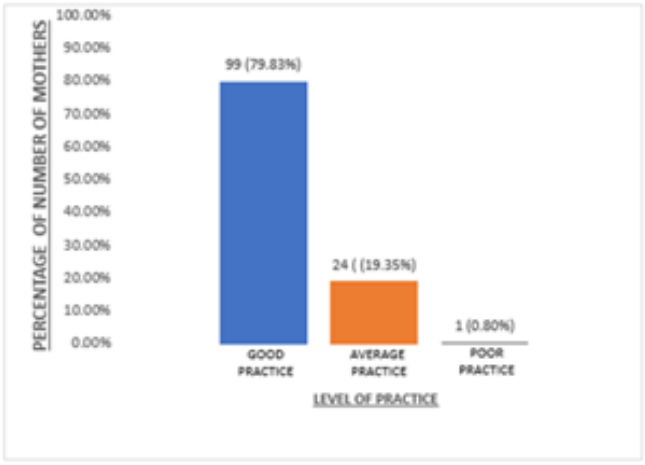
The above figure reveals that out of 124 participants majority of them i.e. 67(54.03%) have average knowledge, 35(28.22%) have good knowledge and 22(17.74%) have poor knowledge regarding prevention of Vitamin A deficiency.

Figure 2: Knowledge of mothers in each domain of Vitamin A.



The above figure reveals that the level of knowledge of the participants regarding general knowledge on Vitamin A is 64.78%%, sources of Vitamin A is 65.32%, signs and symptoms of Vitamin A deficiency is 64.51%, general knowledge on Vitamin A deficiency is 56.98% and Vitamin A prophylaxis is 59.51%.

Figure 3: Frequency and percentage distribution of Practice score obtained by mothers of under five children on prevention of Vitamin A deficiency



The above figure reveals that out of 124 participants, majority of them i.e. 99(79.83%) have good practice, 24(19.35%) have average practice and 1(0.80%) have poor practice regarding prevention of Vitamin A deficiency.

Section 2: Findings related to association between knowledge on prevention of Vitamin A deficiency with their selected demographic variables

Table 2: Chi-square value showing association between knowledge on prevention of Vitamin A deficiency and their selected demographic variables.

DEMOGRAPHIC VARIABLES	GOOD KNOWLEDGE	AVERAGE KNOWLEDGE	POOR KNOWLEDGE	TABULATED VALUE	df	Calculated Value
AGE (IN YEARS) 18-28 29-39 40-50	6 23 6	18 46 4	5 12 4	2.78	4	5.07*
EDUCATION QUALIFICATION Uneducated Primary Secondary Higher secondary Graduate and above	1 2 14 4 13	2 10 37 6 13	4 1 8 5 4	15.51	8	18.0551*
OCCUPATION Home-maker Farmer/Laborer Service Business	21 6 6 2	43 14 7 4	12 5 2 2	2.45	6	1.8186

MONTHLY INCOME OF THE FAMILY <10,000 10,000-20,000 21,000-31,000 >31,000	2 10 4 9	17 38 3 10	10 7 2 2	2.45	6	16.006*
NO. OF CHILDREN UNDER FIVE YEARS Up to 2 children More than 2 children	34 1	66 2	19 2	4.30	2	1.97
TYPES OF FAMILY Nuclear Joint	29 6	55 13	11 10	4.30	2	8.33*

* Denotes the association between knowledge and selected demographic variables.

Section 3: Findings related to association between knowledge and practice on prevention on vitamin A deficiency

- Karl Pearson's formula

$$r = \frac{\Sigma(x-\bar{x})(y-\bar{y})}{\sqrt{\Sigma(y-\bar{y})^2\Sigma(x-\bar{x})^2}}$$

r = 0.1227

By using the Karl Pearson's formula, r was found to be 0.1227, therefore there is weaker positive correlation between knowledge and practice of the participants.

Discussion

Present Study	Relevant Study
Majority i.e. 54.03% of participants have average knowledge on prevention of Vitamin-A deficiency followed by 28.22% have good knowledge and 17.74% have poor knowledge regarding prevention of Vitamin-A deficiency.	R Sindhu Priya, T Nathini (2020) found that knowledge of mother of under five children regarding Vitamin-A deficiency shows inadequate knowledge as 72%, moderate knowledge as 16% and adequate knowledge as 12%.
In the present study majority i.e. 79.83% participants have good practice towards prevention of Vitamin-A deficiency, 19.35% have average practice and 0.8% have poor practice towards prevention of Vitamin-A deficiency.	Thunga Usharani (2018) found that 14% had good practice, 32% had fair practice and 54% had poor practice towards prevention of Vitamin-A deficiency.

Conclusion

Based on the findings of the study, it can be concluded that majority of the participants 54.03% (67) have average knowledge regarding prevention of Vitamin A deficiency and 79.83% (99) have good practice. The present study also reveals that there is association between knowledge with demographic variables- Age, Education, Monthly income, Type of family of the participants. There is weaker positive correlation between knowledge and practice of the participants.

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