

# A Study to Assess the Knowledge of Vitamin A Deficiency among Under Five Mothers in a Selected Area, West Saidapet

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## ABSTRACT

Vitamin A deficiency is a major nutritional problem among Under Five Children in developing and under developed countries. Public and Community Health Sectors launched a number of Vitamin-A Prophylaxis Programmes to prevent Vitamin-A deficiency diseases. Vitamin-A deficiency is a systemic disease with major effects on Eye. This deficiency is usually associated with Malnutrition, Chronic Diarrhea, Malabsorption Syndrome, Cystic Fibrosis of Pancreas, Hepatic Insufficiency and Prematurity. So the present study is done to assess the knowledge of vitamin-A deficiency among under five Mothers at selected area, urban primary health centre (UPHC) West Saidapet. A quantitative research design was done in urban area of Saidapet. 30 under five Mothers were included in our study. Convenience sampling technique method was used in selecting the samples. Structured questionnaires were used to collect data on knowledge of vitamin-A deficiency among under five Mothers. The demographic variable Sex of the baby had shown statistically significant association with level of knowledge regarding vitamin-A deficiency among Mothers of Under five Children at  $p < 0.05$  level and the other demographic variables had not shown statistically significant association with level of knowledge regarding vitamin-A deficiency among Mothers of Under five Children.

**Keywords:** *assess, knowledge, vitamin-A deficiency, under five Mothers.*

## INTRODUCTION

“HEALTH IS WEALTH”

Vitamin-A deficiency is a major nutritional problem among under five children in developing and under developed countries. Public and community health sectors launched a number of Vitamin-A prophylaxis programmes to prevent Vitamin-A deficiency diseases. Vitamin-A deficiency is a systemic disease with major effects on eye.<sup>1</sup>

Vitamin-A Deficiency (VAD) occurs where diets contain insufficient vitamin A for meeting the needs associated with growth and development, physiological functions, and periods of added stress due to illness. Vitamin-A Deficiency (VAD) is a significant public health problem in over 75 countries. The Children of developing Countries suffer most from this condition, which is largely preventable. It is estimated that up to 230 Million Children are at risk of VAD (Vitamin-A Deficiency) and over one million VAD (Vitamin-A Deficiency) associated Childhood deaths occur annually.<sup>2</sup>

Vitamin-A (retinol and beta carotene) is indispensable for Normal vision. It helps to form retinal pigments, rhodopsin and iodeosin for vision in dim light. It is essential for normal functions of glandular and epithelial tissues of Skin, Eyes, Digestive, Respiratory, Urinary and Reproductive system. It promotes bone and teeth development. The recommended daily allowance for Infants is 300-400

micrograms and adolescents 750 micrograms.<sup>4</sup>

Night blindness is one of the first signs of vitamin-A deficiency. Xerophthalmia and complete blindness can also occur since Vitamin-A has a major role in photo transduction. Approximately 2,50,000 to 5,00,000 Malnourished Children in the developing world go blind each year from a deficiency of vitamin-A, approximately half of which die within a year of becoming blind. The most common cause of blindness in developing countries is vitamin-A deficiency (VAD). The World Health Organization (WHO) estimates 13.8 million Children to have some degree of visual loss related to VAD (Vitamin-A Deficiency). Night blindness and its worsened condition, Xerophthalmia, are markers of VAD (Vitamin – A Deficiency), as VAD (Vitamin-A Deficiency) can also lead to impaired immune function, cancer, and birth defects.<sup>5</sup>

People with Night blindness have poor vision in the darkness, but see normally when adequate light is present. VAD (Vitamin-A Deficiency) affects vision by inhibiting the production of rhodopsin, the eye pigment responsible for sensing low light situations. Osteoarthritis can be classified into two groups primary and secondary. Primary osteoarthritis is a chronic degenerative disease and is related and is related to aging. The water content of the cartilages decreases on increasing age, thus making them more susceptible to degradation. While secondary arthritis usually affects the joints earlier in life due to specific causes such as injury during a job requiring frequent kneeling or squatting for long duration, diabetes and obesity.<sup>5</sup>

Rhodopsin is found in the retina and is composed of retinal (an active form of vitamin- A) and opsin (a protein). Because the body cannot create retinal in sufficient amounts, a diet low in vitamin-A will lead to a decreased amount of rhodopsin in the eye, as there is inadequate retinal to bind with opsin. Night blindness results. Night blindness caused by VAD (Vitamin-A

Deficiency) has been associated with the loss of goblet cells in the conjunctiva, a membrane covering the outer surface of the eye. Goblet cells are responsible for secretion of mucus, and their absence results in Xerophthalmia, a condition where the eyes fail to produce tears.<sup>6</sup>

All children with clinical signs of VAD (Vitamin-A Deficiency) should be treated as early as possible. Administer 3 doses of Vitamin-A as follows, 1<sup>st</sup> dose immediately on diagnosis, 2<sup>nd</sup> dose 24hrs later and third dose 1- 4 weeks later. A single dose of Vitamin-A consists of 50,000 units for children less than 6 months .1 lack units for Infants 6- 12 months and 2 lack units for Children older than 1 year. Vitamin-A is available in form of a syrup (1,00,000 unit /ml), Capsule (1,00,000 unit/capsule) or Injection sick Children should be given Vitamin-A Intramuscularly.<sup>7</sup>

India was the first country to launch a National Program of Vitamin-A distribution for prevention of Blindness in Children. Under this programme, a massive dose of Vitamin-A is given once in six months to Preschool Children. Nutrition education to Mother aimed at promoting the consumption of Vitamin-A rich foods for the Children is also given. The programme is implemented through Primary Health Centres and actual distribution is done by Paramedical Workers. The National Programme for prophylaxis against Blindness due to Vitamin-A deficiency was launched in 1970. In 1992 when CSSM Programme was launched, it was merged with the same currently it forms the parts of this RCH Programme.<sup>8</sup>

The purpose of the study; [1]To assess the knowledge of Mothers of Under five Children regarding Vitamin-A deficiency. [2] To find out the association between the socio economic factor of Vitamin- A deficiency among Under five Mothers. [3] To determine the association of Vitamin-A and other demographic variables among Under five Mothers.

## METHODS AND MATERIALS

A quantitative study with convenience sampling technique was used to conduct the study in urban primary health centre of Saidapet. 50 sample were selected are a convenience sampling technique. The criteria for sample selection are under five Mothers visiting urban primary health centre, those under five Mothers who were available at the time of data collection, under five Mothers who can able to read and write Tamil and English, under five Mothers who are willing to participate in the study. The exclusion criteria for the samples are who are not willing to participate in the study, who are not available during the study and Mothers who do not know Tamil or English. The data collection period was done with prior permission from head officer of urban primary health centre at Saidapet and ethical clearance was obtained from the institution. The purpose of the study was explained to the samples and written informed consent was obtained from them. The demographic data collected consists of age of the Mother, age of the baby, sex of the baby, Religion, type of family, source of information, socio economic status, Occupation of the Mother. The study investigators explained to the under five Mothers about the study's objectives and requirement of consent to participate in the study. The investigators then provided instructions for filling the questionnaires and then guided the women. Understanding of each question was checked by asking women to repeat the meaning. During the filing of questionnaires, the investigators helped the women throughout and helped to simplify the purpose of each questions, clarifying doubts and checking for completeness of filling up the questionnaires. Chi-square test was used to test the association between categorical variables.  $p < 0.05$  was taken as statistically significant.

## RESULT AND DISCUSSION

### Section A: Sample characteristics

Among 30 samples most of the under five Mothers 14 (46.7%) of Mothers were in the age group of 26-30 years, 11(36.7%) of babies were in the age group of 3-4 years, 16 (53.3%) were Male, 10(33.3%) were Hindus and Christians respectively, 17 (56.7%) belonged to Nuclear Family, 11(36.7%) received previous information through health professionals and 16 (53.3%) of Mothers were Unemployed.

**Section B:** Frequency and percentage distribution of level of knowledge of Mothers of Under five children regarding vitamin-A deficiency.

The table 2 shows that most of them, 12 (40%) had moderately adequate knowledge, 11 (36.67%) had Inadequate knowledge and 7(23.33%) had adequate knowledge regarding vitamin-A deficiency.

**TABLE 1: Frequency and percentage distribution of demographic variables of Under five Mothers. N = 30**

Demographic Variables	No.	%
Age in year of the mother		
20 – 25 years	12	40.0
26 – 30 years	14	46.7
31 – 35 years	3	10.0
36 – 40 years	1	3.3
Age of the baby or child		
Below 1 year	7	23.3
1 – 2 years	6	20.0
3 – 4 years	11	36.7
Above 4 years	6	20.0
Sex of the baby		
Male	16	53.3
Female	14	46.7
Religion		
Hindu	10	33.3
Muslim	7	23.4
Christian	10	33.3
Others	3	10.0
Type of family		
Nuclear	17	56.7
Joint	11	36.6
Extended	2	6.7
Source of information		
Mass media	9	30.0
Friends	9	30.0
Health professionals	11	36.7
No information	1	3.3
Socio economic status		
Rs.5000	3	10.0
Rs.5001 – 10000	9	30.0
Rs.10001 – 15000	12	40.0
Above Rs.15000	6	20.0
Occupation of the mother		
Unemployed	16	53.3
Government job	8	26.7
Private job	6	20.0
Agriculture	-	-

**TABLE 2: Frequency and percentage distribution of level of knowledge of Mothers of Underfive children regarding vitamin-A deficiency. N = 30**

Level of Knowledge	Frequency (f)	Percentage (%)
Inadequate knowledge (≤50%)	11	36.67
Moderately adequate knowledge (51 – 75%)	12	40.0
Adequate (>75%)	7	23.33

**TABLE 4: Association of level of knowledge of Mothers of Under five Children regarding vitamin-A deficiency with their selected demographic variables. N = 30**

Demographic Variables	Inadequate		Moderately Adequate		Adequate		Chi-Square Value
	No.	%	No.	%	No.	%	
Age in year of the mother							$\chi^2=3.678$ d.f=6 p = 0.720 N.S
20 – 25 years	4	13.3	5	16.7	3	10.0	
26 – 30 years	5	16.7	6	20.0	3	10.0	
31 – 35 years	2	6.7	0	0	1	3.3	
36 – 40 years	0	0	1	3.3	0	0	
Age of the baby or child							$\chi^2=10.593$ d.f=6 p = 0.102 N.S
Below 1 year	1	3.3	4	13.3	2	6.7	
1 – 2 years	2	6.7	4	13.3	0	0	
3 – 4 years	4	13.3	2	6.7	5	16.7	
Above 4 years	4	13.3	2	6.7	0	0	
Sex of the baby							$\chi^2=8.054$ d.f=2 p = 0.018 S*
Male	4	13.3	5	16.7	7	23.3	
Female	7	23.3	7	23.3	0	0	
Religion							$\chi^2=5.195$ d.f=6 p = 0.519 N.S
Hindu	2	6.7	5	16.7	3	10.0	
Muslim	2	6.7	3	10.0	2	6.7	
Christian	6	20.0	2	6.7	2	6.7	
Others	1	3.3	2	6.7	0	0	
Type of family							$\chi^2=3.378$ d.f=4 p = 0.497 N.S
Nuclear	5	16.7	8	26.7	4	13.3	
Joint	6	20.0	3	10.0	2	6.7	
Extended	0	0	1	3.3	1	3.3	
Source of information							$\chi^2=5.987$ d.f=6 p = 0.425 N.S
Mass media	5	16.7	3	10.0	1	3.3	
Friends	2	6.7	4	13.3	3	10.0	
Health professionals	4	13.3	5	16.7	2	6.7	
No information	0	0	0	0	1	3.3	
Socio economic status							$\chi^2=7.835$ d.f=6 p = 0.250 N.S
Rs.5000	2	6.7	1	3.3	0	0	
Rs.5001 – 10000	1	3.3	4	13.3	4	13.3	
Rs.10001 – 15000	4	13.3	5	16.7	3	10.0	
Above Rs.15000	4	13.3	2	6.7	0	0	
Occupation of the mother							$\chi^2=0.699$ d.f=4 p = 0.951 N.S
Unemployed	5	16.7	7	23.3	4	13.3	
Government job	3	10.0	3	10.0	3	10.0	
Private job	3	10.0	2	6.7	1	3.3	
Agriculture	-	-	-	-	-	-	

\*p<0.05, S – Significant, N.S – Not Significant

The table 4 shows that the demographic variable Sex of the baby had shown statistically significant association with level of knowledge regarding vitamin-A deficiency among Mothers of Under five Children at p<0.05 level and the other demographic variables had not shown statistically significant association with level of knowledge regarding vitamin-A deficiency among Mothers of Under five Children<sup>52</sup>.

The present study assesses the knowledge of vitamin-A deficiency among under five Mothers. Most of them, 12 (40%)

had Moderately adequate knowledge, 11 (36.67%) had Inadequate knowledge and 7(23.33%) had adequate knowledge regarding vitamin-A deficiency. Which is similar to findings reported by Ankit Sheth M, Matib Rangoonwala M et.al, (2015) conducted a Study on Practice regarding Vitamin-A intake and its deficiency disorders among Mothers of Pre – School Children at Khisara village, Rajkot, Gujarat. A cross sectional study was used in the study. Out of total 196 Mothers of Pre – School Children in the village, 98 (50% Of the total after Convenient Sampling were

selected. 95 Mothers consented and gave complete response. Interview was conducted using a pretested Semi Structured questionnaire. The findings revealed that Mean age was 25.9 Years, 38.9% were Illiterate and 80% were Non- Working. 32.6% knew about Vitamin-A rich foodstuffs. 18.9 % were aware about Vitamin-A Prophylaxis programme. 27.4% included Vitamin-A rich foods in diet of their Children. 68% didn't know about any symptoms about Vitamin-A deficiency disorders.

### CONCLUSION

Vitamin-A is very essential to prevent diseases like Night blindness, Xerophthalmia, Bitot spots, corneal xerosis, keratomalacia etc. Eyes are the special sensory organs which help to provide vision to see the things around us. The study results show that only 23.33% Mothers of Under five Children has Adequate knowledge regarding Vitamin-A deficiency. Hence it is very important to create awareness about Vitamin-A deficiency to the Mothers of Under five Children.

The knowledge regarding Vitamin-A deficiency in a community area will be prevented by providing health education to the communities. The importance of Vitamin-A will be provided by increasing the Mass media channels, health camps, Vitamin-A Supplementation programmes to the Mothers. The Nurse can provide health education through charts regarding Vitamin-A importance, food sources (All Orange, Green and Yellow Colored Fruits and Vegetables), Vitamin-A (Recommended Daily Allowance), Vitamin-A Supplementation and deficiency diseases due to Vitamin-A.

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### Conflict of Interest:

The authors declare no conflicts of interest.

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