

Knowledge, Attitude and Practices among Mothers of Pre-school Children Regarding Vitamin A Supplementation at Field Practice Area of GCS Medical College, Ahmedabad.

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Abstract:

Introduction : Vitamin A deficiency is one of the most important causes of preventable childhood blindness and is a major contributor to morbidity and mortality from infections, especially in children and pregnant women, affecting the poorest segments of populations, particularly those in low and middle income countries. **Objective:** To determine the knowledge, attitude and practices of mothers of pre-school children regarding Vitamin A supplementation. **Method:** A Cross sectional study was carried out in the urban field practice area of GCS Medical College, Ahmedabad during October 2015 to November 2015. Total 250 mothers of pre-school children (1-5 years of age) were interviewed through house to house survey using a pretested questionnaire. **Results:** Mean age of mothers was 27.8 ± 4.4 years. 8.4% of mothers were illiterate. 92% were housewives and 37.6% belong to low socio economic status. 66.4% belong to joint family. 98.4% children had ever received Vitamin A Supplementation and out of them 71.5% had received Vitamin A supplementation from Anganwadi Centre followed by Urban Health Centre (17.9%). Only 4.4% mothers answered night blindness as disease caused by vitamin A deficiency followed by vision problem (4.4%). 36.6% mothers had knowledge that Green leafy vegetables are good source of vitamin A followed by Banana (35.7%) and Papaya (24.4%). 8.0% mothers had received information of Vitamin A rich food. **Conclusion:** Nutrition education session for mothers should be arranged; it should address knowledge of VA-rich food & vitamin A supplementation of pre-school children.

Key Words: Vitamin A supplementation, Pre-school children, Night blindness

Introduction :

Pre-school children represent about 9.7 percentage of the general population in India. The pre-school age mortality in India is as high as 2.3 per cent of all deaths. This high mortality, which is largely due to infection and malnutrition, is characteristic of this age group in underprivileged areas. Their development is in the interest of the total national development; therefore, they need special attention. Unfortunately, pre-school age children are comparatively less attended to. At least 5 per cent of the pre-school age children belonging to poor socio-economic groups show signs of vitamin A deficiency.^[1]

An estimated 5.7% children in India suffer from eye sign of Vitamin A deficiency (VAD). Vitamin A deficiency is in fact, the single most frequent cause of blindness among pre-school children in developing countries.^[1] Vitamin A schedule recommended under

the National Programme for prophylaxis against Blindness in children caused due to vitamin A deficiency integrated with RCH programme is 1 lakh IU for 6-11 months old baby as a first dose then from 1-5 years 2 lakh IU per 6 months. A total of 9 doses of Vitamin A are given (Government of India, 2006). Children age 12 – 35 months who received a Vitamin A dose in last 6 months is 21% only. (NHFS-3)^[2]

Vitamin A is an essential nutrient needed in small amounts for the normal functioning of the visual system, and maintenance of cell function for growth, epithelial integrity, red blood cell production, immunity and reproduction.

Vitamin A deficiency is one of the most important causes of preventable childhood blindness and is a major contributor to morbidity and mortality from infections, especially in children and pregnant women, affecting the poorest segments of

populations, particularly those in low and middle income countries. The primary cause of vitamin A deficiency is lack of an adequate intake of vitamin A, and may be exacerbated by high rates of infection, especially diarrhoea and measles. Its consequence is most apparent during stages of life of high nutritional demand (e.g. early childhood, pregnancy and lactation).^[3]

Nutritional blindness is one of the serious public health problems. Younger the child, more serious is the disorder because a young child is not having sufficient vitamin A reserve in the body unlike adults and it often associated with Protein Energy Malnutrition (PEM). Thus, a young child is always at risk of Vitamin A deficiency. Nearly 70000 children below 3 years are becoming permanently blind only due to Vitamin A deficiency every year in India.^[4]

Xerophthalmia is the most specific VAD Disorder; and is the leading preventable cause of blindness in children throughout the world.^[5] Pre-existing VAD appears to worsen infection^[6] and vitamin A supplementation has been shown to reduce the risk of death in 6–59 month old children by about 23–30%.^[7,8]

Various types of community interventions can reduce VAD in affected populations that are improving the availability and intake of vitamin A through dietary diversification, by increasing the dietary intake of vitamin A is through fortification of a staple food or condiment with vitamin A^[9] & thirdly, the most widely practiced approach to control VAD in most high risk countries is the periodic administration of high-potency supplements, containing 200000 IU of vitamin A, to pre-school age children (<5 years), with half of this dose given to infants aged 6–11 months of age.^[10] Worldwide, between 1.3 and 2.5 million out of a total of 7.8 million deaths among infants and preschool-age children (late infancy up to age 4 years) could be prevented each year by improving vitamin A nutrition.^[11]

In order to improve the vitamin A supplementation coverage of the under five children, government of India has linked Vitamin A supplementation to Universal Immunization Programme (UIP) and Integrated Child Development Services (ICDS).^[12]

Objective :

- To determine the knowledge, attitude and practices of mothers of pre-school children regarding vitamin A supplementation

Method :

A Community based cross sectional study was conducted among 250 mothers of pre-school children (1 to 5 years of age) in urban field practice area of GCS Medical College; Ahmedabad after obtaining ethical approval from institutional ethical committee. After taking informed consent, interview of mothers of pre-school children were taken by trained authors through house to house survey starting from 1st house, till desired sample size achieved using pre-tested & semi structured questionnaire during October to November 2015. (Total population covered by urban health training centre, Community Medicine Department, GCS Medical College, Ahmedabad is around 5000. Pre-school children represent about 9.7 percentage of the general population in India, as per this total pre-school children may be 500. So total 250 preschool children were taken as study sample (50% of the preschool children were taken as a study sample). Questionnaire contains socio-demographic information of mother; children age, birth order, total vitamin A supplementation dose taken, Vitamin A rich food knowledge, knowledge about national vitamin A prophylaxis programme etc. Vitamin A supplementation practice was confirmed after seeing Mamta card of mother or Immunization card of child. Data entry was done in MS Excel and Analysis was done.

Results :

Table 1 shows mean age of mother was 27.8 ± 4.4 years. Minimum age of study sample was 20 years and maximum age of mother was 42. Total 99.6% mothers were Hindu and 72.8% had taken secondary education or higher. Most of the mothers were housewives (92%) and 37.4% were in class IV & V. Total 66% mothers belong to joint family. 98.4% children had ever received vitamin A supplementation dose.

Table 1: Socio-demographic profile of mothers (n=250)

Sr. No.	Particular (n=250)	Frequency (%)	Percentage
1	Age group (in years)		
	20-30	199	79.6
	30-40	50	20
	40-50	01	0.4
2.	Religion		
	Hindu	249	99.6
	Muslim	01	0.4
3	Education level of mothers		
	Illiterate	21	8.4
	Primary Education	47	18.8
	Secondary Education	126	50.4
	Higher Secondary	37	14.8
	Graduation / Post-graduation	19	7.6
4	Occupation of Mothers		
	Housewife	230	92
	Business	13	5.2
	Service	06	2.4
	Laborer	01	0.4
5.	Socio-economic status (Modified Prasad Classification)		
	I	12	4.8
	II	39	15.6
	III	105	42
	IV	86	34.4
	V	8	3.2

In table 2, 52.4% of the children below 18 months of age had received two doses of vitamin A supplement as per National vitamin A prophylactic programme while 1.8% children above 18 months of age had not received any dose of vitamin A Supplement in children age group 18 months to 5 years of age. 52.4% children had taken two or more doses of vitamin A supplementation in children age group 18 months to 5 years of age.

Table 2: Vitamin A supplementation according to age

Age of child (in months)	Vitamin A Supplementation received	Frequency (%)
12 to 18 months (n=21)	Received only two doses of Vitamin A	11 (52.4%)
18 months to 60 months (n=229)	Received only one dose of Vitamin A	105(45.8%)
	Received at least two or more doses of vitamin A	120 (52.4%)

Table 3 shows 71.5% children had taken dose of vitamin A supplements from Anganwadi centre followed Urban Health Centre (17.9%).

Table 3: Place of vitamin A supplementation received

Place	Frequency	Percentage (%)
Anganwadi	176	71.5
Urban Health Centre	44	17.9
Government Hospital	08	3.3
Private Hospital	08	3.3
Trust Hospital	06	2.4
CHC/PHC	02	0.8
Municipal Hospital	02	0.8

Figure 1 show only 11 (4.4%) mothers had knowledge that night blindness is caused by vitamin A deficiency while few mothers answered wrong like polio, fever, skin disease, paralysis, measles etc. developed due to vitamin A deficiency. 52% mother had knowledge of one or more food rich in vitamin A.

Figure 1: Knowledge of mothers regarding diseases due to Vitamin A deficiency

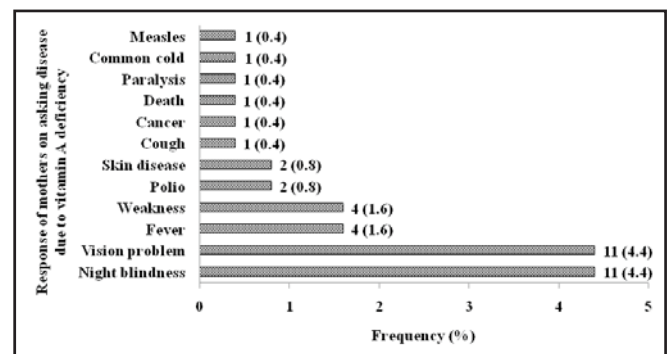


Table 4: Received any information regarding Vitamin A Supplementation & vitamin A rich food

Received any information	Vitamin A Supplementation information		Information regarding vitamin A rich food	
	Frequency	Percentage (%)	Frequency	Percentage (%)
No	226	90.4	230	92
Yes	23	9.2	20	08
Not remembered	01	0.4	00	00

Table 4 shows only 23 (9.2%) mothers had received information regarding vitamin A supplementation dose and 20 (8%) mothers had received information regarding sources/food rich in vitamin A.

In table 5, from Anganwadi centre, 18 (78.3%) mothers received information regarding vitamin A supplementation while 16 (80%) mothers received information regarding food rich in vitamin A.

Table 5: Source of information regarding Vitamin A Supplementation*

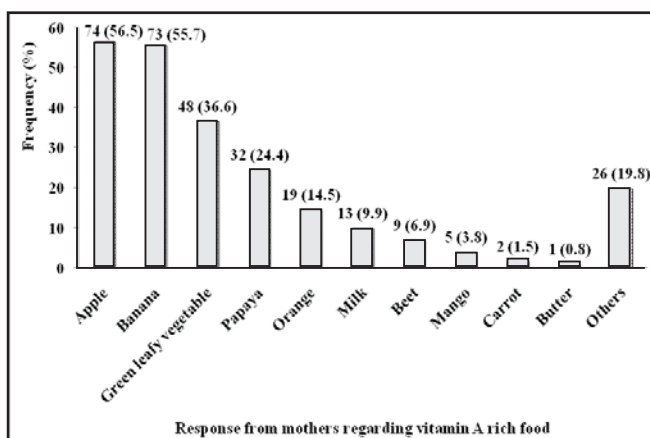
Source	Received information regarding Vitamin A Supplementation		Received information of Vitamin A rich food	
	Frequency (n=23)	Percentage (%)	Frequency (n=20)	Percentage (%)
Anganwadi	18	78.3	16	80
Health worker/Vaccinator	04	17.4	01	05
Doctor	02	8.7	03	15

*Multiple answers

In figure 2, 56.5% mothers answered apple a source of vitamin A followed by banana (55.7%), Green leafy vegetables (36.6%), Papaya (24.4). Others include

rice, dal, roti, egg, pulses, almond, custard apple, pomegranate, breast milk, chikoo, and fish.

Figure 2: Knowledge of various food sources of Vitamin A (n=131)



In the present study, 35.2% mothers had knowledge regarding National Vitamin A Prophylaxis Programme. 54.4% mother believed vitamin A deficiency disorder is curable & 58% mothers believed vitamin A deficiency disorder are preventable.

Table 6 shows association of knowledge on vitamin A rich foods, curability & prevention of vitamin A deficiency disorder with mother's education level. It is significantly associated with education level of mothers. (p value < 0.05)

Table 6: Association of mother's education levels with knowledge on vitamin A rich foods, Vitamin A deficiency disorder curable & Preventable

Variable with categories	Mother's Education					Chi square test (p value)
	Illiterate	Primary	Secondary	Higher secondary	Graduation / Post graduation	
knowledge on vitamin A rich foods	8	34	49	23	16	27.52 (< 0.0001)
Vitamin A deficiency disorder curable	13	33	53	24	14	17.44 (0.0016)
Vitamin A deficiency disorder preventable	12	37	57	25	15	21.57 (0.002)

Discussion :

Present study showed mean age of mother was 27.8 ± 4.4 years. In the study by Shanker Mattaet al, majority of women, 308 (61.6%) interviewed were in the age group of 16-25 years. Regarding the educational status 111(22.7%) women were illiterate followed by 118 (24.1%) women, who were educated till 5/6th standard. Regarding the occupation majority of women were housewives or daily wagers/labourers.^[13]

In the previous study conducted by Rozina Khali et al, The mean age of mothers was 29.28 years (SD \pm 5.34), minimum age was 19 and maximum age was 45 years. About 93% of mothers were housewives and only 7% were working ladies. 70% were poor but 7% belonged to very low socio economic status. Only 12% of women got education more than 10 years schooling.^[14] while present study showed most of the mothers were housewives (92%) and 37.4% were in class IV & V.

Azizur Rahmanet al. found nearly forty three percent mothers were aged 28-32 years and only about eleven per cent mothers were less than 23 years. More than seventy one per cent women were Hindu. Likewise fifty one per cent and twenty eight percent women had higher secondary level and secondary level education respectively.

Two third of mothers were lived in nuclear family, and more than half of the respondents were employed with forty three percent as a service holder. Sixty five percent of mothers had a monthly family income of more than 10,000 rupees.

Besides this, more than half of the mothers got information from health workers while a quarter of them got information via Radio/TV. Likewise sixty four percent mothers got information from health campaign in their community and ninety eight percent got information from families and friends.

Ninety one percent mothers knew vitamin A deficiency disorder can be cured, whereas more than two third of mothers didn't agree that it can be preventable.^[15]

While in present study 54.4% mother believed vitamin A deficiency disorder is curable & 58% mothers believed vitamin A deficiency disorder are preventable. In the previous study conducted by Rozina Khali et al, 33% respondents had no information about Vitamin-A. 27% had source of information from TV and 15% had the information from LHW / vaccinator. Vitamin A knowledge was more among mothers with educational level.^[14]

In the present study it was found that only 4.4% mothers had knowledge that night blindness is caused by vitamin A deficiency while study conducted by N. Arlappaet al, only 12% of the mothers reportedly received health and nutrition education on VAD. About 21% of mothers of pre-school children were aware of night blindness, while only 12% of them attributed it to vitamin A deficiency.^[16]

Shanker Mattaet al. found 41.8% women had no idea about the food stuffs rich in vitamin A, 22.6% women had heard of vitamin A programme.^[13] While in the present study, 35.2% mothers had knowledge regarding National Vitamin A Prophylaxis Programme.

Although the supplementation of a massive dose of vitamin A to pre-school children under the national programme for prevention of nutritional blindness has been in operation in India for the last three decades, the coverage of children for the stipulated biannual massive dose of vitamin A was only 33%. However, coverage was relatively higher compared to 23% (NNMB 2003).^[17] and 30% reported in India (IIPS (International IIPS 1998-1999)^[18] previously reported in India and 25.6% reported by a Nigerian study (Maziya-Dixon et al. 2006).^[19]

According to the National Family Health Survey (NFHS) 3 (2005-2006) only 18 percent of children aged 6-59 months had received at least one dose of Vitamin A in the last six months. The District level household survey (DLHS 3) (2007-2008) reports that only 19 percent of children aged 12-35 months had received 3-5 doses of Vitamin A^[20] while in present study 52.4% of the children below 18 months of age had received two doses of vitamin A supplement and 1.8% children above 18 months of age had not received any single dose of vitamin A Supplement in children age group 18 months to 5 years of age.

In the present study, from Anganwadi centre, 78.3% mothers received information regarding vitamin A supplementation and 80% mothers received information regarding food rich in vitamin A while in the study by Njue MW et al, ninety four percent of the respondents reported having heard about vitamin A, major source of information being the health worker (82%). While 58% of the respondents were aware that the recommended schedule for Vitamin A Supplementation for children is every 6 months.^[21]

According to National Nutrition Monitoring Bureau (NNMB), about 41% of the mothers of 1-5 years preschool children were aware of night blindness. About 30% of index children reportedly received one or more doses of vitamin A during the previous one year, while about 25% received two doses.^[22] While in present study it was found that 52.2% children had taken two or more doses of vitamin A supplementation in children age group 18 months to 5 years of age. From this study it was clear that majority of women have no idea about food rich in vitamin A, vitamin A supplementation & this is the reason for quite apprehension.

Conclusion :

Knowledge of vitamin A supplementation needs to be addressed through nutritional education session to increase knowledge regarding Vitamin A supplements and also knowledge of vitamin A rich food among mothers of pre-school children.

Recommendations :

There is a need of health education among mothers of pre-school children to improve vitamin A supplements utilization. Health workers, Anganwadi workers and Doctor should be encouraged in motivating people and communities to increase knowledge for vitamin A supplementation.

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