

Watch Report

Report No. 15

Research and Evaluation Division, BRAC

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Vitamin A Supplementation Program in Rural Bangladesh (Findings From BRAC's VAC Coverage Survey, October 1994)

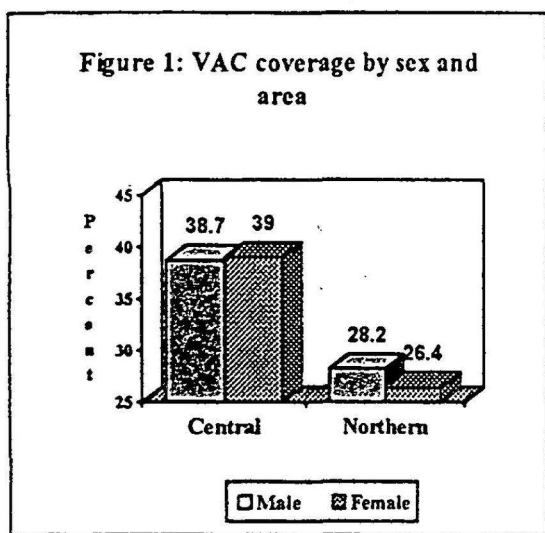
Background of the study

Vitamin A supplementation has long been recognized as one of the most important health issues in Bangladesh. In this poor country, about 30,000 children become blind each year, and more than a million stand very close to that awful end.¹ Thus a large number of handicaps join its already over-burdened poor people each year. This very human catastrophe owes not much to lack of health care amenities, or any food or drug crisis, rather mostly to lack of knowledge on nutrients that are essential for human health. How ignorance can play a disastrous role against a healthful survival thus gets fully and nakedly displayed in this poor land.

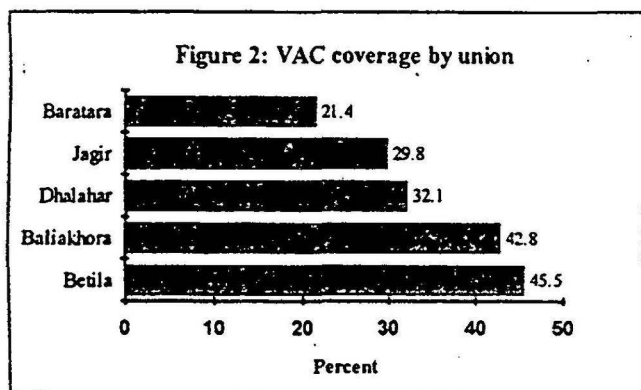
Even globally, the situation is not very complacent. At least 13 million pre-school children in the world have damaged eyes due to vitamin A deficiency.¹ And physiologically, over 40 million pre-school children are vitamin A deficient.³ The devastating effects of vitamin A deficiency on eye and the high prevalence of Xerophthalmia have led many to consider vitamin A deficiency as an ocular disease, but its important role for other parts of the body can not be ignored. It has been

proved by various studies that Vitamin A deficient children have lower resistance to infection and have greater risk of all-cause death.² Some research findings suggest that supplementation with VAC (Vitamin A Capsule) can reduce childhood death by approximately 30 per cent.² It is also estimated that by improving the Vitamin A status of all deficient children in the world, 1-3 million deaths could have been prevented annually.² It has been postulated by some clinical studies that respiratory syncytial viruses (RSV) that cause worldwide epidemics of respiratory diseases severely depletes vitamin A in ill-children. Vitamin A supplementation reduces the length and severity of measles infection.³ In Ghana, Vitamin A Supplementation Trial shows that supplementation of 100,000 IU every four months for a year reduced all-cause death rates. The study also finds it protective against death due to acute gastroenteritis.² In Bangladesh, where diarrhoea still stands as the number one killer disease, the issue of vitamin A supplementation at the community level deserves special importance. It has been found that those who suffer from diarrhoea are most likely to be the victims of eye diseases due to deficiency of vitamin A.

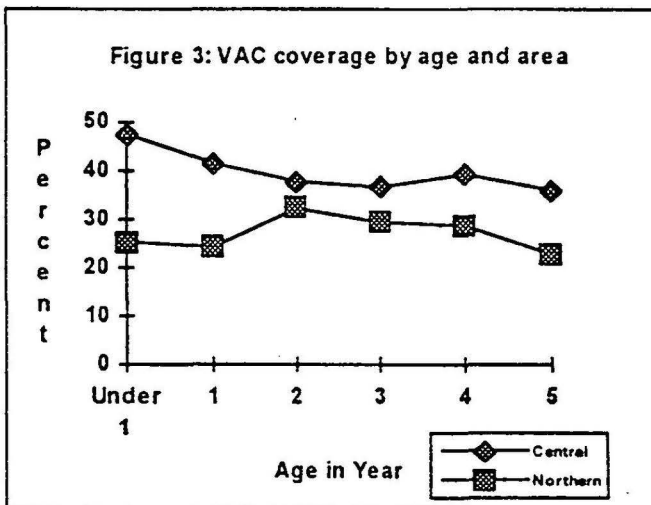
coverage is more pronounced in the North: it is higher in males (28.2 per cent) than females (26.4 per cent). In the central area, though the sex-variation is marginal but unlike the North, stands in favour of females. It is 38.7 per cent in males and 39.0 per cent in females. But in the total population, the sex-variation seems very minimal - it is 35.4 per cent in males and 35.2 per cent in females (Figure 1).



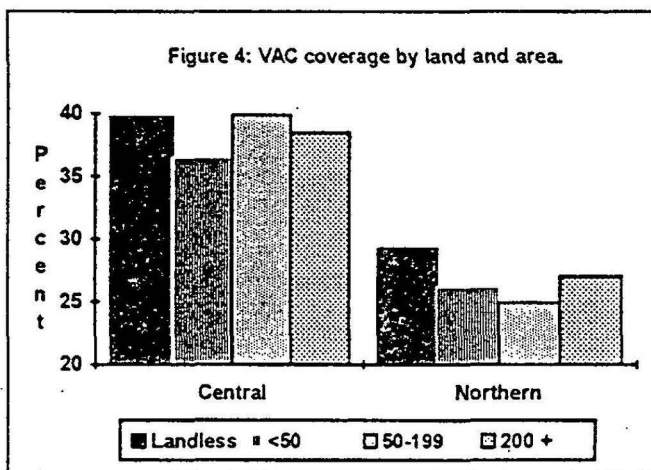
The data finds a marked variation in VAC coverage by unions. It is highest (45.5 per cent) in Betila - a central union and lowest (21.4 per cent) in Baratara - a northern union. Although the data shows higher coverage in the central area but it is not true for all the unions, so the coverage rate in Dhalahar - a northern union stands higher (32.1 per cent) than that of Jagir (29.8 per cent) - a central union (Figure 2).



The highest coverage is found in under 1 year children in the central area, but in the North, it is in 2 years old children. In both the areas, the VAC coverage shows little changes with age in other age-groups (Figure 3).



In both the areas, the highest VAC coverage is found among the children of landless families. In neither area, there reveals any relation of VAC coverage with increase in household land (Figure 4).



In the central area, the data shows the lowest VAC coverage (35.8 per cent) in the children of mothers with more than five years of education - even lower than the children of illiterate mothers (Figure 5). However, the picture is otherwise in the North; the highest rate (29.2 per cent) is found in children with

Unfortunately, the awfulness of the situation was not fully realized in Bangladesh until the early seventies. In 1973, the government with the support of UNICEF, launched a national vitamin A supplementation program twice a year, and it continues till now.¹ Its crucial importance has also been realized by BRAC - as the uplift of the country's health situation remains its prime pre-occupation since the very inception. In such a context, the Health and Demographic Surveillance System of BRAC deemed it essential to maintain a longitudinal watch on Vitamin A Capsule (VAC) coverage status in the rural population, and since September 1989 it started data collection at the field level. However, the present study limits its analysis only with the data collected in October 1994.

Methods and Materials

The data was collected from 5 unions, 3 in Manikgonj district - the central area, and 2 in Joypurhat district - the northern area. A field-based research team for each union has been working since 1986 in the central area and 1987 in the North. The data on VAC coverage is regularly being collected twice a year following the government's distribution time-frame. The first round is usually being collected in April-May and the second in October-November. The surveillance population consist of all children of 6 months to 71 months of age living in the registration area. The most preferred respondents are the mothers of the respective children.

Findings

The survey population is 6990, of them 4791 (68.5 per cent) are in the central area and 2199 (31.5 per cent) in the North. The male and female children are 3504 (50.1 per cent) and 3486 (48.9 per cent) respectively. In the

central area, the 5 years old children form the largest group (20.2 per cent), but in the North they are the 4 years old cohort (19.8 per cent)(Table 1).

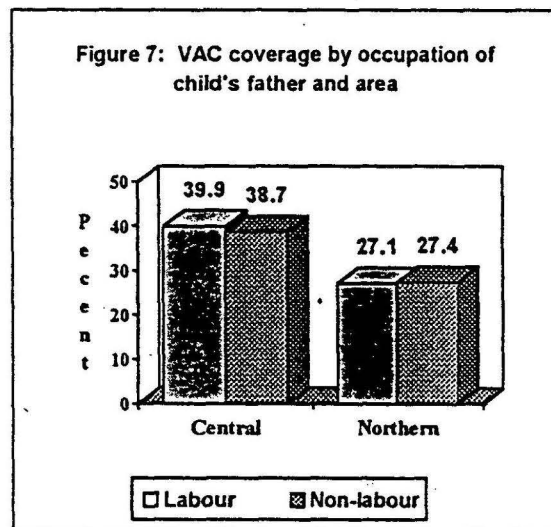
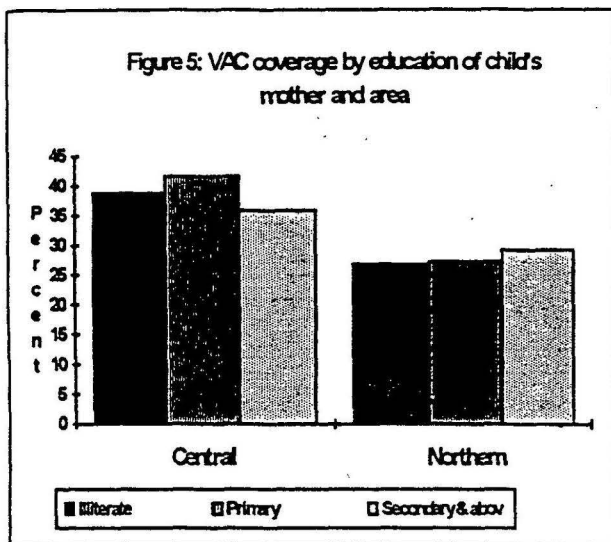
Table 1. Characteristics of the study population.

	Central		Northern	
	(N)	%	(N)	%
<i>By sex</i>				
Male	2396	50.01	1108	50.9
Female	2395	49.98	1091	49.6
Total	4791	100.0	2199	100.0
<i>By age (in year)</i>				
Under 1	452	9.4	174	7.9
1	762	15.9	412	18.7
2	788	16.4	372	16.9
3	890	18.6	415	18.9
4	933	13.2	435	19.8
5	966	20.2	391	17.8
<i>By land (in decimal)</i>				
Landless	2395	51.1	917	42.8
01 - 49	560	11.9	302	14.1
50 -199	990	21.1	547	25.6
200+	740	15.8	374	17.5
<i>By religion</i>				
Muslim	4139	88.5	1961	91.8
Hindu	539	11.5	167	7.8
Other	0	0	8	0.4
<i>By mother's education</i>				
Illiterate	3437	71.7	1342	61.0
I-V	877	18.3	515	23.4
VI & above	477	9.9	342	15.5

The Vitamin A Capsule supplementation program could cover only 35.3 percent of its target population in both the areas. It is comparatively much higher in the central area (39.0 per cent) than the North (27.3 per cent) (Figure 1). The sex-wise variation in VAC

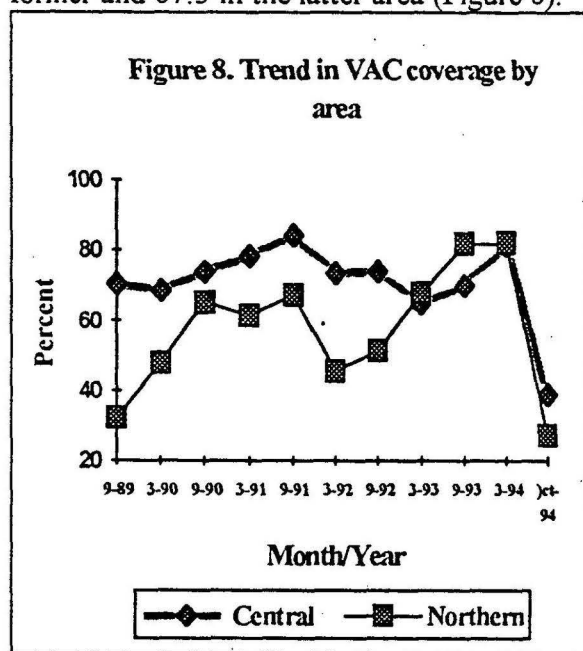
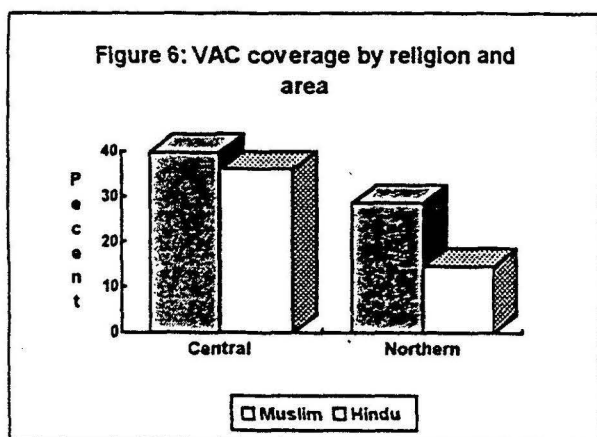
the highest education of mothers, (Figure 5). Of much surprise, in the central area, the highest rate (38.8 per cent) is found in the children of illiterate mothers.

(38.7 per cent). It is otherwise in the North. Here, it is higher in the non-labour (27.4 per cent) than the labour category (27.1 per cent) (Figure 7).



In both the areas, the VAC coverage is higher in the Muslim children than the Hindus. The difference is more marked in the North, here it is 28.5 per cent in the Muslim and 14.4 percent in the Hindu. In the central area, it is 39.7 per cent for the Muslim children and 36.0 for the Hindu. The 'p' value is .0001 (Figure 6).

In both the areas, the VAC coverage rate shows some ups and downs over the study years, and these are more marked in the North. However, the data collected in October 1994 depicts a marked reversal. Even six months before, the coverage was 81.6 per cent in the central area and 82.1 per cent in North. Even in September 1991, the rate was 84.3 in the former and 67.5 in the latter area (Figure 8).



The coverage rate by occupational category differs from one area to another. In the central area, the VAC coverage is higher (39.9 per cent) in the children with paternal profession as labour than those of the non-labour father

Conclusion

The VAC coverage rate has recently suffered a serious set back. Though more marked in the North, in both the areas the decline has been much steeper. And it owes to inadequate program inputs - as revealed at the time of household survey. In most years, the coverage rate has been better in the central area. Surprisingly, in both the areas, the coverage rate is higher in the children of landless families. There exists much variation with union and religion, but no such relation with sex, mother's education or occupation status of father. Of all children, the coverage is highest in under one year age-group in the central area but in the North it is in the two years old children

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