

**Immunization status of under-2 children in BRAC  
member and non-member households**

Sabah Tarannum  
SM Ziauddin Hyder

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BRAC  
Research and Evaluation Division  
75 Mohakhali, Dhaka, Bangladesh

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## Abstract

This study assessed the immunization status of children aged under 2 among BRAC member and non-member households. Data were obtained from a total of 1,872 children, during April 1994 to December 1996, residing in 100 villages of 4 rural *thanas*. Namely Saturaia, Santhia, Mirzapur and Kazipur. Complete immunization coverage rate (children having all 6 vaccines) was lower among BRAC member households (77%) compared to non-member households (eligible and non-eligible) (80-82%). The immunizations coverage rates for BCG, DPT and polio were much higher (over 90%) in all groups of households compared to the coverage for measles (around 60%). The difference between DPT and polio vaccines and membership status was statistically significant ( $p < 0.05$ ). Immunization coverage was significantly ( $p < 0.001$ ) associated with different areas among different types of households, the coverage varying between 92% in Saturaia and 75% in Kazipur. It was also observed that the retention of card was not emphasized to the mothers and they were not the vaccine card; only 53% children had vaccine cards and the rest 47% did not. It indicates that the campaign about vaccination was insufficient. To improve full immunization coverage all over the country, more campaign on immunization is needed. Also, BRAC should investigate why complete immunization was less among BRAC member households compared to non-member households.

## **Introduction**

Immunization is a survival issue for millions of children in Bangladesh. In terms of efficacy and efficiency, it is one of the most reliable means to improve the health status of a population, particularly young children and pregnant mothers. In Bangladesh, nearly a third of the newborn are at risk of losing their lives each year from common childhood diseases, most of which are preventable through vaccines (1). It has also been found that immunization as a public health intervention is a cost-effective and convenient, and has a tremendous potential for morbidity and mortality reductions, particularly in the rural areas of the country (2,3).

The immunization programme of the Bangladesh government originally began in 1979. In July 1985, the programme was intensified to the Expanded Programme on Immunization (EPI) in collaboration with UNICEF and WHO. The programme received strong support and assistance from multiple partners including non-governmental organizations, donor agencies, commercial enterprises and community volunteers (4).

Since mid-1980s, Bangladesh has made a dramatic improvement in its population coverage of immunization for children and mothers. National coverage among children aged 12-23 months for the standard six immunizations (BCG, three doses of Polio vaccine, three doses of DPT vaccine, and one dose of measles vaccine) was 90% in 1995 (5).

In spite of the achievement of this “near miracle” in improvement in coverage (1), vaccine-preventable diseases still account for 17% of the deaths among children under five in Bangladesh (6). In under-served populations, the percentage of deaths due to vaccine-preventable diseases is even higher. In the slums of Dhaka for instance, vaccine-preventable diseases account for 22% of under-five death (7).

## **Objective**

The objective of this study was to assess the vaccination status of the children under 2 years among BRAC member, eligible non-member and non-eligible non-member

households.

## **Methodology**

### **Study area and sampling**

Data were collected from 4 rural *thanas* namely Saturia (in the district of Manikganj), Santhia (in the district of Pabna), Mirzapur (in the district of Tangail), and Kazipur (in the district of Shirajganj) from April 1994 to December 1996. A total of 17 rounds of data collection were conducted in these areas. From each thana, 25 villages were randomly selected which were kept unchanged throughout the period of data collection. The data were collected every two months on 20 randomly selected children from each selected village. During each time of data collection, a random list of all households of a village was used to select a cluster of 20 eligible children. Thus, a total of 500 children aged 6-59 months were included during each time of data collection in each *thana*. Some children were common in two or more consecutive visits. The present analysis is based on the data obtained from a total of 1,872 children comprised of BRAC member 330, eligible non-member 935 and non-eligible non-member 607.

### **Data collection procedure**

Data were collected through house to house visits from vaccine cards, previously supplied to the selected households, and from statements made by mothers and other family members. The date of birth of children was estimated from statements of the parents corroborated by reference to important local events and Bengali calendar.

### **Indicators used**

Immunization- The children who received all required doses of BCG, DPT, Polio and Measles vaccines were considered 'fully immunised', those who received a single or more doses less than the required doses were categorised as 'partially immunised' and those who did not receive any vaccine at all were categorised 'not immunised'.

## **Findings**

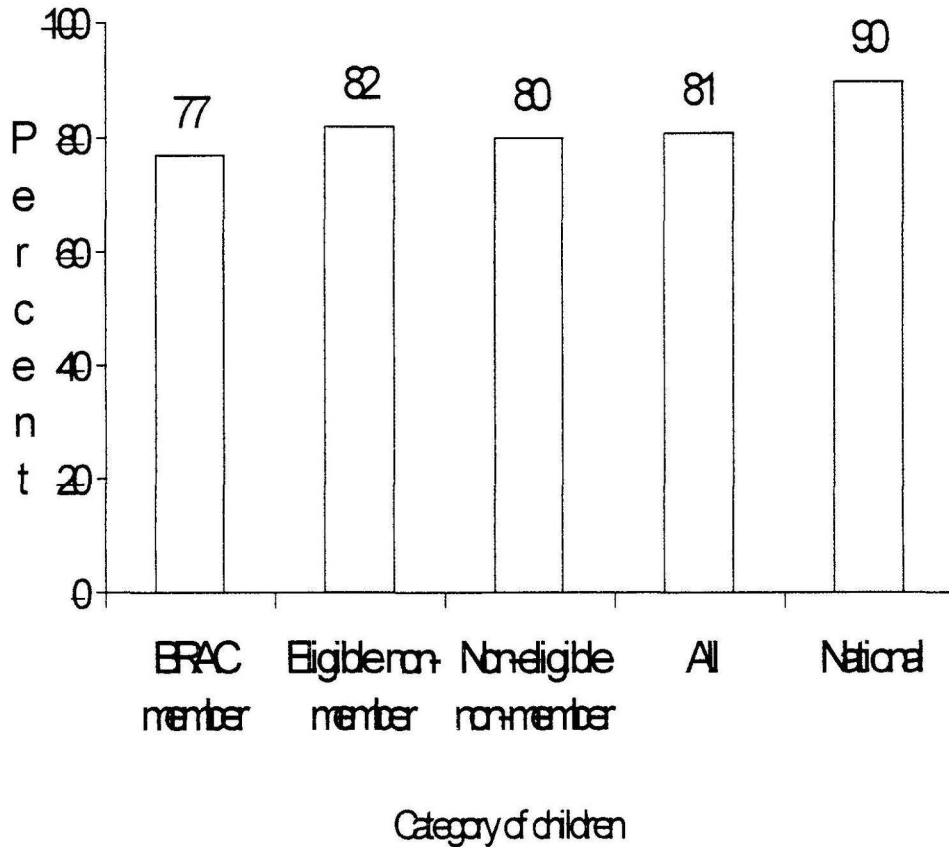
Table 1 shows distribution of the study children by sex and age. A total of 1,872 children,

330 (17.7%) from BRAC member households (166 males and 164 females), 935 (50.7%) from eligible non-member households (454 males and 481 females) and 607 (31.6%) from non-eligible non-member households (308 males and 299 females) were studied. The sex ratio of the children was almost, 50:50. Majority of the children (75-79%) were aged between 1 and 2 years. In all groups, only 57% of the children were found to possess vaccination cards, while the rest had lost their cards.

**Table 1. Distribution of the study children by sex, age and membership status.**

<b>Sex of children</b>	<b>BRAC member % (n)</b>	<b>Eligible non-member % (n)</b>	<b>Non-eligible non-member % (n)</b>	<b>All</b>
Male	50 (166)	49 (454)	51 (308)	50 (928)
Female	50 (164)	51 (481)	49 (299)	50 (944)
Total	330	935	607	1872
<b>Age in month</b>				
6-<12	21 (85)	25 (276)	25 (178)	23 (539)
12-<24	79 (245)	75 (659)	75 (429)	76 (1333)

Figure 1. Immunization coverage of the children (aged 6-24 months) by BRAC membership status



According to Figure 1, 77% of the children of BRAC member households had received all six vaccines (completely immunized) compared to 82% from eligible non-member and 80% non-eligible non-member households. This difference in vaccine coverages between BRAC member and non-member households is statistically significant ( $p < 0.05$ ). It is to be noted that the immunization coverage in the present study villages were markedly lower with the national coverage (90%) (5).

Table 2 shows immunisation coverage by sex. Among BRAC member households, male and female children were equally immunized (77%). But among eligible non-member and non-eligible non-member households, the percentage of fully immunized children was slightly higher among male (83% and 81%) than female children (82 and 79%) respectively. The situation was the reverse in case of totally not immunized children. Among BRAC member households, higher number of male than female children were not immunized at all (15 vs 10). On the other hand, in the other two groups, more female children (21 and 15) than male children (12 and 10) respectively were not immunized (Table 2). No significant association was found between immunisation and sex of the child.

**Table 2. Immunization coverage of children (aged 6-<24 months) by sex and BRAC Membership status.**

Membership status		Immunization coverage			p value
		Completed % (n)	Partial % (n)	Not immunised % (n)	
BRAC member	Child's sex				0.474
	Male	77 (128)	14 (23)	9 (15)	
	Female	77 (126)	17 (28)	6 (10)	
Non-member eligible	Child's sex				0.358
	Male	83 (378)	14 (64)	3 (12)	
	Female	82 (392)	14 (68)	4 (21)	
Non-member non-eligible	Child's sex				0.511
	Male	81 (250)	16 (48)	3 (10)	
	Female	79 (235)	16 (49)	5 (15)	

Table 3 shows vaccination coverage of the children aged less than 12 months. The immunization coverage rate for BCG, DPT and polio were highest among non-eligible non-member households (95%) compared to BRAC member (90%) and eligible non-member households (94%). Immunization coverage rate was lowest for measles among all types of households (<65%) compared to other vaccines. The difference between DPT and polio vaccine and membership status was statistically significant ( $p < 0.05$ ).



**Table 3. Vaccination coverage of children (aged 6-<12months) by BRAC membership status.**

<b>Vaccination coverage</b>	<b>BRAC member % n= 94</b>	<b>Eligible non-member % n=276</b>	<b>Non-eligible non-member % n=178</b>	<b>All % n=548</b>	<b>p value</b>
<b>BCG</b>					
Yes	90	94	95	94	0.267
No	10	6	5	6	
<b>DPT</b>					
Yes	90	94	95	94	0.011
No	10	6	5	6	
<b>Measles</b>					
Yes	51	63	58	59	0.207
No	49	37	42	41	
<b>Polio</b>					
Yes	90	94	95	94	0.011
No	10	6	5	6	

Table 4 shows vaccination coverage of children aged between 12 and 24 months. In this age group, the immunization coverage for BCG was highest among eligible and non-eligible non-member households (97%) compared to BRAC member households (94%). For DPT and polio, the coverage rates were highest among eligible non-member households (97%) compared to other types of households. Interestingly, In this age group, the coverage rate for measles was significantly higher (84-90%) than in the younger group of children (Table 3) but it was still the lowest compared to the other vaccines. The association between vaccination and membership status was statistically significant ( $p<0.05$ ).

**Table 4: Vaccination coverage of children (aged 12-<24months) by BRAC membership status.**

Vaccination coverage	BRAC member % n= 245	Eligible non-member % n=631	Non-eligible non-member % n=428	All % n=1324	p value
BCG					
Yes	94	97	97	96	
No	6	3	3	4	0.037
DPT					
Yes	93	97	96	96	
No	7	3	4	4	0.049
Measles					
Yes	84	90	88	88	
No	16	10	12	12	0.05
Polio					
Yes	94	97	96	96	
No	6	3	4	4	0.049

**Figure 2. Immunization coverage of children by area and BRAC membership status**

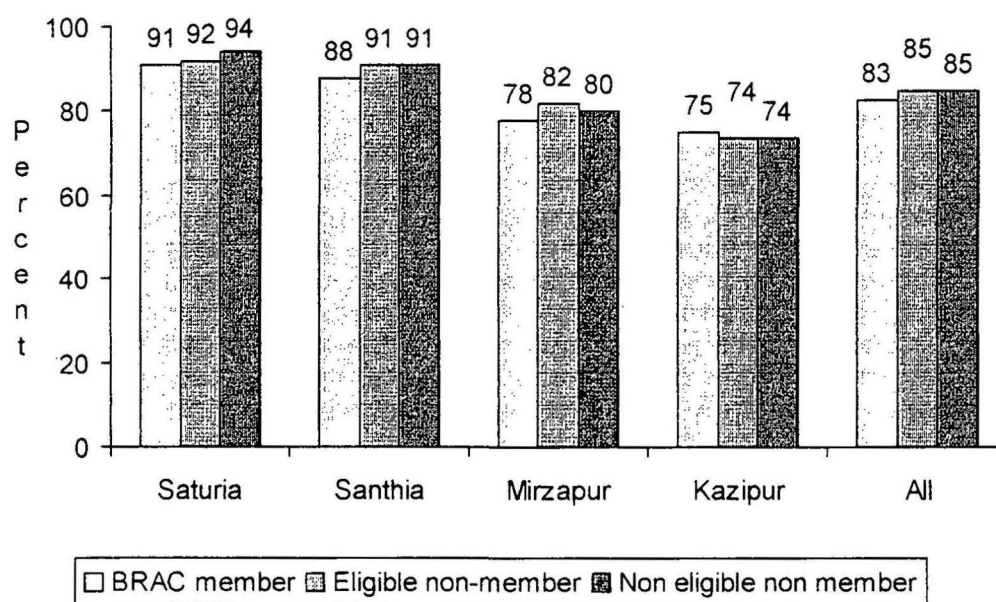


Figure 2 shows wide variation in immunisation coverage in different areas. The percentage of immunization coverage was as low as 75% in Kazipur, while it was 91-94% in Satoria. This difference was statistically significant ( $p < 0.001$ ). The reason for relatively lower coverage in Kazipur needs to be investigated.

## **Discussion**

The study revealed that the overall immunization coverage rate in the study villages was 81% compared to the national average of 90%. The vaccination coverage in Bangladesh is always found to be the lowest for measles. In the present study, we also found lowest measles vaccination coverage compared to other vaccines. Insufficient knowledge, lack of understanding and negligence are responsible for this. The campaign programme for immunization should be strengthened in this respect.

It was observed in the present study that about 57% of the children had vaccine cards. But the vaccination coverage was much higher ( $>80\%$ ). This shows that the households were not very serious about the importance of vaccination cards, although card retention had no significant association with immunization coverage. In any case, more emphasis should be given to the mothers about card retention, which would help immunization fully (8).

The immunization coverage was lowest in Kazipur (75%), compared to other study areas, even among BRAC member households. This should be well looked into.

Another finding was that even among BRAC member households, higher number of male than female children were not immunized at all, while the reverse was the case in the non-member households.

The most important finding was that the full immunization coverage was significantly less in BRAC member households than in non-member households. It needs to be investigated why this should happen for households under BRAC membership.

## References

1. Huq, M. Near miracle in Bangladesh: Dhaka. University Press limited. 1991.
2. Koenig, MA, Khan MA, Wojtyniak, B et al: "Measles vaccination reduces childhood mortality in rural Bangladesh." In Huq (eds), Near miracle in Bangladesh. Dhaka: University Press Limited. 1991.
3. Foster, SO; "Immunizable and respiratory diseases and child mortality". Population and Development Review. 1984, 10:119-40.
4. World Health Organization: Global Programme on vaccines and Immunization information system. Geneva: WHO, 1995.
5. EPI Directorate of Health Services: Findings of the 1995 National coverage Survey. Dhaka: Expanded Programme on Immunization, Directorate Health Services, and Government of Bangladesh.
6. Ministry of Health and Family Welfare. 1996 Reaching the People: Essential Services for Maternal and Child Survival and Family Planning. Dhaka: Ministry of Health and Family Welfare. 1995.
7. Baqui. A.H.Q. Nahar, S Amin A, et al: Epidemiology and causes of death. Second Annual Scientific Conference Programme and Abstracts. Dhaka: International Centre for Diarrhoeal Disease Research, Bangladesh (ICDD, B). 1993.
8. Bangladesh Demographic and Health Survey: Extended Analysis. 1995/96, 158-179.
9. Executive report. Needs assessment study of field workers involved in the Expanded Programme on Immunization: Dhaka: DHS, 1995.