

**Immunization coverage in BRAC member and non-member
households: evidence from Matlab, Bangladesh**

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Table of Contents

Introduction	1
Materials and Methods	2
Results	3
Discussion	4
References	7
Tables	9

Executive Summary

Background BRAC's RDP (Rural Development Programme) targets the poorest of the poor with special emphasis on improving the health and socioeconomic condition of women and children. It is hypothesized that BRAC's economic and non-economic inputs (like preventive health and nutrition intervention) through Essential Health Care (EHC) package will influence the health-seeking behaviour of the participant households with respect to accessing available immunization facilities for children. This paper attempts to explore the effect of BRAC's RDP-EHC interventions on changes in immunization coverage of the beneficiary households.

Methods Data were collected during Aug.-Dec. '95 from 14 villages out of 60 baseline villages surveyed in 1992. Information on immunization was collected from a sub-set of the total households (500 from each cell) by interviewing mothers with children between 12-23 months. The villages are divided into four research cells according to the presence of BRAC and ICDDR,B's MCH-FP programme: villages with both programmes, villages with either of the programmes and villages with neither of the programme present. In all the villages, demographic data are routinely collected by the Demographic Surveillance System (DSS) of ICDDR,B. In 7 villages, ICDDR,B has MCH-FP interventions which delivers comprehensive maternal, child health and family planning services to the community.

Results In all, 324 children of 12-23 months were included in the study. The access (DPT1) and coverage (OPV3) of immunization of these children were found to be more in the MCH-FP programme area, and also, less among BRAC-member households compared to non-member households. A similar trend with respect to immunization status is seen in case of the study children. Greater proportion of children from MCH-FP area were completely immunized compared to non MCH-FP area and the proportion completely immunized was less among BRAC member households compared to the non-member households, either eligible or non-eligible. A comparison of access and coverage of immunization in 1995 with that of 1992 for the same age group of children and villages was done. It is interesting to note that the increase in access and coverage

Introduction

In Bangladesh, Children under five make up less than 19% of the population but account for 57% of total death (1). It is estimated that around one out of every five death is caused by an immunizable disease (2). In terms of cost, efficacy and efficiency, immunization presents one of the most important means to improve the health status of the whole population (3). It is seen as a basic approach for improving child survival and for promoting the healthy development of children in developing countries. Beginning '90s, there has been a gradual increase in immunization coverage in Bangladesh, reaching a peak in 1993 (88%), thanks to the Government's Expanded Programme on Immunization (EPI), which covers against six major childhood diseases (tuberculosis, diphtheria, pertussis, tetanus, polio, and measles). However, this cost-effective tool for child survival has started showing stagnation since then (4).

In recent times, emphasis has been put on the relevance of social science in understanding the health-seeking behaviour of the people, e.g., accessing available immunization facilities by different groups of people. Beside technical (e.g., maintaining 'cold chain') and organizational (e.g., regular holding of immunization clinics at a time and place convenient to the community) matters, a number of sociocultural factors as well as beliefs and attitudes of the recipient population have been associated with improving the coverage of immunization (5). The NGOs can play an important role in influencing these socioeconomic factors through its credit-based income generating and human capital development (non-formal education, preventive health, conscientization, skill training etc.) inputs.

Founded in 1972, BRAC is a large indigenous non-governmental organization involved in rural poverty alleviation. BRAC's RDP (Rural Development Programme) targets the poorest of the poor with special emphasis on improving the health and socioeconomic

condition of women and children. RDP's Essential Health Care component (EHC) promotes the use of safe water, sanitation and health and nutrition education in addition to immunization facilitation, family planning and basic curative services for some common diseases. Shasthya Sebika (SS) or the community health worker through household visits at regular interval (6) delivers these services.

This paper attempts to explore the effect of BRAC's development interventions on changes in immunization coverage of the beneficiary households. It is hypothesized that BRAC's economic and non-economic inputs (like preventive health and nutrition intervention) through EHC will influence the health-seeking behaviour of the participant households with respect to accessing available immunization facilities for children.

Materials and Methods

This study draws on data from the 1995 panel survey undertaken in the second phase of BRAC-ICDDR,B Joint Research Project in Matlab, Bangladesh. This research collaboration was established in 1992 to examine prospectively the pathways through which BRAC development intervention impacts on the health and well-being of the rural poor (7).

Data were collected during August '95-December '95 from 14 villages out of 60 baseline villages surveyed in 1992 (8). The villages are divided into four research cells according to the presence of BRAC and ICDDR,B's MCH-FP programme: villages with both programmes, villages with either of the programmes and villages with neither of the programme present. In all the villages, demographic data are routinely collected by the Demographic Surveillance System (DSS) of ICDDR,B. In 7 villages, ICDDR,B has MCH-FP interventions which delivers comprehensive maternal, child health and family planning services to the community. Household socioeconomic information was collected from

household head or any knowledgeable adult member of the family present at the time of survey. Information on immunization was collected from a sub-set of the total households (500 from each cell) by interviewing mothers with children between 12-23 months. This information was verified by asking whether injection was given in the specific site of the baby's body or any oral drops fed, as the case may be, and were cross-checked with children's Vaccination Cards where found. Immunization status of the study children was categorized into: 'complete', meaning those who received all doses of the six EPI vaccines; 'partial', referring to those who either did not currently receive all the doses of the vaccines or was a drop out; and 'nil' referring to those who did not receive any vaccine at any time. In Matlab, as any where in Bangladesh, complete vaccination schedule included: BCG at birth, three doses of DPT and OPV at monthly interval beginning from six weeks of birth and Measles vaccination at nine months. DPT3/OPV3 and measles vaccinations were taken as indicators of coverage in contrast to DPT1/OPV1, which indicates, access to vaccination. BRAC's EHC facilitates the GOB's EPI activities by educating, motivating and mobilizing parents for getting their children immunized, and co-ordination with both the health and family planning staff for holding EPI sessions at static and satellite clinics. Shasthya Sebikas mainly does this through regular household visits and health forum meetings.

Results

In all, 324 children of 12-23 months were included in the study. Table 1 shows the access (DPT1) and coverage (OPV3) of immunization of these children according to the presence of MCH-FP programme interventions in the households. In both areas, of those accessing the services, about 20 to 30% dropped out as evidenced from prevalence of DPT1 and OPV3. The coverage was more in the MCH-FP programme area, and also, the least among BRAC-member households compared to non-member households.

A similar trend with respect to immunization status is seen in case of the study children (Table 2). Greater proportion of children from MCH-FP area were completely immunized compared to non MCH-FP area and the proportion completely immunized was less among BRAC member households compared to the non-member households, either eligible or non-eligible. Some of the reasons stated by the mothers for non-compliance are: non-visit by health workers (38%), no body was available to take the child to the immunization centre (26%), and sickness of the child or care-giver etc. (36%).

Table 3 compares access and coverage of immunization in 1995 with that of 1992 for the same age group of children and villages. It is interesting to note that the increase in access and coverage of immunization over this period is more in comparison area than in the MCH-FP area. Also, the proportion of children who received all the six EPI vaccines increased slightly during this period in comparison area while this proportion decreased in the MCH-FP area.

Discussion

This study is part of a larger study done under BRAC-ICDDR,B Joint Research Project at Matlab to explore the effects of development interventions on the lives of the poor and the pathways through which such effects occur. In this study, we tried to compare the changes, if any, in access, coverage and immunization status of the children in the three categories of households: BRAC-member, eligible non-member and non-eligible households.

From the findings it is seen that, in the study population as a whole, the access and coverage of immunization in 1995 (DPT1 97.5% and OPV3 83%) increased from what it was in the 1992 baseline survey (DPT 90% and OPV3 76%). The access and coverage was more in MCH-FP areas compared to comparison areas. This is plausible because ICDDR,B operates a comprehensive maternal and child health interventions through its

MCH-FP programme. In a BRAC study, Kamal et al found a similar coverage in a more representative sample (75 villages from 10 districts of Bangladesh to represent country's different geographic terrain, socioeconomic enclaves and administrative divisions) done in the same year (8). This improvement in performance over this period sharply contrasts with a gradual decline in coverage nationally since 1993, from a peak of 88% in 1993 to only 58% in 1996 (4). This decline was also observed by Kamal et al in a re-survey done one year later (9). When the data is segregated according to the presence of MCH-FP programme, the increase in coverage was found to be mainly due to increase in coverage in the comparison area over this period. This is reflected in proportion completely immunized as well: the proportion of completely immunized children (12-23 months) decreased from 84% in 1992 to 74% in 1995 in the MCH-FP area while it increased slightly in the comparison area, from 62% in 1992 to 65% in 1995 (10). In the 1992 baseline, all BRAC-eligible households and 50% of the non-eligible households were included in the survey. On the other hand, in 1995 a sub-set of the households (500 from each research cell) irrespective of BRAC-membership status of the households were included. This should be kept in mind when interpreting the above results.

The second important finding to note is the fact that the proportion of both the coverage and the proportion completely immunized was less among BRAC eligible households (including BRAC-member households) compared to non-eligible households. This was the trend existing in 1992 baseline survey as well (10). Also, in both the areas, the dropout rates from BCG to measles and from DPT1 to OPV3 were found to be higher in BRAC member households compared to BRAC-eligible non-member households. In an earlier study, the above trends in dropout were noted for BRAC's erstwhile WHDP-EPI facilitation areas compared to comparison areas (11).

The EPI facilitation activity is occasionally constrained by the logistics of the EPI programme of the Government (4). Besides, taking a child to the immunization centre involves some 'opportunity cost' on the part of the parents. Either of the parents has to spare some time and money (if the distance to immunization centre requires transport) for this purpose. Also, frequency of contact with community health workers is important for compliance with lengthy immunization schedule. Attention should equally be given to the "demand side" factors as to the "supply side" factors for successful implementation and promotion of any preventive health campaign in a traditional society like that of Bangladesh. Here in comes the relevance of social science in medicine to understand why acceptance and use of available immunization services are not always upto the expectation or how best to improve acceptability, especially in certain sub-groups of population with specific socioeconomic and demographic characteristics, and health-belief system. These aspects need to be addressed by the RDP-EHC programme if coverage and compliance are to be increased and should form part of a comprehensive facilitation strategy. Special intensive interventions like that adopted for "tea-garden" and "haor" areas by BRAC's health programme may be considered (12). In conclusion, it can be said that a re-thinking of RDP-EHC strategy for EPI facilitation is needed to improve performance in case of its beneficiaries.

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Tables

Table 1: Immunization coverage of study children (12-23 months) by BRAC membership status of the households, Matlab 1995

a) In MCH-FP Programme area of ICDDR,B (ICDDR,B Only and ICDDR,B+BRAC Cells)

	Coverage %			All HHs
	BRAC member HHs	Non-member HHs		
		BRAC-eligible	BRAC non-eligible	
<i>BCG</i>	100.0	100.0	96.9	98.7
<i>DPT1</i>	100.0	100.0	98.4	99.4
<i>OPV3</i>	80.8	89.9	90.6	88.7
<i>Measles</i>	73.1	76.8	79.7	77.4
<i>N</i>	26	69	64	159

b) In non MCH-FP Programme area of ICDDR,B (BRAC only and Comparison Cells)

	Coverage %			All HHs
	BRAC member HHs	Non-member HHs		
		BRAC-eligible	BRAC non-eligible	
<i>BCG</i>	96.7	94.9	98.1	96.3
<i>DPT1</i>	96.7	96.2	94.5	95.7
<i>OPV3</i>	63.3	76.9	87.5	78.0
<i>Measles</i>	40.0	71.8	78.6	68.3
<i>N</i>	30	78	56	164

Table 2: Immunization status of study children (12-23 months) by BRAC membership status of the households, Matlab 1995

a) In MCH-FP Programme area of ICDDR,B (ICDDR,B Only and ICDDR,B+BRAC Cells)

	BRAC member HHs	Coverage %		All HHs
		BRAC-eligible	BRAC non-eligible	
Status of Immunization				
<i>Complete</i>	65.4	75.4	75.4	73.8
<i>Partial</i>	34.6	24.6	21.5	25.0
<i>Nil</i>	---	---	3.1	1.3
N	26	69	65	160

b) In non MCH-FP Programme area of ICDDR,B (BRAC only and Comparison Cells)

	BRAC member HHs	Coverage %		All HHs
		BRAC-eligible	BRAC non-eligible	
Status of Immunization				
<i>Complete</i>	36.7	65.4	78.6	64.6
<i>Partial</i>	60.0	33.3	19.6	33.5
<i>Nil</i>	3.3	1.3	1.8	1.8
N	30	78	56	164

Table 3: Comparison of coverage and status of immunization in children 12-23 months between 1992 and 1995 in MCH-FP programme area of ICDDR,B and Comparison (non MCH-FP) area, Matlab 1995

	MCH-FP Programme area		Comparison (non MCH-FP) area	
	1992 (n=352)	1995 (n=160)	1992 (n=295)	1995 (n=164)
<i>Coverage</i>				
BCG	97.2	98.7	79.7	96.3
DPT1	98.3	99.4	81.3	95.7
OPV3	92.1	88.7	59.4	78.0
Measles	85.8	77.4	54.7	68.3
<i>Status of Immunization</i>				
Completed all six vaccines	84.2	73.8	62.0	64.6

Note: In 1992, all BRAC-eligible households and 50% of BRAC non-eligible households were sampled. In 1995, a sub-set of households (500 from each cell) irrespective of BRAC eligibility status of the households were sampled.