

Morbidity prevalence and health care-seeking behaviour of BRAC member and
non-member households: evidences from Matlab, Bangladesh

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Executive Summary

Background Understanding the morbidity profile and health care-seeking behaviour of different socioeconomic strata of the community is important for planning and delivery of appropriate health services, especially for the poor. This paper attempts to explore the effects of the BRAC development interventions on changes in health care-seeking behaviour of the beneficiary households. It is hypothesized that BRAC's economic and non-economic inputs (like preventive health and nutrition intervention) through its comprehensive Rural Development Programme (RDP) will influence the health care-seeking behaviour of the participant households by reducing the proportion of those who currently go without treatment or seek spiritual healing or largely ineffective traditional medicine.

Methods The data used for the study comes from the BRAC-ICDDR,B Joint Research Project in Matlab for studying the pathways through which socioeconomic development impacts on the lives of the poor. A pre-tested structured questionnaire was administered to the household head or spouse or any knowledgeable adult member of the household present at the time of survey to collect information on demographic and socioeconomic characteristics, any illness occurring in the household and health care-seeking behaviour for the particular illness episode. The recall period was 15 days from the day of survey. In all, 3,687 households were surveyed of which 604 were BRAC member households and 1,658 were BRAC-eligible non-member households. The analysis was done in two stages: first, bivariate analysis is done to compare and contrast the morbidity prevalence and health care-seeking behaviour of BRAC member and non-member households. Then, a logistic regression was run to identify the predictors of specific types of health care-seeking behaviour of the study population.

Results Out of a total population of 18,774, 16% were found to have had any illness during past 15 days. Reported morbidity was found to be less among those from BRAC member households compared to eligible non-member households controlling for sociodemographic variables

($p < .001$). There was no significant difference in illness profile among the study households. One-fifth of the ill persons (20%) did not seek any treatment and another 6-8 per cent used only home remedies. Among all age and sex categories, a greater proportion of ill persons from BRAC member households were treated by qualified allopaths compared to those from eligible non-member households. It is interesting to note that treatment from 'quacks' (unqualified allopaths in drug stores) was more frequently sought by BRAC member households while treatment from para-professionals was more frequently sought by eligible non-member households. Literacy of household head appears to have a favourable influence on seeking health care of any sort (the proportion seeking no treatment dropped from 23% to 17%). Treatment by qualified allopaths is more frequently sought by BRAC member households inside embankment. The receipt of MCH-FP inputs by the households appeared to greatly increase the proportion seeking health-care of any sort (the proportion seeking no treatment dropped from 27% to 16%) as well as seeking health-care from para-professionals. The presence of a gender dimension in the findings is too obvious. Not only the females of reproductive ages were found to suffer more from the burden of illness compared to males, proportionately they were also more among those for whom no treatment was sought. They were found to be proportionately less treated by qualified allopaths and more by traditional healers or homeopaths

From the results of logistic regression, BRAC membership status of the household, categories of illness and age, emerged as the most significant variables explaining health care-seeking behaviour of the study population.

Conclusion The importance of BRAC membership status of the household in influencing reported morbidity among the beneficiaries and shaping their health care-seeking behaviour is emphasised from this analysis. It is recommended that health-care behaviour modification should be undertaken by Essential Health Care (EHC) of RDP to discourage treatment seeking from unqualified allopaths and faith healers and reduce gender discrimination in seeking health care.

Introduction

Understanding the morbidity profile and health care-seeking behaviour in different socioeconomic strata of the community is important for planning and delivery of appropriate health services, especially for the poor. Morbidity may be defined as the attributes of sickness like illness, disability, handicap and other compromised states of physical, social and mental well-being. Self-perceived morbidity refers to measures that are perceived and reported by an individual in response to inquiries regarding illness or symptoms over a defined time period. It is a function of both the burden of pathology and the individual's social and cultural context. This most common form of morbidity data in the developing world may be biased by factors like individual knowledge and experience, personal predisposition in the perception of illness and its social acceptance, somatization and conscious misreporting of illness to achieve other goals. To characterize a full range of morbidity, measuring both self-perceived and observed morbidity is advocated. Measures of self-perceived morbidity is important for three reasons: perceived illness gives an indication of the burden of disease in the community; second, only through the individual can we learn about the true burden of pain and suffering and third, over a short period of time sudden changes in self-perceived morbidity may reflect changes in the burden of pathology and thus may be an useful monitoring tool (1).

Health care-seeking behaviour is any activity undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy (2). Studies have shown it to be erroneous to assume that symptoms of disease are always identified in health terms and the recognition of symptoms will necessarily result in seeking health care of the form that scientific medicine thinks is most appropriate. Once the symptoms are recognized the choice of therapy depends upon a number of factors. In addition to availability and accessibility of health care services, this choice is influenced by pre-existing lay health beliefs about illness causation and the 'explanatory model' offered for that particular episode of illness (3-4).

In a medically pluralistic society like Bangladesh, people who are not helped by home remedies after becoming ill, make choices about whom to consult in the 'popular', 'folk' or 'professional' sector for further help (5). According to Zola, the decision to consult a doctor may be related to ~~sociocultural and behavioural factors, rather than the severity of illness (6).~~ In a study in rural Mexico it was found that people's perception of the gravity of the illness, past knowledge of the illness and its remedy, and the faith in the efficacy of the various therapies were some of the factors which helped in making the initial choice (7). People in less developed areas of the world tend to distinguish the kinds of illnesses that can be cured by the physician from those that will respond only to the therapy of indigenous healers. Usually 'modern' medicine is used for critical acute conditions while patients are inclined to go to indigenous healers for the treatment of chronic incapacitating conditions. In a study in Mali on health seeking behaviour (of 179 households over a period of six months) it was found that in conditions like fever, diarrhoea and acute illnesses, cosmopolitan (modern) medicine was sought (8). On the other hand, for genitourinary diseases thought to be of spiritual origin, traditional (indigenous) methods were followed. Use of indigenous medicine in these illnesses was unrelated to family's socioeconomic, hygienic or educational level. In another study done to examine the social dimensions of the health behaviour of rural women, researchers conducted focus group discussions with women and men in three villages of Nigeria (9). They found that rural women chose only traditional (indigenous) healers to cure diseases thought to be caused by supernatural forces (e.g., convulsions, insanity, snake-bites etc.) and biomedical healers to treat diseases caused by natural factors (e.g., fever, anaemia, dysentery, appendicitis, hernia etc.). Also, when the women perceived medical services to be beneficial neither distance, lack of transportation, and poor quality care nor unsympathetic staff would prevent them from using the particular treatment. The prevalence of indigenous health beliefs about the causes of illness have not prevented the use of modern medicine where its effectiveness has been shown.

Studies done on health care providers of rural Bangladesh found 'modern' or allopathic medicine practiced by qualified and non-qualified persons to be most popular. This is also illustrated by the

number of allopathic drug stores even in small localities. Traditional practitioners of ayurvedic, unani and herbal medicine including faith healers and home remedies appear to stand second. In these studies a declining role of homeopathy in rural Bangladesh was noted. In fact, practitioners who considered themselves homeopaths also prescribed allopathic medicine quite frequently because that was more in demand and led to better income (10-14). For people who utilize both 'modern' and 'traditional' medicine, the type of illness has an influence on the choice made. Some

people consider medicine better for treatment of symptoms than eliminating the cause, especially if it is thought to be supernatural. Feldman S. found that a number of villagers noted homeopathy and kabiraji to be slower treatments, whose cure is relatively permanent while allopathic treatment is quick but not permanent (11). It is said that this is why the former are often used by children and women. Men, on the other hand, are not assumed to tolerate sickness as well as women and are thought to require quick remedy by seeking allopathic treatment. In Ashraf et al's study, it was found that homeopathy was preferred for children, 'folk' or 'traditional' medicine for female diseases and bad air, and allopathy for RTI and dysentery (10).

The strong influence of socioeconomic factors on health is well documented in the literature (15). Non-government development organisations like BRAC are trying to improve the health status of the poor people by comprehensive development interventions aimed to uplift the socioeconomic condition of the poor. This paper attempts to explore the effect of BRAC interventions on changes in health care-seeking behaviour of the beneficiary households. It is hypothesized that BRAC's economic and non-economic inputs (including preventive health) through its comprehensive Rural Development Programme (RDP) will influence the health care-seeking behaviour of the participant households by reducing the proportion of those who currently go without treatment or seek spiritual healing or self-educated practitioners of traditional medicine. This is expected to guide the policy makers in designing effective health care programmes for the rational management of illness episodes and thereby contribute to their socioeconomic development.

Materials and methods

The BRAC-ICDDR,B Joint Research Project

Founded in 1972, BRAC is a large indigenous non-governmental organization involved in rural poverty alleviation. BRAC's RDP targets the poorest of the poor with special emphasis on improving the health and socioeconomic condition of women and children. RDP through its 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. These services are delivered by Shasthya Sebika (SS) or the community health worker through household visits at regular intervals (16).

In 1992, BRAC extended RDP activities including micro-credit and non-formal education to 100 villages of Matlab thana where the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR, B) has been operating a Demographic Surveillance System (DSS) since the early 1960s. A research collaboration between BRAC and ICDDR, B was established to examine prospectively the relationship between socioeconomic development and health and well-being of the rural poor (17). A baseline survey was carried out in 1992 in 60 villages covering about 12,000 households to assess existing differences in the population prior to BRAC's RDP interventions and also elucidate the socioeconomic and environmental context within which the programme would operate (18). Exploratory and qualitative studies were also undertaken to map the various pathways by which BRAC RDP inputs might influence health behaviours and outcomes.

The Data

Informed by the baseline and the various exploratory and qualitative studies in the first phase, three seasonal rounds of panel data were collected in phase II from a sub-sample of 14 of the 60 baseline survey villages during April '95 to April '96 (19). A Pre-tested structured questionnaire was administered to the household head or spouse or any knowledgeable adult member of the

households present at the time of survey by experienced male and female interviewers to collect information on demographic and socioeconomic characteristics, prevalence of illness episodes and health care-seeking behaviour of the household members. In all, 3,687 households were surveyed of which 608 were BRAC member households and 1,659 were BRAC-eligible non-member households. The BRAC non-eligible households were excluded from analysis. Households ~~possessing less than 0.5 acre of land and selling manual labour for at least 100 days a year are~~ considered eligible to be included in BRAC's rural development programme. These households rank among the poorest of the poor. Households that are not eligible for BRAC's RDP are comparatively better-off socioeconomically, and include rural elite as well.

Categories of illnesses (occurring within last 15 days) were deduced from lay reporting of symptoms by the respondent (wife of the household head or any knowledgeable adult member of the family in her absence, mother in case of children, or the ill person her/himself when present) using a comprehensive coding system and were cross-checked by a physician. When there was more than one episode of illness, data were collected with reference to the illness which was the longest in duration. Data on types of health-care were obtained by asking the respondent about treatment measures undertaken first either at home or outside home and grouped into five categories. The category 'home remedies' comprises analgesic & anti-pyretic tablets, oral rehydration solutions (ORS), antacids etc. commonly available in rural households. All kinds of faith healing and traditional systems of medicine like kabiraji/hakimi including homeopathy is included in the 'traditional' group.. 'Para-professionals' consists of Palli Chikitsoks (village practitioners), Medical Assistants and different types of government and non-government community health workers with some formal institutional training who treat mainly with allopathic drugs. 'unqualified allopaths' refer to the dispensers at medicine retail shops and others who practice allopathic medicine but do not have any formal training. These 'unqualified allopaths' or quacks, as they are usually called, treat mainly infectious diseases rather indiscriminately with antibiotics and steroids. Medicine is given through a process of negotiation depending upon the economic condition of the patient or relatives. Usually they do not give full courses of medicine. Treatment may, in fact, be harmful to health (10). The 'qualified allopaths' included professionals

like MBBS, LMF or “National” doctors.

Literacy is enumerated in terms of ability to read, write or sign. Those who could both read and write are taken as literate. Occupation of the household head is defined as the activity in which the concerned individual spends major part of her/his time in a working day. Accordingly, households are categorised either as a labour-selling or a non labour-selling depending upon whether the household head is engaged in wage-labour or not.

A medium scale embankment on the banks of the river Meghna and Dhonagoda was constructed between 1982 and 1989 for flood control, drainage and irrigation. Study villages under DSS area fall both within and outside the embankment and accordingly, proportionate households from both side of the embankment were sampled.

Analysis plan

The analysis was done in two stages: first, bivariate analysis was done to study the morbidity prevalence and health care-seeking behaviour between BRAC member and non-member households controlling for age, sex, literacy and occupation of household head, location of the household, presence of MCH-FP programme of ICDDR,B and length and depth of BRAC membership. Then a logistic regression was run to see the influence of these factors on health care-seeking behaviour with respect to any type of treatment sought or semi-qualified and qualified ‘allopathic’ medicine. The statistical software package SPSS 7.5 for Windows is used for analysis.

Results

a) Demographic characteristics of the study population

Around 40% of the study population was under the age of 15 years. Proportionately, there were more females than males in the 15 to 49 age group (48% Vs 45%) while there were more males

than females (5% Vs 4.5%) above the age of 65 years. The majority of the males (60%) can write and/or read compared to only 47% of the females who can do so. Only 24% of the males and 14% females have accessed any kind of formal schooling (5+ years). A substantive proportion of the study population (39% of the males and 33% of the females) are currently student. Of the remainings, the majority of males (35%) earned their living from wage-labour and self-employment while majority of the females (95%) were engaged in household chores. Agriculture (either in own or other's land) and service petty trade were the second most important source of livelihood for the males (24%) and females (3%) respectively (20).

b) Morbidity Prevalence

Prevalence of morbidity during the last 15 days (including current illness) among study household members is shown in Table 1. As can be seen, the prevalence of illness in this community during the reference period was high (15 to 17%). Morbidity was found to be less among those from BRAC member households compared to eligible non-member households ($p < .001$). This trend is consistently seen between these two categories of households even when the age and sex of the ill persons, household head's literacy and occupation, location of the household with respect to embankment and presence of MCH-FP programme of ICDDR,B in the village are controlled (Tables 2-4).

c) Health care-seeking behaviour

There was no significant difference in illness profile among the three types of study households. The three most frequently reported illnesses were fever of various types and duration, gastrointestinal diseases including diarrhoea and dysentery, and pain/aches of various types in different parts of the body (Table 5).

Tables 6a and 6b shows health care-seeking behaviour according to age and sex respectively.

Among all age and sex categories, a greater proportion of ill persons from BRAC member households were treated by qualified allopaths compared to those from eligible non-member households. It is interesting to note that treatment from 'quacks' (unqualified allopaths in drug stores) was more frequently sought by BRAC member households while treatment from para-professionals was more frequently sought by eligible non-member households. These trend are universally seen even when the effects of household head's literacy, occupation, location of the household with respect to embankment, and presence of MCH-FP programme of ICDDR,B in the villages are controlled (Tables 7-8).

Literacy of household head appears to have a favourable influence on seeking health care of any sort (the proportion of no treatment dropped from around 23% to around 17%) as well as improvement in seeking treatment from qualified allopaths. On the other hand, labour-selling households lagged behind the non labour-selling households with respect to seeking health-care of any sort as well as qualified allopaths and para-professionals (Tables 7a and b.).

Treatment by qualified allopaths is more frequently sought by BRAC member households inside the embankment. Interestingly, the proportion without treatment was more in case of BRAC member households outside embankment compared to those from inside embankment. The presence of the MCH-FP programme appeared to greatly increase the proportion in seeking health-care of any sort (the proportion of no treatment dropped from around 27% to around 16%) as well as seeking health-care from para-professionals. However, it did not influence the use of qualified allopaths.

Table 9 presents the results of logistic regression for predicting either seeking any health-care at all or seeking health-care from para-professionals or qualified allopaths. For predicting whether any health-care was sought, any type of health-care sought is coded "1" and no health-care sought as "0"; for predicting whether health-care from para-professionals was sought, para-professionals are

coded "1" as representing semi-qualified allopaths and all others as "0"; and lastly, for predicting whether health-care from qualified allopaths was sought, qualified allopaths are coded as "1" and all others as "0". The predictors for all the above three are: age and sex of the ill person, size and labour-selling status of the household, household head's literacy, location of the ill person's household with respect to embankment, whether the household is receiving MCH-FP programme inputs, and lastly, BRAC membership status of the household. These variables were found to influence health-care seeking behaviour significantly in the bi-variate analyses. Two more variables, sex of the household head and categories of illness, were introduced in the final model based upon prior knowledge regarding their influence on health care-seeking behaviour and their contribution to reduction of log likelihood.

The probability of seeking any type of health-care at all was found to be significantly predicted by age (the probability was more if the patient was in the 16-30 age group), sex (the probability was more if the patient was male), literacy of household head (the probability was more for patients with a literate household head), and receipt of MCH-FP programme inputs by the households (the probability was more for those households receiving MCH-FP inputs). Also, certain categories of illness such as Eye, Skin and ENT diseases, appeared to predict seeking of health-care more compared to ordinary fever.

When predicting health-care from paraprofessionals only, the effects of sex, household's literacy and MCH-FP inputs were removed but BRAC membership status, in addition to age and categories of illness, emerged as significant variable. On the other hand, in predicting health-care from qualified allopaths, the significant predictors for seeking any type of health-care (excepting MCH-FP inputs) were also found to significantly predict health-care from qualified allopaths; in addition, BRAC membership status and location of the household also emerged as significant variables. Thus the final model appeared to best predict seeking health-care from qualified allopaths compared to the other two categories.

From the model, BRAC membership status of the household, categories of illness and age to a certain extent, emerged as the most significant variables explaining health care-seeking behaviour of the ill persons. The presence of MCH-FP inputs in the households appeared to be a significant predictor of seeking any health-care, but not necessarily allopathic medicine. However, BRAC membership was significant in predicting semi-qualified and qualified allopathic care, though in the opposite direction. Sex-differential was important for either seeking any health-care at all or seeking health-care from qualified allopaths (the probability of either was more for the males). Again, location of the household outside embankment was found to be significant only for the latter above (probability more for those from households outside embankment).

Discussion

This paper attempts to explore the effect of BRAC's development interventions in the study area on morbidity prevalence and health care-seeking behaviour of the beneficiary households. We have tried to improve the reliability and validity of morbidity reporting by various methods: use of culturally sensitive language and wording of the interview instruments, limiting recall period to 15 days; deriving disease entities from lay reporting of the symptom complex by the respondent using a comprehensive pre-tested coding list and a re-survey of 5% of the households within 3 days by an independent quality control team. Moreover, the principal focus of the study was to elicit health care-seeking behaviour of the respondents, and the illness episodes only served as the referral point from where we proceeded.

The overall morbidity for the study population is similar to the national figure for the rural population (21). It is interesting to note the consistently lower morbidity prevalence in BRAC member households compared to non-member households even when the effects of socio-demographic factors were controlled for. This decrease in morbidity may be due to improved household economic condition resulting from BRAC's income-generating inputs like credit, skill development training etc. flowing into these households. This is manifested by increased land and non-land productive assets, livestock, savings and monthly food-expenditure by the same BRAC

member households compared to their non-member counter-parts (22). That there was no difference in illness profile between BRAC member and non-member households points to the common environment they shared. Major prevalent illnesses in the area such as fever, diarrhoeal diseases etc. are all related to environmental factors which is consistent with findings from elsewhere (23).

One-fifth of the ill persons (20%) did not seek any treatment and another 6-8 per cent only home remedies. Two conditions may be postulated: either they weren't sick enough or they weren't able to access health care of any sort, for one reason or another. The proportion of ill persons who did not seek any treatment was more among BRAC member households. This may be related to the worse poverty condition of these households compared to eligible non-member households which motivated them to join BRAC in the first instance. From an analysis of economic conditions of the same households, it was found that the proportion of poor based on calorie consumption, both moderate (< 2112 calories per day) and hardcore (< 1805 calories per day), was more among BRAC member households (24). On the other hand, increased use of qualified allopaths by the BRAC member households compared to others also points to the increased capacity of some of these households to meet the costs of this type of treatment (22). Thus, a kind of polarisation is seen with respect to accessing types of health-care by BRAC member households. This may be due to both increased proportion of household income available for expenditure on health and also, indirect effect of health education and other EHC inputs of RDP which motivated them to seek 'modern medicine'. With the development of health awareness resulting from interactions with the EHC, it is expected that the BRAC member households will increasingly use para-professionals who provide rational allopathic medicine at a much cheaper price than the unqualified allopaths (more commonly called as 'quacks' by the villagers) or the costly qualified allopaths. But this was not the case. Rather an increased use of 'quacks' by the BRAC member households compared to para-professionals was found. This gradually shifting trend towards seeking health-care from allopathic practitioners, less of 'qualified/semi-qualified' and more of 'unqualified', pretty well reflects the current scenario in rural Bangladesh and is of concern because the quality of health-care provided by the unqualified allopaths is questionable (10). One possible explanation

of this apparent discrepancy is: since BRAC works to improve the condition of its beneficiaries, it may be assumed by the para-professionals---a part of the formal sector of 'modern' medicine and mainly of government origin--- that their health concerns will also be taken care of by BRAC and that they need not be given much attention. Further in-depth studies are needed to look into this puzzling matter.

The presence of a gender dimension in the findings is obvious. Females of reproductive ages were found to suffer more from the burden of illness than males, but also more sought less treatment than males. Women often do not get the opportunity to seek health care unless it is related to their socially defined roles of wife and mother and most often not even then (25). They were proportionately less treated by qualified allopaths and more by traditional healers or homeopaths which may reflect the importance given to women's health in the community. Alternatively, these healers may be more closer to the community, requiring less travel and may be more sympathetic to women's problems. This corroborates the findings of Ashraf et al (10) and Feldman et al. (11) that 'slower' homeopathic, traditional and 'folk' medicine are more frequently used for women and children and the 'quicker' allopathic for men in rural Bangladesh.

In conclusion, it can be said that changes resulting from credit based income generating activities and skill training as well as preventive health and nutrition intervention are found to reduce illness prevalence in the beneficiary households and some questionable changes towards using 'modern' medicine. It is recommended that health-care behaviour modification by preventive health interventions should be undertaken to discourage treatment seeking from unqualified allopaths and faith healers and reduce gender discrimination in seeking health care.

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Tables

Table 1 : Illness during last 15 days by sex and BRAC membership status of the household, Matlab 1995 (%)

Variables	% Individuals from					
	BRAC member HHs	Non-member HHs		All HHs	X ²	
		BRAC eligible	BRAC non-eligible		(2) vs (3)	(2) vs (4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>% of study population reported to have had illness during last 15 days</i>						
Male	12.5	20.4	12.0	15.4	P<.001	NS
N	1513	3650	3830	8993		
Female	13.3	20.3	14.1	16.6	P<.001	NS
N	1634	3845	4002	9481		

Table 2a: Illness during last 15 days by BRAC membership status of HHs and age, Matlab 1995 (%)

	Age (yrs)									
	≤15		16-30		31-45		46-60		>60	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
<i>% of study population reported to have had illness during last 15 days</i>	13.9	22.2	8.9	13.8	11.6	20.8	17.3	23.5	17.6	25.1
N	1439	3363	665	1674	584	1296	306	763	153	399
Significance (X²)	p<.001		p<.01		p<.001		p<.05		ns	

Table 2b: Illness during last 15 days by BRAC membership status of HHs and sex, Matlab 1995 (%)

	Male		Female	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
<i>% of study population reported to have had illness during last 15 days</i>	12.5	20.4	13.3	20.3
N	1513	3650	1634	3845
Significance (X²)	p<.001		p<.001	

Table 3a: Illness during last 15 days by BRAC membership status of HHs, HHH's literacy status and sex, Matlab 1995 (%)

Literacy of HHH>	Male				Female			
	Illiterate		Literate		Illiterate		Literate	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
% of study population reported to have had illness during last 15 days	12.6	20.2	11.2	21.1	13.4	19.5	13.4	22.5
N	944	2581	565	1057	984	2757	644	1072
Significance (χ^2)	p<.001		p<.001		p<.001		p<.001	

Table 3b: Illness during last 15 days by BRAC membership status of the household, HHH's occupation and sex, Matlab 1995 (%)

Labour selling status of the HHH>	Male				Female			
	Labour-selling HHH		non-labour selling HHH		Labour-selling HHH		non-labour selling HHH	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
% of study population reported to have had illness during last 15 days	11.4	21.7	12.9	19.8	13.8	19.0	13.2	20.9
N	413	1218	1100	2429	420	1200	1214	2643
Significance (χ^2)	p<.001		p<.001		p<.001		p<.001	

Table 4a: Illness during last 15 days by BRAC membership status of the household, residence in embankment and sex, Matlab 1995 (%)

	Male				Female			
	Inside embankment		Outside embankment		Inside embankment		Outside embankment	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
<i>% of study population reported to have had illness during last 15 days</i>	13.6	19.2	11.7	21.7	13.8	16.3	13.0	24.2
N	633	1849	880	1801	652	1884	982	1961
Significance (χ^2)	p<.01		p<.001		ns		p<.001	

Table 4b: Illness during last 15 days by BRAC membership status of the household, presence of ICDDR,B's MCH-FP programme and sex, Matlab 1995 (%)

	Male				Female			
	MCH-FP		Non-MCH-FP		MCH-FP		Non-MCH-FP	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
<i>% of study population reported to have had illness during last 15 days</i>	13.1	23.2	11.9	17.8	12.8	24.6	13.9	16.2
N	781	1763	732	1887	823	1907	811	1938
Significance (χ^2)	p<.001		p<.001		p<.001		ns	

Table 5 : Types of illness among study population during last 15 days by BRAC membership status of the household, Matlab 1995 (%)

Variables	% Individuals from					X ²	
	BRAC member HHs	Non-member HHs		All HHs	(2) vs (3)		(2) vs (4)
		BRAC Eligible	BRAC Non-eligible				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Types of illness*							
Fever	45.2	45.5	39.9	43.5			
Gastrointestinal diseases	20.9	20.7	21.5	21.0	NS	NS	
Pain/aches	14.3	11.5	12.9	12.3			
Respiratory diseases	5.4	5.7	5.9	5.7			
Skin/Eye/ENT diseases	3.7	4.1	2.5	3.5			
Others	10.6	12.6	17.4	14.0			
	407	1527	1025	2958			

*categories of illness were deduced from lay reporting of symptoms using a comprehensive coding system and cross-checked by physician (First author)

Table 6a: Health care-seeking behaviour by BRAC membership status of households and age, Matlab 1995 (%)

	Age (yrs)									
	≤15		16-30		31-45		46-60		>60	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
Health-care sought										
<i>None (no treatment)</i>	25.0	20.9	17.2	15.6	19.1	17.3	22.6	21.3	18.5	20.2
<i>Home remedies/ traditional</i>	25.0	22.5	17.2	11.7	16.2	7.9	11.3	7.9	18.5	7.1
<i>Unqualified allopaths</i>	16.0	13.0	27.6	22.5	30.9	15.0	47.2	18.0	25.9	26.3
<i>Para-professionals**</i>	24.0	38.7	20.7	44.2	19.1	48.5	7.5	43.3	25.9	40.4
<i>Qualified allopaths</i>	10.0	4.8	17.2	6.1	14.7	11.3	11.3	9.6	11.1	6.1
N	200	746	58	231	68	266	53	178	27	99
Significance (X²)	p<.01		p<.01		p<.001		p<.001		ns	

Table 6b: Health care-seeking behaviour by BRAC membership status of households and sex, Matlab 1995 (%)

	Male		Female	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
Health-care sought				
<i>None (no treatment)</i>	18.5	15.3	25.3	23.4
<i>Home remedies/ traditional*</i>	21.7	17.2	18.9	14.0
<i>Unqualified allopaths</i>	24.9	17.5	24.9	15.1
<i>Para-professionals**</i>	23.8	41.2	18.0	42.6
<i>Qualified allopaths</i>	11.1	8.7	12.9	4.9
N	189	743	217	777
Significance (X²)	p<.001		p<.001	

*Ayurvedic, Unani, herbalists, faith-healers etc. including homeopaths **Palli Chikitsok (trained village doctors), Medical Assistants, community health workers of ICDDR,B, BRAC and others who have some formal training in allopathic medicine

Table 7a: Health care-seeking behaviour by BRAC membership status of households, literacy of household head, Matlab 1995 (%)

	Literacy of Household Head			
	Illiterate		Literate	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
Health-care sought				
<i>None (no treatment)</i>	24.7	20.7	17.5	16.8
<i>Home remedies traditional*</i>	21.1	14.6	18.8	17.7
<i>Unqualified allopaths</i>	22.7	15.7	28.6	17.1
<i>Para-professionals**</i>	19.9	43.3	22.1	39.1
<i>Qualified allopaths</i>	11.6	5.7	13.0	9.3
N	251	1054	154	463
Significance (X²)	p<.001		p<.001	

*Ayurvedic, Unani, herbalists, faith-healers etc. including homeopaths **Palli Chikitsok (trained village doctors), Medical Assistants, community health workers of ICDDR,B, BRAC and others who have some formal training in allopathic medicine

Table 7b: Health care seeking behaviour by BRAC membership status of households and occupation of household head, Matlab 1995 (%)

	Labour selling status of the HH>			
	Labour-selling HH		non-abour selling HH	
	BRAC member HHs	BRAC-eligible non-member HHs	BRAC member HHs	BRAC-eligible non-member HHs
Health-care sought				
<i>None (no treatment)</i>	31.4	18.7	18.9	19.8
<i>Home remedies traditional*</i>	12.4	15.3	22.9	15.7
<i>Unqualified allopaths</i>	30.5	15.5	22.9	16.6
<i>Para-professionals**</i>	15.2	44.8	22.6	40.6
<i>Qualified allopaths</i>	10.5	5.7	12.6	7.3
N	105	491	301	1028
Significance (X²)	p<.001		p<.001	

*Ayurvedic, Unani, herbalists, faith-healers etc. including homeopaths **Palli Chikitsok (trained village doctors), Medical Assistants, community health workers of ICDDR,B, BRAC and others who have some formal training in allopathic medicine

Table 9: Logistic estimates and odds ratios of seeking different types of health-care in BRAC-eligible households, Matlab 1995.

	Types of health-care					
	Any type		Para-professionals		Qualified allopaths	
	Estimate	Odds ratio	Estimate	Odds ratio	Estimate	Odds ratio
Table 8a: Health care-seeking behaviour by BRAC membership status and location of household, gender, marital status						
<i>Age (years)</i>						
≤15	0.00	1.00	0.00	1.00	0.00	1.00
16-30	0.52	1.69**	0.22	1.23	0.41	1.51
31-45	0.36	1.48*	0.37	1.45*	0.75	2.11**
46-60	0.15	1.16	0.10	1.10	0.43	1.53
60+	0.23	1.26	0.21	1.24	0.93	0.96
Health-care sought						
Sex						
None (no treatment)	18.2		23.7		16.3	
Female	0.003	1.00	16.1	0.00	20.0	1.00
Male	0.245	1.73**	10.0	-0.01	28.0	1.64*
Location of household						
Inside embankment	0.15	1.16	0.10	1.10	0.43	1.53
Outside embankment	0.23	1.26	0.21	1.24	0.93	0.96
BRAC membership						
BRAC member	0.15	1.16	0.10	1.10	0.43	1.53
BRAC-eligible non-member HHs	0.23	1.26	0.21	1.24	0.93	0.96
Significance (X ²)	-0.11	p<.0089	-0.07	0.93	p<.05	0.24
Table 8b: Health care-seeking behaviour by BRAC membership status of households, presence of ICDDR,B's MCH-FP programme and gender, Matlab 1995 (%)						
<i>Labour-selling status of HH</i>						
Non labour-selling HH	0.00	1.00	0.00	1.00	0.00	1.00
Labour-selling HH	-0.07	0.92	0.06	1.06	-0.29	0.75
Programme area						
MCH-FP						
BRAC membership status of HH						
BRAC member	0.00	1.00	0.00	1.00	0.00	1.00
BRAC-eligible non-member HHs	0.00	1.00	0.00	1.00	0.00	1.00
Health care sought						
None (no treatment)	-0.14	0.87	-1.06	0.35***	0.65	1.92***
Home remedies/traditional*	16.5		15.1	28.0	25.5	
Unqualified allopaths	20.4		16.3	20.0	14.6	
Inside embankment	0.00	1.00	0.00	1.00	0.00	1.00
Outside embankment	0.00	1.00	0.00	1.00	0.00	1.00
Para-professionals**	-0.05	0.95	-0.21	0.80	-0.43	0.62*
Qualified allopaths	12.1		7.1	12.0	6.4	
Presence of MCH-FP	206		877	200	643	
Significance (X ²)		p<.05			p<.05	
<i>Programme in the village</i>						
No	0.00	1.00	0.00	1.00	0.00	1.00
Yes	0.00	1.00	0.13	1.14	0.28	1.33
Categories of illness						
Fever	0.00	1.00	0.00	1.00	0.00	1.00
Gastrointestinal diseases	0.17	1.18	-0.63	0.53***	0.68	1.97**
Pain/aches	-0.37	0.69	-0.47	0.62**	0.84	2.31**
Respiratory diseases	-0.26	0.77	-0.73	0.59*	0.57	1.77
Skin/Eye/ENT	-0.99	0.37***	-1.02	0.34***	1.20	3.33***
Others	-0.38	0.68*	-0.88	0.41***	1.02	2.79***
-2log likelihood	1833.07		2418.32		995.103	
Model improvement	95.70***		132.48***		69.18***	

*p<.05; **p<.001;