Factors affecting mortality and disbursement of insurance benefits to female members of BRAC village organization

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Executive Summary

Introduction

BRAC has been implementing multifaceted programmes such as rural development programme, education programme, health and nutrition programme for poverty alleviation. The core of rural development programme is the formation of village organizations (VO). Through the VOs BRAC organizes the poor (BRAC members), and provide them with credit facility and other technical support.

Unlike developed countries, taking up life insurance policy is not very common in Bangladesh. In 1990, BRAC introduced a life insurance scheme for its VO members. At the death of any member BRAC pays Tk. 5000 for each claim from the interest fund of the micro finance programme. There are some eligibility of receiving the insurance claims; however, all members are entitled to the insurance. In 1998, 3,879 VO members died and the insurance claims of a total of Tk. 19,395,000 was paid to their nominees.

The main goals of this study were to find out the causes of death and mortality differentials of BRAC members and also to look at the settlement of insurance claims of BRAC members. To know the human health status, mortality is the key indicator. It is hardly found the mortality study among BRAC members (adult female). So Research and Evaluation Division (RED) took an initiative to study the BRAC members who died in 1998.

Before actual study a pilot survey was carried out in Tangail and Sylhet regions[a] during December 1999 - February 2000 and survey methods and tools were tested and finalised. Based on the learning from the pilot survey, RED therefore decided to conduct a cross-sectional sample survey.

The broad objective of this study was to assess the death rates of BRAC VO members in 1998 and also to provide the sociodemographic determinants of mortality and causes of

[a] Region constitutes of 12–20 BRAC areas which consists of 160 units each with 50 target households to form a village organization.

death of the members. This study also looked at the disbursement process against insurance claims; and the ways the money was used by beneficiaries.

Methods and materials

Study area and population

In 1999, BRAC implemented its programmes in 409 thanas of 61 districts of Bangladesh. In mid-1998, there were 2.5 million members in the village organizations (BRAC, 1999). Official records showed that in 1998, a total of 3879 female VO members aged 18–54 years died. These deceased VO female members constitute the study population.

Sampling technique

Three-stage cluster sampling design was used in this study. In the first stage 12 regions were randomly selected from 45 regions. In the second stage a total of 32 BRAC areas were randomly selected and in the final stage, 391 female members out of 413 deceased BRAC VO members, who died in 1998, were found in the AOs.

Data collection

The address of dead BRAC VO members (who died in 1998) and mid-year populations of BRAC VO members of 1998 were collected from the BRAC HO. Data were collected during 2 to 24 May 2000. The interviewers collected some selected information on the questionnaire at AO level and identified the deceased BRAC members' households with the assistance of local staff in each AO. The nearest relatives of all deceased members' households (who died in 1998) were interviewed by visiting 162 VOs. Data on socio-demographic variables of surviving BRAC VO members from "Second Impact Assessment Study of RDP, 1998" conducted by RED were also collected and reviewed for the comparison purpose.

Lay reporting of information concerning deaths

Verbal Autopsy technique was used to assess the causes of death. For most of the time in practice only a few significant words were written about the symptoms of disease

preceding the death. In some cases, the description was longer, unstructured and loaded with personal interpretation, and (inappropriate) medical terms.

Interpretation of cause of death and classification

The cause of death part of the questionnaire, once completed in the field, was taken to the HO and validated by a female medically-trained staff. Diagnosis was written in full based on the available information in the questionnaire. Coding and classification of the diseases were selected from a list of 97 possible codes (WHO, 1977).

Data processing and analysis

The questionnaires were edited and verified for completeness and consistency. Afterwards, the data were entered into computer by using the software FoxPro and were analysed using SAS (Statistical Analysis Software).

Limitations of the study

The causes of death and symptoms preceding death were investigated through face to face interview of the relatives of the deceased members by the non medical persons. For diagnosing main cause of death this has its known limitations. However, care was taken to overcome this by further checking the questionnaire by medically trained persons.

Key results

The crude death rate (CDR) of BRAC female members was higher (2.1 per 1000) than Bangladesh female death rate (1.14 per 1000) aged in between 15 to 54 years but is the same as found by ICDDR,B in Matlab. But the big discrepancy was found among the Hindu (3.8 per 1000) and Muslim (1.7 per 1000) mortality rate. The data suggest that the mortality rate is significantly lower among the married group (1.6 per 1000) as compared to other groups (3.9 per 1000).

The study reveals a clear inverse relationship between mortality and socioeconomic status among the BRAC members. But some unexpected results are found from this study, such as, mortality rate steeply declines with increasing the family size, and also declines with decreasing the household type. Another interesting finding emerged from this study that as the BRAC membership duration time increases, the mortality rate decreases, and the members with lifeskill training had lower mortality.

Nearly 17 percent of the members' causes of death were impossible to specify. The neoplasm was the main cause of death of BRAC members, which is very unexpected result. And direct obstetric complication was the second cause, cardiovascular diseases and gastrointestinal diseases were the third and fourth causes of deaths. The 25–29 years of age group had the highest proportion (54%) of deaths among all age groups. The pregnancy complication was nearly the same proportion as noncommunicable disease among the age group of 25–29 years.

Over 95 percent of the member's nominee received the insurance money. Data reveals that more than eighty percent received the insurance money after 3 months.

This study showed that more than forty percent of the deceased members' family expended the insurance money for only the member's purpose, and the other important purposes were: loan adjusted/repaid, asset purchase, family expenditure, distributed among relatives etc. It is interesting to note that only few deceased's insurance money

was used to adjust the other member's loan. About 1.8 percent nominees have needed extra money to sanction the insurance.

Recommendations

- It is necessary to investigate variation in between the deaths recorded at HO and deaths actually found at AOs level. And the record keeping system should be consistent.
- A death registration form (see a sample in Annex 2) for BRAC members can easily be maintained by AM at the time of death investigation
- Steps may be taken to maintain the record registers of savings, training and membership position at AOs level
- Reproductive health programme and communicable disease control programme had better be geared up for decreasing the mortality
- Steps may be taken to improve the knowledge on safe motherhood and to extent the health education programme among the BRAC members
- Disbursement of insurance benefits of BRAC members might be thought over through an indepth investigation

Introduction

Over the last two decades, the mortality levels in developing countries remained unacceptably high despite the development of increasingly sophisticated medical technology to combat diseases. In recent years, however, Bangladesh witnessed much improvement in mortality level, although the level is still high[1,6,7].

In Bangladesh, the female mortality rate (aged 15-54 years) was 1.14 per 1000 population[4]. The Demographic Surveillance System of ICDDR,B in Matlab showed a higher female mortality rate (aged 15-54 years) of 2.1 per 1000 in the population[7]. The adult female mortality rates (aged 15-54 years) were found to be 1.1 and 1.3 per 1000 population in the UK and US respectively (1990)[8]. The mortality rate for the same age group in 1990 was found to be approximately 0.8 per 1000 population in Hong Kong S.A.R. and 1.5 in Malaysia, (1990)[8]. In 1995 the adult female mortality rate (aged 15-50 years) was 4 per 1000 population in western Tanzania[9].

Evidence also suggests an inverse relationship between socio-economic status and mortality. The poor and other disadvantaged people were found to have a higher mortality than their affluent counterparts[10, 12, 14]. BRAC works for the poorest section of the Bangladesh community and for their social, economical and health improvement. It is thus of interest to examine the mortality experience of BRAC members. This paper reports on the mortality levels of BRAC members by using the records of a life insurance scheme implemented for them by BRAC. It also analyses the implementation of the insurance scheme.

BRAC's Insurance Scheme

BRAC was established in 1972 after the Liberation War. From the beginning, social mobilisation has been a key aspect of BRAC's poverty reduction strategy. Mobilising the poor through village organisation has been the basis of BRAC's interventions. But the nature of this mobilisation has evolved with the changing needs of programme participants and BRAC's growing capacity. Beginning with programmes targeting the basic needs of the poor, BRAC has sought to educate and mobilise poor women for poverty alleviation and empowerment. The three core programmes of BRAC are its Rural

Development Programme (RDP), Education Programme and the Health, Nutrition and Population Programme. Besides, it has its technical support services and a few revenue generating enterprises to help finance its development programme. BRAC covers all districts of the country, 90% upazilas (lowest administrative unit) and about 70% villages of Bangladesh through its programmes. The RDP was launched in 1986 and has organised 3.85 million poor landless people into 102,572 village organisations (VO)—the nucleus of all development interventions of BRAC. Through VOs BRAC organizes the poor and provides them with credit, training, and other necessary support. While BRAC believes that micro-finance is an important tool to use in breaking the cycle of poverty, it also places equal importance on training its members in income generating activities and facilitating linkages with the consumer markets in Bangladesh. RDP also complements a Social Development Programme with a view to increase the VO member's awareness of their rights, enable them to protest against acts of injustice, discrimination, and violence against women and seek justice through the appropriate channels.

Unlike developed countries, taking up life insurance policy is not very common in Bangladesh. In 1990, BRAC introduced a life insurance scheme for its VO members. At the death of any member BRAC pays Tk. 5000 for each claim from the interest fund of the micro finance programme. All members are entitled to the insurance. The eligibility of receiving the insurance claims are as follows:

1. A claim has to be filed after the death of the member by the nominee of the deceased in a prescribed form
2. Before death, the member must satisfy BRAC membership criteria[b]
3. Only the nominee is eligible to receive the insurance claims
4. If the deceased member had any outstanding loan, the claim is paid after settlement of the unpaid loan.

It is required that the application for the claim accompany by the following documents:

a. Investigation report on the death by the appropriate BRAC staff (Program Organizer and Area Manager)

[b] BRAC members are female who own less than 50 decimals of land, sell manual labour and aged 18 to 54 years.

b. Passbook of the deceased member to prove outstanding loan and savings

c. Resolution of the VO supporting the claim.

In case of no nominee, the insurance claim is disbursed in the following ways:

- The minor children of the deceased member become the beneficiaries of the insurance. If there is none, the grown up children become the beneficiaries. Again, if there is no children, then the mother of the deceased is given the benefit.
- If none of the above conditions satisfy, the management committee of the VO and BRAC AO (Area Office) together determine the appropriate person to receive the insurance claims

In 1998, 3,879 VO members died and the insurance claims of a total of Tk. 19,395,000 was paid to their nominees.

Objectives of the study

The broad objective of this study was to assess the death rates of BRAC VO members in 1998 and also to provide the sociodemographic determinants of mortality and causes of death of the members. We also looked at the disbursement process of insurance claims; and the ways in which the money was used by beneficiaries.

Methodology

Pilot study

The methods and tools for data collection on the selected information were tested in the pilot study. This was conducted in two purposively selected area offices from the Tangail region[c] during December 1999 and five randomly selected AOs of the Sylhet region during January-February 2000.

Study area and population

In 1999, BRAC implemented its RDP programme in 409 thanas of 61 districts (Annex Table A1) through 45 regional and 452 area offices. In mid-1998, there were 2,537,203 members in the village organizations (BRAC, 1999) and, according to official records, a total of 3879 female VO members aged 18–54 years had died. These deceased female VO members constituted the study population.

Estimation of sample size

With a confidence level of 95% and acceptable error of 0.05, the sample size was estimated to be 350.

Sampling technique

The survey employed a three-stage cluster sampling. Regions served as primary sampling units (PSUs), BRAC AOs as secondary sampling units (SSUs) and deceased members' household as ultimate sampling units (USUs). In the first stage, 12 regions were randomly selected from 45 regions. In the second stage, a total of 32 BRAC AOs were randomly selected and in the third stage a total of 413 ultimate sampling units were

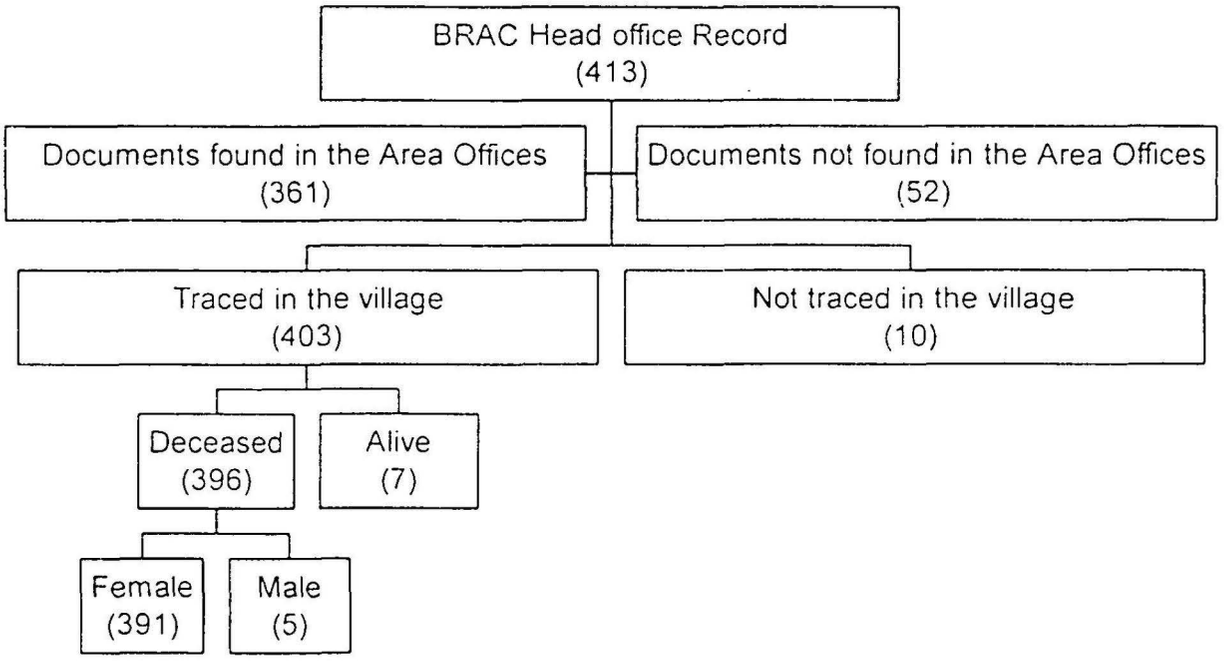
[c] Region constitutes of 12–20 BRAC areas which consists of 160 units each with 50 target households to form a village organization.

selected. The region and area wise distribution of 413 USUs are shown in Annex Table A3.

Disbursement status of insurance claims

Of the total 413 deceased BRAC VO members, 361 had documents related to their deaths and insurance at the AOs level (Figure 1). Of the latter, the households of ten members could not be traced (migrated or missing). Seven women who were reportedly dead were found not to be so by the survey team. Of the remaining 396 dead members, five were male and were thus excluded. Finally 391 female deaths were analysed.

Figure 1: Disbursement status of insurance claims



Variables for the Study

The variables used were: age, religion, marriage, education, and occupation, of the deceased members, economic status of the households, family size, land ownership, house type, characteristic of the spouse, length of membership and training history of the deceased members, causes of death, and disbursement of insurance claims.

Lay reporting of information concerning deaths

In many developing countries such as Bangladesh, most deaths occur in the home with limited or no medical attendance, and post-mortem autopsies are rarely possible. In such settings, assessment of the cause of death must rely on an alternative source of information, namely the description of symptoms and events preceding the death by relatives who attended the event. The idea of assessing the causes of death by an analysis of symptoms and events collected by lay reporters was introduced in the 1950s (Biraud, 1956). It was later formalized with the production of the first list of causes of death to be used by lay reporting of symptoms preceding death (WHO, 1978). This technique is known as verbal autopsy (VA). It refers to a method of retrospective interview with individuals who have attended a death and can describe what happened during the few hours, days or months preceding death. A most likely cause of death is then inferred from the sequence and the combination of symptoms and events reported.

The guidelines used to train field interviewers to the present study were adapted from the study conducted by Nath and Hadi (1994). The interviewers were asked to write symptoms in a space provided in the questionnaire but they in their turn wrote, for most of the time, only a few significant words. In some cases, the description was longer, unstructured and loaded with subjective interpretations and (inappropriate) medical terms.

Interpretation of cause of death and classification

Once completed the cause of death section of the questionnaire was taken to Dhaka and validated by a female medically-trained staff. She did a diagnosis based on the available information in the questionnaire. Diagnosis was written in full, with secondary causes. Coding and classification of the diseases were selected from a list of 97 possible codes, derived from the "basic tabulation list" of the World Health Organization (WHO 1977).

Data collection techniques, tools, and their collection

Both primary and secondary data were used in this study. For primary data, six interviewers were divided into three groups. Each group covered two regions. At the first stage, the interviewers collected the relevant data from the AOs (see below). They then

interviewed the nearest relative of the deceased member in the village. A structured questionnaire containing pre-coded and open-ended questions was administered to collect the data.

List of deceased BRAC VO members who died in 1998 were collected from the BRAC finance department and the mid-year size of BRAC VO membership for the same year were also collected from the BRAC AOs. At AO, the interviewers collected selected information by checking and cross-checking the records related to disbursement of insurance money and status of the membership. To identify the deceased BRAC members' households, the interviewers consulted with the local staff in each AO. Villagers, the VO leader or other members helped in identifying the deceased's household. The nearest relatives of the deceased members were interviewed which took place in May 2000. For comparison, data on socio-demographic background of (surviving) BRAC VO members from the "Second Impact Assessment Study of RDP, 1998" was used.

Data processing and analysis

The questionnaires were edited and verified for completeness and consistency. Afterwards, the data were entered into the computer by using the software FoxPro and analysed using SAS (Statistical Analysis Software).

Limitations of the study

The causes of death and symptoms preceding the death were collected from the relatives of the deceased members by non medical persons. To diagnose the main cause of death this had its known limitations. However, these information were afterwards validated and coded by medically trained persons.

Findings

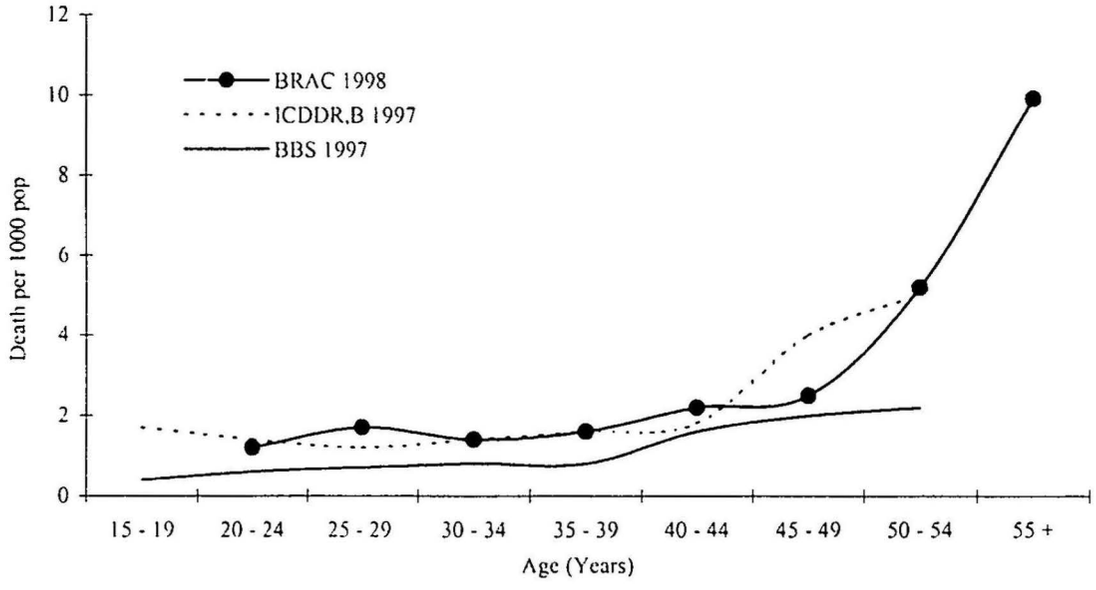
Average age

The average age of the deceased members was found to be 41 years.

Mortality patterns

The crude death rate among the BRAC female members was found to be 2.1 per 1000. The rate was highest (3.0 per 1000) in the Rajbari region and lowest (1.5 per 1000) in the

Figure 2: Age-specific female mortality per 1000 for BRAC members, in comparison to the general population



Source: Research and Evaluation Division, BRAC, 2000, Demographic Surveillance System-Matlab, ICDDR,B, 1997, and Bangladesh Demographic Survey of Vital Registration System. B.B.S, 1997.

Table 1: BRAC member's mortality (per 1000) by age

Age (years)	No. of deaths	Mid-year Pop. (N)	Female mortality
< 25	28	25534	1.1
25 – 29	63	38580	1.6
30 – 34	54	36717	1.5
35 – 39	53	33548	1.6
40 – 44	53	24416	2.2
45 – 49	36	13792	2.6
50 – 54	36	6896	5.2
55 +	68	6896	9.9
Total	391	186379	2.1

Note: Mid-year populations were segregated with the help of percentage distribution of the survived members (Annex Table A4)

Khulna region (Annex Table A3).

Figure 2 and Table 1 show that the death rate of BRAC members consistently increased with age. It was the highest (9.9 per 1000) amongst the 55 or more years age-group and lowest (1.1 per 1000) amongst 25 or below years age-group. The J- shaped curve is consistent with usual mortality patterns and quantum and the trend in adult female age-specific death rates for BRAC members are comparable with those found by the Bangladesh Demographic and Health Survey and the Demographic Surveillance System of ICDDR,B (Figure 2). The closeness of the BRAC members' experience indicates their similarity with the experience of the general female population of the country. The rate is lower than expected as BRAC members being from the poorest section of the society were expected to have higher mortality levels.

Mortality differentials[d]

Demographic factors

Table 2 presents the mortality rate by religion and marital status. The mortality rate was lower among the Muslims (1.9 per 1000) than the Minority groups (4.1 per 1000) ($p<0.001$). The data also shows that the mortality rate was highest among divorced and widowed women (4.2 per 1000) and lowest among married women (1.6 per 1000). The difference between the married and others (widow, divorced, and separated) rates is statistically significant ($p<0.001$).

Table 2: BRAC members mortality (per 1000) by demographic variables

Religion	No. of deaths n=391	Mid-year Pop. (N)	Female mortality	Statistical test
Muslim	322	169418	1.9	$\chi^2 = 34.6$, $p<0.001$
Minority	69	16961	4.1	
Marital status	**n=339**			
Married	260	165318	1.6	Married vs Other* $\chi^2 = 52.13$, $p<0.001$
Widow	67	15842	4.2	
Separated	5	2982	1.7	
Divorced	7	1678	4.2	

Note: Mid-year populations were segregated with the help of percentage distribution of the survived members (Annex Table A4)

* Other indicates widow, separated and divorced

[d] The mid-year population for each category of the socioeconomic and demographic variables were estimated with the help of the Second Impact Assessment Study of RDP, 1998 (Table 2 & Table 3).

Socioeconomic factors

Socioeconomic differentials in mortality were examined for the following variables: education, occupation, economic status, land ownership, house type, and husband's education. The estimates are shown in Table 3.

In education three levels have been considered: no schooling, one to five years of schooling and six years and above. The mortality level of unschooled BRAC members was the highest (1.9 per 1000) compared to those with one to five years of schooling (1.4 per 1000) and six years or more (1.8 per 1000). The mortality was higher among those having higher education. Similar patterns were found in respect of education of the BRAC member's husband.

Table 3 also shows the variation in mortality rates by members' own and husband's occupation. The mortality rate for the service[c] category was the highest (5.4), followed by self-employed (2.5), wage employed (1.9) and housewife (1.7). First three categories of the occupation of BRAC member's husband showed the similar patterns. But 'others' which included unemployed, beggar, aged, mentally retarded etc. of BRAC members had the highest mortality (9.4).

For economic grouping, deceased members were classified into four self-rated groups: surplus, break-even, occasional deficit, and chronic deficit. The poorest group had the highest (9.1) rate, while the other three groups had low levels. The poor groups; viz., the occasional deficit and chronic deficit, had significantly higher mortality than the well-to-do groups ($p < 0.001$).

[c] Official worker, private tutor or teacher

Table 3: BRAC members mortality (per 1000) by socioeconomic status

Education	No. of deaths n=339	Mid-year pop.	Female mortality	Statistical test
Illiterate	277	145003	1.9	Illiterate vs Literate $\chi^2 = 3.0$, $p<0.10$
Literate	62	41376	1.5	
I – V	40	29448	1.4	
VI +	22	11928	1.8	
Husband's education				
Illiterate	259	99340	2.6	Illiterate vs Literate $\chi^2 = 22.2$, $p<0.001$
Literate	79	54982	1.4	
I – V	46	33362	1.4	
VI +	33	22365	1.5	
No answer	1	31312	0.03	
Occupation				
Self employed	29	11555	2.5	
Wage employed	32	16588	1.9	
Service	7	1305	5.4	
House wife	269	155254	1.7	
Others(Begg., & Unemp)	2	1677	0.8	
Husband's occupation				
Self employed	105	69147	1.5	
Wage employed	97	73247	1.3	
Service	20	8946	2.2	
Others (Begg., Unemp., aged and mad)	28	2982	9.4	
Non response	10	15283	0.7	
Economic status				
Surplus	37	37648	1.0	Non deficit vs Deficit $\chi^2 = 37.0$, $p<0.001$
Break even	133	84989	1.6	
Occasional deficit	103	56473	1.8	
Chronic deficit	66	7269	9.1	
Family Size				
1	18	1305	13.8	1 vs 2+ $\chi^2 = 103.8$, $p<0.001$
2	26	8946	2.9	
3 +	295	176128	1.7	
Land ownership (dec.)				
Landless	230	114996	2.0	$\chi^2 = 5.4$, $p<0.025$
Landholder	109	71383	1.5	
Household type				
Durable[f]	64	5032	12.7	Durable vs Other $\chi^2 = 338.4$, $p<0.001$
Semi durable[g]	154	106423	1.5	
Non durable[h]	121	74924	1.6	

Note: Mid-year populations were segregated with the help of percentage distribution of the survived members (Annex Table A4)

[f] Houses were built of only brick or tin roofing with tin wall is called durable
[g] Houses were built of only tin roofing is called semi-durable
[h] Other than the durable or semi-durable houses is called non-durable

The average family size of the deceased members was smaller than the surviving members (as found in 2nd IAS 1998) (4.8 versus 5.1). Mortality rate and family size showed an inverse relationship with the rate being highest (13.8) for single-member family which sharply decreased to 2.9 for members with family size 2 and further to 1.7 for family size 3 or more.

The variation in mortality rates by land holding has been significant ($p<0.025$) with the rate for landholders' lower (1.5) than that of landless or poor (2.0).

Mortality by house structure shows a pattern difficult to explain. Mortality in house with durable structures had the highest mortality (12.7) while the poorest (semi-durable and non-durable) had the smallest mortality. The difference was highly significant ($p<0.001$).

BRAC membership and mortality

Table 4 presents the mortality rate by length of membership and training received. The mortality of the members whose length of membership was below 4 years was higher (2.1 per 1000) than that of the members whose length of membership was 4 years and over (1.3 per 1000) ($p<0.001$).

The mortality of the members who received training from BRAC was also lower (1.4 per 1000) than that of members who did not receive any training from BRAC (2.0 per 1000). The rates are significantly different ($p<0.01$). It indicated that the trained members had a lower risk of death compared to the members without training.

Table 4: BRAC members mortality (per 1000) by length of membership and training received

Length of membership (months)	No. of deaths n=339	Mid-year populations (N)	Female mortality	Statistical test
< 48	254	119655	2.1	$\chi^2 = 16.999$, $p<0.001$
48 ≥	85	66724	1.3	
Training received				
Yes	64	46595	1.4	$\chi^2 = 7.321$, $p<0.01$
No	275	138107	2.0	
Non response	-	1677	-	

Note: Mid-year populations were segregated with the help of percentage distribution of the survived members (Annex Table A4)

Odds ratio analysis

To confirm findings of the bivariate analyses as presented in the previous section, odds ratio analyses were performed (Table A5-A16). The risk factors affecting the mortality are presented in Table 5, which largely confirms the conclusion of the bivariate analysis.

It is observed that occurrence of death is significantly different between women aged 45 years or less and those aged above 45 years ($p<0.001$); a BRAC member aged 45 years or less was almost 80 percent less likely to die than a BRAC member aged above 45 years. It is also indicated that a Muslim BRAC member was 53 percent less likely to die than a Minority BRAC member and a married member was almost 60 percent less likely to die than the other (widow, separated and divorced) members.

It is shown that unschooled BRAC member was 1.28 times more likely to die compared to those BRAC members who had been to school. A BRAC member who had an unschooled husband was almost twice as likely to die than those whose husband went to school. It is evident from the result that a BRAC member who had higher food security, viz., 'non deficit' was almost 50 percent less likely to die than those with 'deficit' status. The likelihood of death was eight times higher who belonged to a single member family, compared to those who had family size of two or above.

BRAC membership and mortality

Table 5 also shows that the occurrence of death was 1.67 times higher among the BRAC member whose length of membership was below 4 years than those whose length of membership was 4 years and above.

Table 5: Odds Ratio and 95% confidence interval of associated risk factors

Risk factors	Odds Ratio, 95% C.I.
Death by BRAC members aged ≤45 years	0.22 (0.18 0.28)
Death by Muslim religion	0.47 (0.36 0.60)
Death by married BRAC members	0.41 (0.32 0.52)
Death by illiterate BRAC members	1.28 (0.97 1.68)
Death by illiterate BRAC member's husband	1.82 (1.41 2.34)
Death by house wife BRAC members	0.77 (0.59 1.00)
Death by non deficit economic status	0.52 (0.42 0.65)
Death by family size of one	8.1 (5.00 12.98)
Death by landless BRAC members	1.31 (1.04 1.65)
Death by durable house type	8.48 (6.45 11.15)
Death by <48 months length of membership	1.67 (1.30 2.13)
Death by training received from BRAC	0.70 (0.53 0.92)

Causes of death

Table 6 presents the deceased members by cause of death. In about 17 percent cases, the causes of death remained unspecified (others). The highest proportion of deaths was caused by neoplasms (16.8%), followed by direct obstetric complications (15.3%), cardiovascular diseases (14.5%), gastrointestinal diseases (10%), respiratory diseases (7.7%), accidents or injuries (5.9%), infectious diseases (4.7%), diarrhoeal diseases (2.7%), genitourinary diseases (2.4%) etc.

Table 6: Deceased BRAC members by cause of death

Cause of death	No.	%
Neoplasms	57	16.8
Direct Obstetric complications	52	15.3
Cardiovascular diseases	49	14.5
Gastrointestinal diseases	34	10.0
Respiratory diseases	26	7.7
Accidents or Injuries	20	5.9
Infectious diseases	16	4.7
Diarrhoeal diseases	9	2.7
Miscellaneous	8	2.4
Genitourinary diseases	8	2.4
Nutritional	2	0.6
Unspecified (Others)	58	17.1

Table 7 illustrates that the distribution of the deceased BRAC members by broad groups of causes of death. The major causes of death of the BRAC members were non-communicable diseases (56%) (such as various types of carcinoma, cardiovascular diseases, renal diseases, ulcerative diseases, cirrhosis of the liver, nutritional diseases, haemorrhoids and others). More than 15 percent members died of pregnancy complications, about 6 percent members died of communicable diseases (such as hepatic failure due to jaundice, jaundice, chronic liver disease due to hepatitis B, cirrhosis due to

Table 7: Deceased BRAC members by cause of death

Cause of death	No.	%
Noncommunicable disease	190	56.0
Pregnancy complication	52	15.3
Accident or Injury	20	5.9
Communicable disease	19	5.6
Unspecified (Others)	58	17.1

hepatitis B etc.), and about 6 percent members died by accidents or injuries. But the second highest cause of death (17.1%) was the unspecified (others) causes.

Figure 3: Cause of death by age

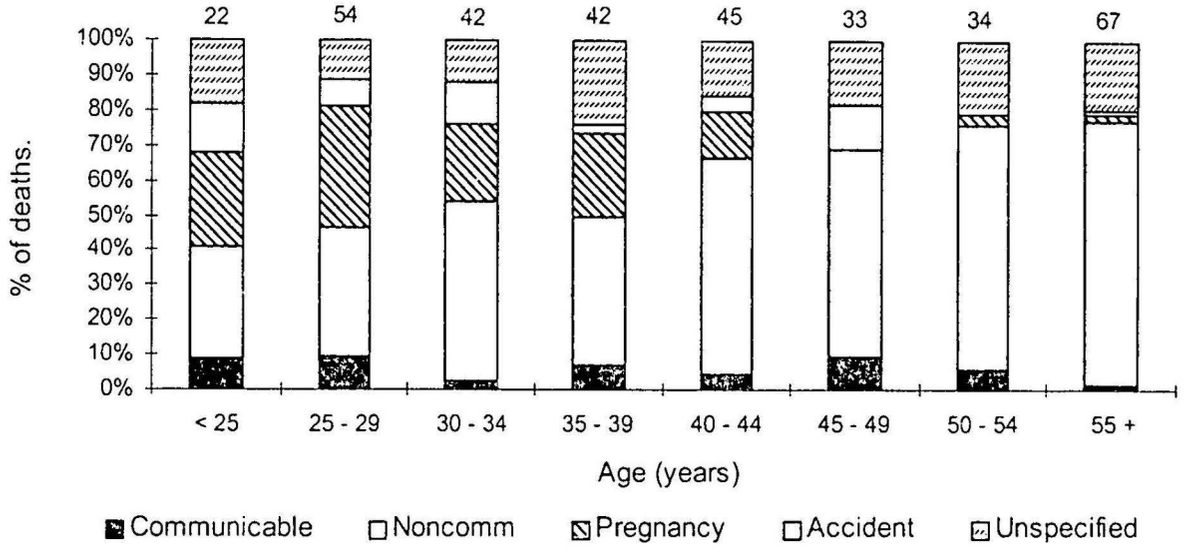


Figure 3 shows the causes of death by age. As expected, the contribution of pregnancy related complication was higher in early and middle ages, but the contribution of noncommunicable disease increased in older age groups.

Seasonality of deaths

Figure 4 shows the percentage of deaths by month. A high pick is observed in February 1998 and another two small picks in May-June and October-November 1998.

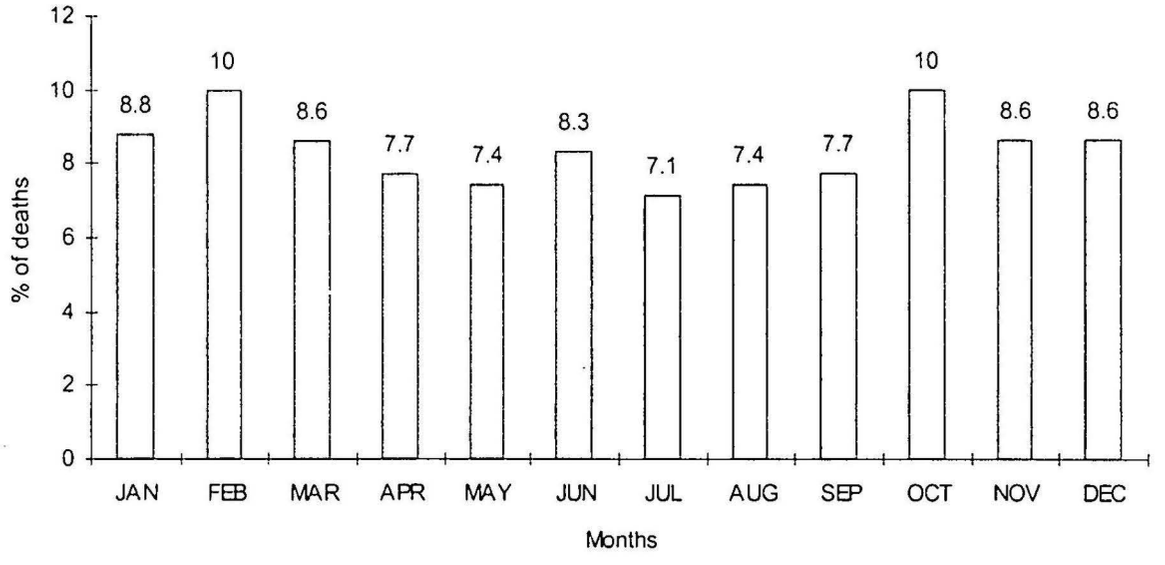


Figure 4: Seasonality of deaths, BRAC VO members, 1998

Disbursement of insurance claims

Table 8 shows the disbursement pattern of the insurance claims. Almost all (99.1%) received the claims and nearly 94 percent of the deceased members' nominee received the disbursed money without any hassle. Of the 346 cases, families of the three deceased members' did not get the insurance money and the reasons behind it are as stated below:

Case1: The relatives of the deceased disclosed that..... her death was unnatural. Before her death, she became mentally retarded, as her daughter had died a few days after marriage due to pregnancy related complications. Her body was found in the bushes of the betel-nut garden a couple of days after her death. However, local BRAC office did not disburse the insurance money as the villagers reported that her death was unnatural.

Case 2: The official documents related to disbursement of insurance showed that her family had received the money. But her husband in front of the BRAC local staff, the VO leader and 20 other members said that .....the money was not disbursed.

Case 3: The official documents related to disbursement of insurance showed that her family had received the money. But the respondents of that household said that .....they did not get the money.

Table 8: Deceased BRAC members by disbursement of insurance claims

Disbursement of insurance claims	No.	%
Disbursed	343	99.1
Nominee received or not harassed	322	93.9
Other received or harassed	21	6.1
Not disbursed	3	0.9
Total	346	100

Table 9 shows the amount of time taken to receive the insurance money by the beneficiary after the death of BRAC members. Nearly one third of the deceased's family received the money within three months, about 38 percent received it in between four to five months and just over 30 percent received it after five months.

When asked whether they needed to pay any money to a BRAC staff, six of 346 or less than two percent replied as the alternative.

Table 9: Deceased BRAC members by amount of time taken to receive the insurance money

Time taken to receive the insurance money	No.	%
Disbursed	343	99.1
1–2 months	59	17.2
3 months	52	15.2
4 months	64	18.7
5 months	65	19.0
6 months	33	9.6
7 months	21	6.1
8 months	10	2.9
9 months	4	1.2
10 months	10	2.9
11 months	4	1.2
12 months and above	21	6.1
Not disbursed	3	0.9
Total	346	100

Table 10 shows that the insurance money was used for a various of purposes including funeral rites and rituals (41%), loan adjustments (34.7%), asset purchase and house building (28.6%), meeting family expenditure needs (12.1%), give-out to relatives (6.6%), invest in business (4.0%), and others (2.3%).

Table 10: Use of insurance money

Use of insurance money	No.	%
Expended for the deceased's rites and rituals	142	41.0
Loan adjusted /repaid	120	34.7
Asset purchase and house building	99	28.6
Family expenditure	42	12.1
Distributed among relatives	23	6.6
Business (Son/husband/hhh)	14	4.0
Marriage Purpose (Daughter)	7	2.0
Other member's loan adjustment	1	0.3
Insurance not disbursed	3	0.9
Total	451	130.3

Note: Multiple responses considered

Discussion

This study reveals some important findings about the adult mortality situation in Bangladesh and the insurance scheme of BRAC. Reliable assessment of the situation in mortality and morbidity is a formidable task for most developing countries. An adequate system of data collection for mortality and morbidity rates has not yet been well developed (Ruzicka, 1982).

The crude death rate (CDR) of BRAC members was higher than the general Bangladeshi female population aged between 15 and 54 years but is the same as found by ICDDR,B in Matlab. The socioeconomic condition of the BRAC members represents the poorest stratum of the society, but the general female population of the country as shown in other two (graphs) represents all classes of the society. Thus in other words means that the mortality level of poorest BRAC members have improved to a certain extent. A question that this gives rise to is whether this apparent better performance of BRAC members in mortality experience is due to the impact of BRAC. Unfortunately there is no such data available to corroborate or disputes this finding for adult mortality. However, recent studies done in Matlab by ICDDR,B and BRAC found a very similar trend in case of child mortality (Bhuiya et. al., 2001; Chowdhury & Bhuiya, 2001). The other data suggesting clear mortality advantage of certain groups is borne out by other studies. The BRAC data suggest that women who were divorced, belonged to the poorest households, unschooled, etc. had higher chance of dying. This is consistent with other studies (Rogers 1995a).

Kwon TH (1986) analysed adult mortality based on the 1974 Korean National Fertility Survey and showed a marked negative association between mortality and educational attainment. Kitagawa and Hauser (1973) demonstrated that income and education each exhibited strong inverse associations with mortality. One of the few US studies (Sorlie, Backlund, and Keller, 1995) found considerably weaker mortality effects for occupational status than for education and income. This study also indicates such types of characteristics. But some unexpected results were found in this study. Mortality rates steeply decline with increasing family size, and also declines with decreasing house type.

There is another interesting finding that emerged from this study is the effect of length of the BRAC membership as mortality. As membership duration increased the mortality rate decreased. Such trend is also consistent with other findings on the importance of the length of membership and training. There are no seasonal effects on BRAC members' mortality.

Nearly 17 percent of the members' causes of death were impossible to specify. Another study (Kamal, 1992) also found many undiagnosed data, among 15–44 years of age in Joypurhat (27.3% in1988, 16.7% in 1989, 38.1% in 1990) and Manikgonj (16.7% in 1988, 22.7% in 1989, 1.4% in 1990). The neoplasms i.e., various type of carcinoma were the main causes of death of the BRAC members which is a very unexpected result. And direct obstetric complication was the second highest cause and cardiovascular diseases and gastrointestinal diseases were the third and fourth highest causes of death. As with the broader groups, noncommunicable diseases appeared to be the leading cause of death of deceased members and this is consistent with what Davidson et al. found in their study in 1977. Another study (Oyejide, C. O. et al., 1996) showed that noncommunicable diseases emerged as the most common causes of adult female mortality in Al Ain district of the United Arab Emirates over a 10 year period 1984-93.

The 25–29 years age group had the highest proportion of deaths among all age groups. The pregnancy complication was nearly the same proportion as noncommunicable disease among the age group of 25–29 years.

This study reveals some important findings that can provide guidelines for implementing the policies that have been undertaken recently by BRAC. The first thing that requires immediate attention from both HO and AOs is the consistency of record keeping system. It is observed that BRAC had to pay money, although a very small amount, to members who were found alive (1.7%).

Almost 94 percent of the members' nominees received the insurance money. BRAC's monitoring department (April 1999) presented a report in which also corroborated this as

96 percent of the members' nominees received the money. The data reveals that more than two-third of the families received the insurance money after 3 months.

This study showed that more than forty percent of the deceased members' families expended the insurance money for meeting the rituals of death. Other important purposes were: loan adjustment or repay, asset purchase and house building, family expenditure, distribution among relatives etc.

Recommendations

- It is necessary to investigate variation in between the deaths recorded at HO and deaths actually found at AOs level. And the record keeping system should be consistent.
- A death registration form (see a sample in Annex 2) for BRAC members can easily be maintained by AM at the time of death investigation
- Steps may be taken to maintain the record registers of savings, training and membership position at AOs level
- Reproductive health programme and communicable disease control programme had better be geared up for decreasing the mortality
- Steps may be taken to improve the knowledge on safe motherhood and to extent the health education programme among the BRAC members
- Disbursement of insurance benefits of BRAC members might be thought over through an indepth investigation

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References

1. ESCAP, Population Data Sheet: Population and Development Indicators for Asia and the Pacific 2000, Bangkok 2000
2. BRAC Annual report 1998. Dhaka: *Bangladesh Rural Advancement Committee,* 1999,1: 19-20
3. BRAC Rural Development Program organization, savings & credit management manual 1997. *Bangladesh Rural Advancement Committee*, Feb 1997: 28 -33
4. Bangladesh Bureau of Statistics. Statistical Year Book of Bangladesh 1997. Dhaka: *Ministry of Planning, Government of Bangladesh*, Sept. 1998
5. Bangladesh Bureau of Statistics. Statistical Year Book of Bangladesh 1993. Dhaka: *Ministry of Planning, Government of Bangladesh*, April 1994
6. ICDDR,B. Demographic Surveillance System- Matlab. 1998, 8(82): 15-34
7. ICDDR,B. Demographic Surveillance System- Matlab. 1999, 30(84): 15-34
8. U.S. Bureau of the Census, International Data Base, Data updated October 2000
9. Bicego G, et al., Sumve Survey on adult and childhood mortality, Tanzania, 1995. *Calverton, Maryland, Macro International,* February 1997
10. Ahmed AU, Analysis of Mortality Trends and Patterns in Bangladesh. *Economic and social commission for Asia and the Pacific*, Thailand, UN, 1986: 16-45
11. D'Souza S and Bhuiya A, Socieconomic Mortality Differentials in Rural Area of Bangladesh. *Pop and Dev Rev,* Dec 1982; 8(4): 753-769
12. Hummer R A, Rogers R G, Eberstein I W, Sociodemographic Differentials in Adult Mortality: A Review of Analytic Approaches. *Pop And Dev Rev*, Sept 1998; 24(3): 553-578
13. Kelly P, Feldman R, Ndubani P, et al., High Adult Mortality in Lusakam. *The Lancet*, March 1998; 351:883
14. Vaidyanathan K E, Studies on mortality in India. *The Gandhigram Institute of Rural Health and Family Planning*, 1972; Monograph Series no. 5
15. Fauveau V, Matlab: Women, children and Health. ICDDR,B, July 1994; 65-86
16. World Health Organization 1977: Manual of the International statistical classification of diseases, injuries and causes of death. *Ixth revision, Geneva.*

17. Hoch S L, Famine, disease, and mortality patterns in the parish of Borshevka, Russia, 1830-1912. *Population Studies*, 1998; 52: 357-368

18. Chandramohan D, Maude G H, Rodrigues L C et al., Verbal Autopsies for Adult Deaths: Issues in their Development and Validation. *Int J Epidemol*, 1994; 23(2): 213-222

19. Husain A M M et al., Poverty Alleviation And Empowerment, BRAC, BRAC Centre, July 1998: 29-55

20. Kwon T H, The trends and patterns of mortality and health in the Republic of Korea. *Asian Population Study Series*, 1986, 76: 86 pages.

21. Oyejide, C. O. et al., Causes of adult female mortality in Al Ain district, United Arab Emirates. *Journal of Epidemiology and Community Health*, April 1996, 50(2): 224 pp.

22. Kamal F M, Impact of BRAC intervention on mortality (1988–1990): Findings from a longitudinal data base. *Bangladesh Rural Advancement Committee Health Studies*, 1992, 9: 311-379.

23. BRAC Quarterly Monitoring Report April-June 1999, Dhaka: *Bangladesh Rural Advancement Committee,* September1999, 44-48

Annex A:

Table A1: Number of BRAC members died in 1998, mortality and mid-year population by region

Region	No. of areas	Thana covered	Mid-year population	No. of deaths	Mortality per 1000 pop
Barisal	16	10	68940	143	2.1
Bogra	16	11	68146	150	2.2
Bagherhat	12	8	28969	29	1.0
Bhola	8	7	25679	23	0.9
B.Baria	8	5	33345	78	2.3
Chapai Nawabgonj	8	5	39006	39	1.0
Comilla	20	13	85504	164	1.9
Coxs Bazaar	15	13	36934	71	1.9
Chuadanga	11	6	53510	68	1.3
Dinajpur	17	13	72892	131	1.8
Faridpur	16	8	78703	155	2.0
Feni	19	14	49927	59	1.2
Gopalgonj	25	5	75149	89	1.2
Gaibandha	13	6	66495	91	1.4
Gazipur	8	8	32137	58	1.8
Jhenaidah	11	6	59982	102	1.7
Jessore	19	8	88655	177	2.0
Jamalpur	14	6	68936	87	1.3
Kishoregonj	16	11	58151	108	1.9
Kurigram	16	14	52829	73	1.4
Khulna	11	9	15702	26	1.7
Kustia	10	6	58874	77	1.3
Manikganj	19	8	84630	137	1.6
Mymensingh	21	10	103510	120	1.2
Madaripur	18	13	70337	115	1.6
Magura	13	7	55086	79	1.4
Naogaon	16	15	63491	76	1.2
Nilphamari	14	6	51254	89	1.7
Narsingdi	11	16	64336	113	1.8
Natore	12	6	56688	77	1.4
Netrokona	16	9	29221	52	1.8
Pabna	15	9	67016	86	1.3
Pirojpur	8	8	15516	32	2.1
Patuakhali	14	10	20269	32	1.6
Rajbari	9	4	46511	62	1.3
Rajshahi	13	9	61145	78	1.3
Rangpur	20	8	98566	140	1.4
Sylhet	15	12	55720	139	2.5
Shatkhira	11	7	37840	39	1.0
Sherpur	13	16	75923	52	0.7
Shirajgonj	15	19	63468	61	1.0
Sreemongal	15	13	62356	122	2.0
Thakurgaon	14	10	36340	28	0.8
Tangail	19	10	81092	145	1.8
Rangamati	12	12	18423	7	0.4
Total (45 regions)	642	409	2537203	3879	1.5

Source: RDP Management Information System and BRAC Finance Department, 1999

Table A2: Female age-specific death rates (per 1000) of BRAC 1998, ICDDR,B 1997, and BBS 1997

Age (years)	Death rates per 1000		
	BRAC 1998*	ICDDR,B 1997 §	BBS 1997 ξ
15 – 19	--	1.7	0.4
20 – 24	1.1	1.4	0.6
25 – 29	1.6	1.2	0.7
30 – 34	1.5	1.4	0.8
35 – 39	1.6	1.6	0.8
40 – 44	2.2	1.8	1.6
45 – 49	2.6	4	2.0
50 – 54	5.2	5	2.2
55 +	9.9	--	--

Source: * RDP Management Information System and BRAC Finance Department, 1999
§ Registration of Demographic Events 1997, DSS-Matlab, ICDDR,B
ξ Bangladesh Demographic Survey of Vital Registration System. B.B.S

Table A3: Number of deaths found in the field by region and area

Region	Area	Mid-year members	Death Record	Documents not found in AO's	Alive found in the field	Not interviewed		Death found in the field	Death rate /000	BHC
						Male	Res. NF			
Joypurhat	Joypurhat, Panchbiby, Kalai, Akkelpur	19714	36	5	0	0	0	36	1.8	-- -- -- --
Jhenaidah	Jhenaidah, Mohespur, Coat Chandpur Horinakunda	23997	45	11	0	0	0	45	1.9	-- -- -- --
Magura	Narail, Mohammadpur Sreepur	18780	36	7	0	0	0	36	1.9	-- -- --
Khulna	Fultala, Paikgacha, Dumuria	17141	25	4	0	0	0	25	1.5	-- -- --
Rajbari	Goalundo, Baliakandi	13601	41	8	0	0	0	41	3.0	Yes --
Tangail	Mirzapur, Bashail	11173	32	4	1	1	3	27	2.4	-- --
Manikgonj	Gheor, Singair	11716	33	1	2	1	5	25	2.1	-- --
Sreemongal	Kulaura, Hobigonj	12876	34	4	4	0	0	30	2.3	Yes --
Thakurgaon	Thakurgaon, Panchghar	11302	23	0	0	0	1	22	1.9	-- --
Dinajpur	Kasipur, Birgonj, Ranigonj	14730	39	4	0	1	1	37	2.5	Yes Yes Yes
Nilphamari	Syedpur, Dimla	14168	33	2	0	2	0	31	2.2	Yes Yes
Kurigram	Bhurungamari, Kurigram, Lalmonirhat	17181	36	2	0	0	0	36	2.1	-- -- --
Total	**32**	**186,379**	**413**	**52**	**7**	**5**	**10**	**391**	**2.1**	**7**

Note: Res. NF= Respondent Not Found
BHC= BRAC Health Centre

Table A4: Percentage of BRAC members (Deceased and Survived) by Sociodemographic characteristics

Characteristics	BRAC members		Characteristics	BRAC members	
Age	**Deceased n=391**	**Comparable group n=564**	**Family Size**	**Deceased n=339$^{\Psi}$**	**Comparable group n=564**
<25	7.2 (28)	13.7	1	5.3 (18)	0.7
25-29	16.1 (63)	20.7	2	7.7 (26)	4.8
30-34	13.8 (54)	19.7	3	17.1 (58)	12.8
35-39	13.6 (53)	18.0	4 +	69.9 (237)	81.7
40-44	13.6 (53)	13.1	Mean	4.8	5.1
45-49	9.2 (36)	7.4	**Economic status**	**n=339$^{\Psi}$**	
50-54	9.2 (36)	3.7	Surplus	10.9 (37)	20.2
55 +	17.4 (68)	3.7	Break even	39.2 (133)	45.6
Mean Age	40.8	33.9	Deficit	30.4 (103)	30.3
Mode Age	30	30	Chronic deficit	19.5 (66)	3.9
Religion*	**n=391**		**Land (dec.)**	**n=339$^{\Psi}$**	
Islam	82.4 (322)	90.9	Land less	67.8 (230)	61.7
Hindu	17.4 (68)	7.6	1 – 50	14.7 (50)	26.1
Others	0.3 (1)	1.5	> 50	17.4 (59)	12.2
Marital status	**n=339$^{\Psi}$**		**House type**	**n=339$^{\Psi}$**	
Married	76.7 (260)	88.7	Durable	18.9 (64)	2.7
Widow	19.8 (67)	8.5	Semi durable	45.4 (154)	57.1
Separated	1.5 (5)	1.6	Non durable	35.7 (121)§	40.2
Divorced	2.1 (7)	0.9	**Husband's Occu**	**n=339$^{\Psi}$**	
Unmarried	--	0.4	Self employed	30.9 (105)	37.1
Education	**n=339$^{\Psi}$**		Wage employed	28.6 (97)	39.3
Illiterate	81.7 (277)	77.8	Service	5.9 (20)	4.8
Literate	18.3 (62)	22.2	Others (Begg., Unemp. & DK)	8.3 (28)	10.6
I-V	11.8 (40)	15.8	Non response	2.9 (10)	8.2
VI +	6.5 (22)	6.4	NA (dead)	23.3 (79)	--
Occupation	**n=339$^{\Psi}$**		**Husband's Edu**	**n=339$^{\Psi}$**	
House wife	79.4 (269)	83.3	Illiterate	76.4 (259)	53.2
Self employed	8.6 (29)	6.2	Literate	23.3 (79)	29.5
Wage employed	9.4 (32)	8.9	I-V	13.6 (46)	17.9
Service	2.1 (7)	0.7	VI +	9.7 (33)	12.0
Others	0.6 (2)	0.9	No answer	0.3 (1)	16.8

Note: Survived BRAC member's secondary data (raw) were collected from 2nd Impact Assessment Study of RDP, 1998 conducted by RED, BRAC

$^{\Psi}$ Some information of 52 death cases was missed from the data

* The percentages of religion of comparable group were collected from First Impact Assessment Study of RDP, 1996 conducted by RED, BRAC

§ 4 homeless cases were included in non durable category

Table A5: Number of deaths by socidemographic variables

Variables	Death status			Odds Ratio, 95% C.I.
Age	Present (+)	Absent (-)	N	
≤49 years (+)	287	172300	172587	0.22 (0.18 0.28)
>49 years (-)	104	13688	13792	
N	391	185988	186379	

Table A6: Number of deaths by religion of BRAC members

Religion	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
Muslim (+)	322	169096	169418	0.47 (0.36 0.60)
Minority (-)	69	16892	16961	
N	391	185988	186379	

Table A7: Number of deaths by marital status of BRAC members

Marital status	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
Married (+)	260	165058	165318	0.41 (0.32 0.52)
Other** (-)	79	20423	20502	
N	339	185481	185820*	

Note: 52 death cases have been missed from the data

* 559 unmarried cases were excluded from the total member

** Other indicates widow, separated and divorced

Table A8: Number of deaths by education status of BRAC members

Education status	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
Illiterate (+)	277	144726	145003	1.28 (0.97 1.68)
Literate (-)	62	41314	41376	
N	339	186040	186379	

Note: 52 death cases have been missed from the data

Table A9: Number of deaths by husband's education status of BRAC members

Husband's education status	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
Illiterate (+)	259	99081	99340	1.82 (1.41 2.34)
Literate (-)	79	54903	54982	
N	339	186040	186379	

Note: 52 death cases have been missed from the data

Table A10: Number of deaths by occupation of BRAC members

Occupation	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
House wife(+)	269	154985	155254	0.77 (0.59 1.0)
Others (-)	70	31055	31125	
N	339	186040	186379	

Note: 52 death cases have been missed from the data

Table A11: Number of deaths by economic status of BRAC members

Economic status	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
Non deficit (+)	170	122467	122637	0.52 (0.42 0.65)
Deficit (-)	169	63573	63742	
N	339	186040	186379	

Note: 52 death cases have been missed from the data

Table A12: Number of deaths by family size of BRAC members

Family size	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
One (+)	18	1287	1305	8.1 (5.00 12.98)
Two and above (-)	321	184753	185074	
N	339	186040	186379	

Note: 52 death cases have been missed from the data

Table A13: Number of deaths by land ownership of BRAC members

Land ownership	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
Landless (+)	230	114766	114996	1.31 (1.04 1.65)
Landholder (-)	109	71274	71383	
N	339	186040	186379	

Note: 52 death cases have been missed from the data

Table A14: Number of deaths by house type

House type	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
Durable (+)	64	4968	5032	8.48 (6.45 11.15)
Non durable (-)	275	181072	181347	
N	339	186040	186379	

Note: 52 death cases have been missed from the data

Table A15: Number of deaths by length of membership

length of membership (months)	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
< 48 (+)	254	119401	119655	1.67 (1.30 2.13)
48≥ (-)	85	66639	66724	
N	339	186040	186379	

Note: 52 death cases have been missed from the data

Table A16: Number of deaths by training received

Training received	Death status			Odds Ratio, 95% C.I.
	Present (+)	Absent (-)	N	
Yes (+)	64	46531	46595	0.70 (0.53 0.92)
No (-)	275	139509	139784	
N	339	186040	186379	

Note: of 52 death cases has been missed from the data

Annex B:

Death Registration Form, BRAC

ID No._____

Name _____Membership Code_____

VO _____ VO Code _____

AO _____ AO Code _____

RO _____ RO Code _____

Place of death _____ Vill/Para _____ Thana_____

Dist _____ Date of death ___/___/_____Date of report ___/___/_____

==========

Date of birth ___/___/_____ Age : Month_____ Year_____

Which were consulted (one or more):

1. Allopath registered	4. Allopath quack	8. Trained midwife
2. Hospital inpatient	5. Hopeopath	9. Spiritual
3. Hospital outpatient	6. Kabiraj	10. None
	7. Dai	11. Other (specify)

==========

Description of events and symptoms leading to death:

Cause of death:_____

Date of interview___/___/_____Name of interviewer: _____

Signature_____Edited by : _____Coded by : _____

Notes:
