Chakaria Health and Demographic Surveillance System

Focusing on the Poor and Vulnerable

Socioeconomic, Health and Demographic Profile, 1999-2000

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CHAPTER 5

SUMMARY

This report contains findings from a population census carried out in 8 of the 19 unions of Chakaria, a remote rural upazila in the south-eastern coastal area of Bangladesh. ICDDR,B has been engaged in health activities in 6 of these 8 unions since 1994 through a community-initiated primary healthcare project. Two of the unions where ICDDR,B has no activities were designated as comparison areas to assess the impact of ICDDR,B activities on health and health-related behaviours.

The major components of ICDDR,B activities included health education on water and sanitation and diarrhoea, treatment of acute respiratory infection (ARI), reproductive and urinary tract infections, adolescent health, safe delivery practices, treatment of malaria and HIV/AIDS. In addition, project physicians and community paramedics–cum-midwives have been providing antenatal care (ANC), postnatal care (PNC), and limited curative services at village health posts established and managed by the villagers. Community midwives have also been providing home-based delivery assistance and referral services for complicated cases. The census involved visits to all the households during April 1999 -February 2000.

The census data revealed that 72% of 26,979 households comprised nuclear families, and the remaining households were extended/joint families. Seven percent of these households were female-headed, and 93% were male-headed. Ninety-six percent of main earners were male. Eight percent of the households had a radio, 4% had a television, and 10% had electricity supply at home.

Materials used in building dwellings included leaf, straw, polythene, corrugated tin, brick, and cement. Leaf was most commonly used for roof (37%), followed by tin (34%), straw (27%), cement (1%), and polythene (1%).

Ninety-nine percent of the households were Bangalee, and the remaining were of an ethnic minority group. Ninety-three percent were Muslims, 5% Hindus, and 1% Buddhists. Thirty-three percent of the Muslim households offered Qurbani. Eighty-seven percent of the Hindu households and 91% of the Buddhist households participated in Durgapuja and Buddha Purnima respectively.

About 26% of the households had family members who were members of an NGO (non-governmental organization) at the time of data collection. Fourty-nine percent of the households had at least one member selling menial labour at some point during the 12 months preceding the survey.

In total, 166,405 persons were living in the 8 unions on the day of data collection. The average household size was 6.2. The mean age of household members was 21 years, and half of them were aged less than 16 years. Approximately, 47% were aged less than 15 years, 44% 15-49 years, and 10% above 60 years. Just over half of the household members were male.

Around half of the population aged 6 years and above had never been to school. Of those who had been to school, 93% attended secular schools, and 7% attended religious schools. Of 69,981 males aged 6 years or above, 29% were students, 23% day labourers, 15% farmers, and 14% unemployed. A small proportion of males were self-employed, mostly in small trades. Of 65,247 females aged 6 years or above, 51% were housewives, 28% students, 17% unemployed, and 2% day labourers. The dependency ratio was 100.

Two percent of the males aged 13-20 years and 14% of the females aged 13-18 years were married at the time of the survey. The singulate mean age at marriage for male and female was 27 years and 20 years respectively.

Fourteen percent of currently-married women, aged less than 50 years, were pregnant on the day of the interview. The crude birth rate was 34 per 1,000 people during the 12 months preceding the survey. The total fertility rate was 5 per woman, and the general fertility rate was 158 per 1,000 women during the same period.

Twenty-four percent of the currently-married women of reproductive age (15-49 years) used modern family-planning methods at the time of data collection. The pill was most commonly used (56%), followed by injectables (23%), sterilization (11%), intrauterine device (IUD) (4%), condom (4%), and periodic abstinence, withdrawal, homeopathic, herbal, and other traditional methods (3%).

The crude death rate was 7 per 1,000 people during the year preceding the survey with a higher rate for males (8 per 1,000) than females (6 per 1,000). The infant mortality rate was 63 per 1,000 live births, and the child (1-4 years) mortality rate was 9 per 1,000 children with a higher rate for females (11 per 1,000) than males (8 per 1,000). The life expectancy at birth was 65 years for males and 67 years for females.

Seven percent of the households had subscribed to the community-initiated family health-card scheme in the intervention villages, and a small proportion (1%) of the households from the non-ICDDR,B area also had health cards. Three percent of the households used iodized salt at the time of data collection.

Six percent of the households did not have any fixed place for defecation, 22% had a ring slab or some kind of cemented latrine, and the remaining households had a fixed place without any protection against faecal contamination. Forty percent of the households were using only tubewell water for washing utensils, a similar proportion used either tubewell or surface water, and 21% only surface water. Ninety-three percent had at least one mosquito bed-net and 50% had two bed-nets.

Seventy-eight percent of the currently-married women received at least one Tetanus Toxoid (TT) shot and, on average, each woman had three TT shots during their lifetime. Eleven percent of mothers of children aged less than 24 months had at least one antenatal check-up during their pregnancy, 4% used safe delivery kits at the time of delivery, and 93% gave colostrum to the last born child soon after birth.

Eighty-six percent of children, aged 12-23 months, received BCG, 86% DPT1, 81% DPT2, 73% DPT3, and 64% measles vaccinations. Eighty-eight percent of the children, aged less than 6 months, were on breast milk only, and 12% had both breast milk and other foods. Thirteen percent of children, aged less than 24 months, had diarrhoea during the two weeks preceding the day of interview. Oral rehydration solution (ORS) was given to 62% of children during their diarrhoeal episodes. The mid-upper arm circumference (MUAC) was, on average, 12.9 cm for children aged 6-23 months, and 23% were severely malnourished with a MUAC of less than 12.5 cm.

Examination of the child nutritional status and health behaviours by socioeconomic characteristics also revealed the existence of socioeconomic differentials in child nutritional status and in many other health-related behaviours. Girls were more under-nourished than boys. The proportion of malnourished children was more in poorer households than in better-off households. The other variables with lower use-rates among poor compared to better-off households included contraceptive use, antenatal care, use of safe delivery kits, and ownership of safe and hygienic latrines. In all these cases, households in the highest quintile were in a 2-7-time better-off position compared to the households in the lowest quintile. The socioeconomic divide was absent for DPT1 and polio vaccinations among children, TT among women, use of ORS in the case of diarrhoea, and exclusive breast-feeding. However, children from the lower socioeconomic group had a lower measles immunization rate than the better-off group.

CHAPTER 1

Introduction

In 1994, the ICDDR,B began a series of efforts to mobilize the communities in some unions of Chakaria upazila to act for the betterment of their health. Since then, the Centre has been involved in the process of facilitating health-related activities initiated by the community members. This process included participatory needs assessment, identification of actions, development of action plans, and monitoring of their implementation and outcomes. Some unions outside the area of ICDDR,B activities were also identified to serve as comparison areas to assess the impact of the ICDDR,B activities on the health of the people of Chakaria. Details of these activities, and lessons learned along with the impact on health and health-related behaviours have been reported elsewhere (1;2).

In an attempt to make the ICDDR,B activities evidence-based, data on various aspects of people's lives were collected in Chakaria since the initiation of the project. One such activity was the socioeconomic census carried out during 1999-2000. This report is a compilation of findings from this census.

1.1 Chakaria

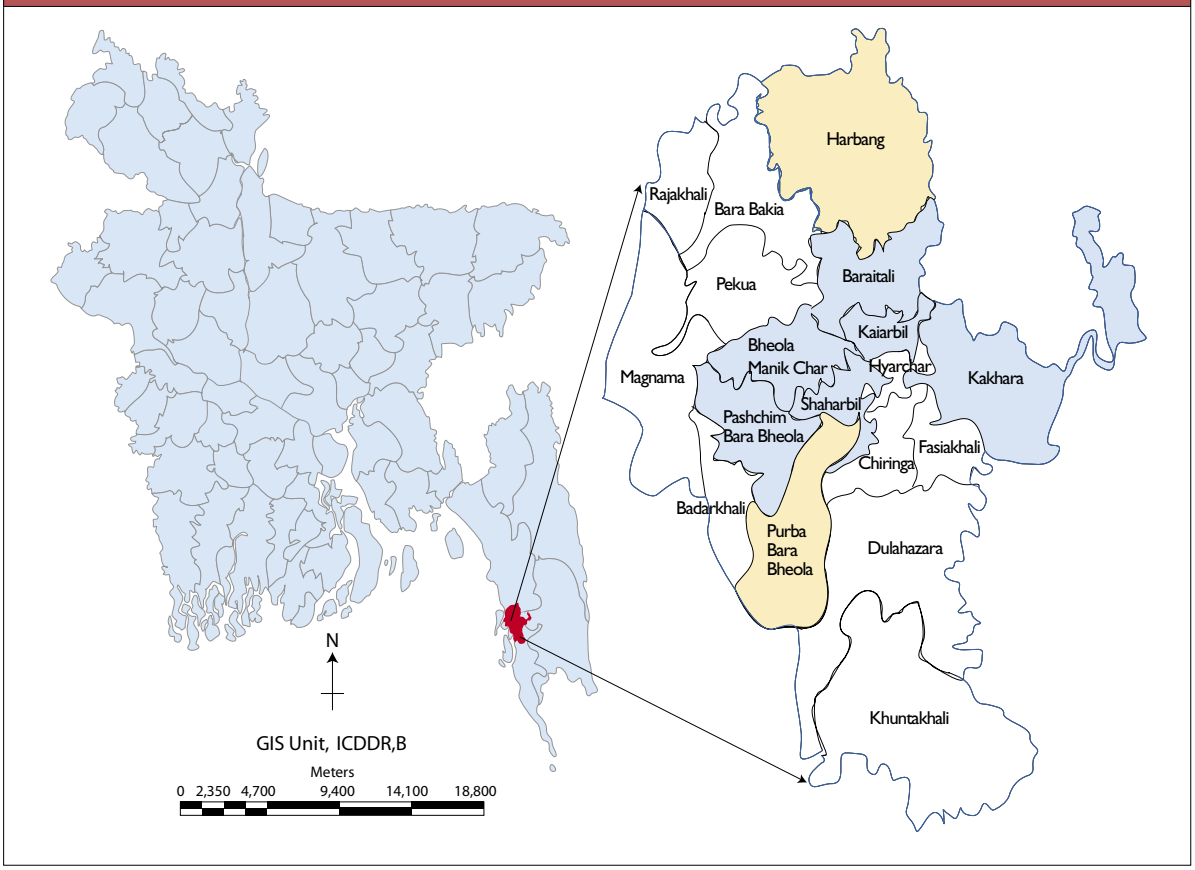
Chakaria, located on the southeast coast of the Bay of Bengal (Figure 1), is an upazila (sub-district) in the Cox's Bazar zilla (district) with a population of 400,000 living in its 19 unions (3). The highway from Chittagong to Cox's Bazar passes through Chakaria. The east side of Chakaria is hilly, while the west side along the Bay of Bengal is low.

The climate of Chakaria from May to September is characterized by tropical monsoons and heavy rainfall, while during the remainder of the year it is mostly dry. In addition to regular monsoon flooding, the location of Chakaria has made it very vulnerable to cyclones and tidal floods. The most recent cyclone in 1991 killed a large number of inhabitants and cattle. Innumerable houses and other properties were also damaged (4;5).

Despite its vulnerability to natural calamities, externally-financed development efforts in the area have been scarce. However, after the 1991 cyclone, Chakaria began to receive some attention from development agencies. Efforts were made to improve roads, build cyclone shelters, and undertake social forestation programmes. Traditionally, the main economic activities in the area have been agriculture, forestry, and sea fishing.

The population comprises mainly Muslims and a small number of Hindus and Buddhists. Traditionally, the area is strongly influenced by Islam, and the people are not very open to modern ideas or to outsiders. The nationwide anti-NGO backlash in 1994 originated in this area and occasionally resulted in physical assaults on NGO workers, especially female workers. Security in Chakaria is quite precarious, with incidences of banditry

Figure 1. Map of Chakaria showing CCHP intervention and comparison areas



observed during the initial days of the project. Disputes over land quite often resulted in violence and murders.

The census covered 8 unions, such as Baraitali, Kayerbil, Bheola Manik Char, Paschim Bora Bheola, Shaharbil, Kakara, Harbang, and Purba Bora Bheola. The first 6 unions were classified as the intervention area, covering 113 villages, and the remaining 2 unions were the comparison area with 70 villages. Union Health and Family Welfare Centres of the Government were operating in Baraitali, Kakara, Harbang, and Purba Bora Bheola unions. A national NGO was providing health and family-planning services in Bheola Manik Char and Purba Bora Bheola unions during the census. In the intervention area, the community members, with technical support from the project, established 7 village health posts, which provide limited curative health services to the villagers. The villagers also introduced a pre-payment family health-card scheme for the services at the village health posts.

Chakaria was also one of the poorest performing areas in the country in terms of health and family-planning performances. Despite the commendable successes of the national family-planning programme and the Expanded Programme on Immunization (EPI) during the last decade, the area had lagged far behind other parts of the country in

contraceptive prevalence and immunization coverage. The contraceptive prevalence rate (CPR) for rural Bangladesh was 43% during 1993-1994, but for Chakaria it was only 21% in 1994. During 1993-1994, the immunization coverage rates for children aged 12-23 months in rural Bangladesh were 83% for DPT1, 76% for DPT2, 65% for DPT3, and 68% for measles vaccinations. During the same period, the coverage rates for the census villages in Chakaria were 78% for DPT1, 73% for DPT2, and 66% for DPT3. For measles, it was only 48% (1;6;7).

CHAPTER 2

Methodology

A questionnaire was designed in Bangla to collect information and was pre-tested before finalization. Interviewers collected data either from the head of each household or from other informed members of the household during April 1999-February 2000. A household was defined as a group of people sharing the same kitchen. Individuals who spent at least one night per month in a household were considered as members of that household. Definitions of other variables included in the census have been provided in the text.

Thirty-three data collectors, with at least 12th grade of schooling and some experience in health and demographic data collection, were recruited from the locality to collect data. They were trained on how to use the questionnaire and on face-to-face interview techniques for a week both in the classroom and in the field. The data collectors were especially trained in taking measurements of mid-upper arm circumference (MUAC) until their errors in measurement were reduced to an acceptable level. The MUAC of children, aged 6-23 months, was measured using a tape developed by Teaching Aids at Low Cost (TALC), London, UK.

The fieldwork started with drawing a map of the study villages on paper with the help of the informed villagers and community health workers of the project. Locations of the households with serial numbers were indicated on the map, and a list of the households was prepared based upon the map. All the households were then visited for data collection. The filled-in-questionnaires were later tallied with the list of households to check for any omissions.

A six-member supervisory team, consisting of a statistician and 4 social science graduates, supervised the fieldwork. The supervisors randomly checked the quality of data by re-interviewing 5% of the respondents within two days of data collection.

The field research supervisors observed at least one interview of each of the interviewers daily. Collected data with errors or inconsistencies were marked and documented in a structured form. These errors or inconsistencies were discussed among the team members in a group and sent back to the field for correction. The field supervisor compared the data of interviews with that of the re-interviews and provided necessary feedback. The field supervisors also made random spot checks to ensure the quality of data. To cover absentees, at least two re-visits were made during the time when they were likely to be at home according to their neighbours.

A team of data-management personnel examined the data manually for apparent inconsistencies or errors. Open-ended questions were then coded, and data were entered into a relational database created using the FoxPro software.

2.1 Data analysis

In making an asset quintile, each household asset was assigned a factor score generated through the principal-component factor method. The resulting scores were standardized in relation to a standard normal distribution with mean 0 and standard deviation of 1 (8). Each household was then assigned a score for each asset, and the scores were summed for each household and divided into 5 quintiles ranging from the lowest to the highest score.

The socioeconomic status (SES) of a household was defined by combining the occupation of household members and construction materials of roof of the main dwelling. A household selling menial labour during the last 12 months preceding the survey was classified as poor; a household not involved in selling menial labour but having leaf or straw or polythene as the construction material of the roof of the main dwelling was classified as middle class; a household not involved in selling menial labour and having tin or cement with brick and iron rod as the construction material of the roof of the main dwelling was classified as rich.

It should be mentioned that the number of observations in the tables presented in this report differ due to missing information.

CHAPTER 3

Household characteristics

3.1 Household composition

The large majority (71.5%) of the households were nuclear in type, comprising children and their parents. The remaining households (28.5%) were extended/joint families with other relatives living in the same household (Table 1). The average household size was 6.2 (Table 2), which was comparable to the national figure of 6.0 (9).

Table 1. Distribution of households by family type

Family type	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Nuclear	71.4	71.9	71.5
Joint/extended	28.6	28.1	28.5

Table 2. Mean household size

Household size	Intervention villages (n=20,252)	Comparison villages (n=6,727)	All villages (n=26,979)
Mean household size	6.2	6.0	6.2

3.2 Household head

A household head was defined as the key decision-maker and the leader of the household. Most (92.9%) household heads were male. The mean age of the household heads was 43.2 years (Table 3). The proportion of female household heads (6.8%) in the census villages was less than the rural Bangladesh figure of 8.7% (10). Around one-third of the household heads made their living as a daily wager involving menial labour, such as rickshaw-pulling or employment at a farm and the like (Table 4). A small proportion of household heads usually lived outside the village; they, however, spent at least one night per month in the household (Table 5).

Table 3. Sex distribution and the mean age of households

Sex and age of household head	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Male head	93.2	92.0	92.9
Female head	6.8	8.0	7.1
Mean age (years)	43.3	42.7	43.2

Table 4. Proportion of daily wagers among household heads			
Daily wager	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Yes	36.9	33.2	36.0
No	63.1	66.8	64.0

Table 5. Proportion of household head by their usual residence			
Area of residence	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Living in the same village	94.7	95.0	94.8
Living outside the village	5.3	5.0	5.2

3.3 Gender of main earner

Most main earners of the households were male (Table 6). Around 4.4% of the main earners were female, quite often reflecting the vulnerability of the household.

Table 6. Distribution of household by gender of main earners			
Gender	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Male	95.5	96.0	95.6
Female	4.5	4.0	4.4

3.4 Assets

Ownership of various household items/assets can serve as proxies for household socioeconomic status. Table 7 presents the percentages of households owning various items. Ownership of items, such as television and radio, also indicate exposure of household members to the electronic media, thus putting them in an advantageous position in terms of access to national and international information (e.g. education, health, technology, etc.) compared to their counterparts.

Table 7. Proportion of households owning various assets

Assets	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Television	3.2	4.4	3.5
Radio	8.0	6.1	7.5
Hurricane	18.4	10.5	16.4
Lamp (home-made kerosene lamp)	87.5	85.5	87.0

3.5 Electricity supply

Supply of electricity in the area was a recent development. *Palli Biddut Samity* (rural electricity society) of the Rural Electrification Board was the main supplier of electricity in the study area. The connection fee for electricity was 500 taka (10 US dollar). In Chakaria, only one-tenth of the households had electricity connection during the time of data collection (Table 8).

Table 8. Proportion of households having electricity connection

Electricity	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Yes	9.5	11.2	10.1
No	90.5	88.8	89.9

3.6 Construction materials of main dwelling

The construction materials used in roofs and walls of the main dwellings were also observed during interviews. The majority (71.1%) of the households used bamboo, 22.9% mud, and 5.0% cement, and the remaining households used either tin or wood in making the walls. Most dwellings had an earthen floor. Nearly two-thirds of the dwellings had roofs made of leaves or straw, and one-third had roofs made of tin (Appendix A).

3.7 Ethnicity

The ethnic minority groups consisted of a very small proportion of the total households in Chakaria. Only 0.9% of the households belonged to an ethnic minority group called *Mog (Rakhain)*, and the remaining households were *Bangalees* (Table 9).

Table 9. Distribution of households by ethnicity

Ethnicity	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Bangalee	99.3	98.7	99.1
Mog (Rakhain)	0.7	1.3	0.9

3.8 Religion

Islam was the most dominant religion in the study area (93.3%). A small proportion of the households followed Hinduism (5.3%) and Buddhism (1.4%) (Table 10). These findings were similar to the national figures of 89.7%, 9.2%, and 0.7% for Islam, Hinduism, and Buddhism respectively (9) (Table 10).

Table 10. Distribution of households by religion

Religion	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Islam	93.9	91.5	93.3
Hinduism	5.0	6.0	5.3
Buddhism	1.1	2.5	1.4

3.9 Religious rituals

Households belonging to different religions observe different rituals at different times of the year. Rituals that encompass financial involvement include *fitra* and *qurbani* for Muslims, *Durgapuja* for Hindus, and *Buddha Purnima* for Buddhists.

Fitra is a donation in cash given by better-off Muslims to the poorest sections of the community during the month of Ramadan (fasting). *Fitra* was fixed at approximately 40 US cents per person during the census period. Those who received *fitra* were the poorest in the community. Three-quarters of the households gave *fitra*, while one-twentieth received it. Those who neither gave nor received *fitra* considered themselves as not well off enough to give and not poor enough to receive (Table 11).

Table 11. Distribution of Muslim households offering or receiving *fitra*

Fitra	Intervention villages (n=19,017) (%)	Comparison villages (n=6,115) (%)	All villages (n=25,172) (%)
Offered	72.4	81.3	74.6
Received	5.8	4.6	5.5
Neither received nor offered	21.8	14.1	19.9

Qurbani is an annual event among Muslims, which involves slaughtering/sacrificing animals. This is done either by a single household or in partnership with other households. This is considered to be obligatory for better-off Muslims. *Durgapuja* in Hinduism and *Buddha Purnim*a in Buddhism are the largest religious annual events. Usually households observe these events jointly with other households and the contribution of each household towards the celebration of the festival depends on their financial capacity, the better-off contributing more and the worse-off not participating at all.

In Chakaria, nearly two-thirds of the Muslim households did not sacrifice an animal in the last *Qurbani* with respect to the study period. The majority of Hindu and Buddhist households contributed towards observing their respective rituals jointly with other households (Table 12).

Table 12. Distribution of households by observance of religious rituals

Religion	Rituals	Intervention villages (%)	Comparison villages (%)	All villages (%)
Islam	Offered *Qurbani* in the last *Eid-ul-Azha*	34.2	27.4	32.5
	Total households	19,017	6,115	25,172
Hinduism	Participated in the last *Durgapuja*	81.7	98.5	86.5
	Total households	1,012	404	1,416
Buddhism	Participated in the last *Buddha Purnima*	86.3	94.9	91.0
	Total households	223	87	310

3.10 NGO membership

Among the various NGOs working in Chakaria, BRAC and Grameen Bank were the most dominant ones. Around one-fourth of the households had a membership of any NGO. Nearly 12% of these households had memberships either with BRAC or with Grameen Bank or with both. Distribution of the households by NGO membership is presented in Table 13. One-fifth of the currently-married women of these households were NGO members during the time of data collection (Table 14).

Table 13. Proportion of households with members having membership in various NGOs

NGO	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
None	74.4	74.8	74.5
BRAC	2.3	2.0	2.2
Grameen Bank	5.6	5.7	5.6
Other	13.4	14.0	13.6
BRAC and Grameen Bank	0.6	0.6	0.6
BRAC and other	1.1	1.1	1.1
Grameen Bank and other	2.2	1.4	2.0
BRAC and Grameen Bank and other	0.4	0.4	0.4

Table 14. Proportion of currently married women with NGO membership

NGO	Intervention villages (n=18,144) (%)	Comparison villages (n=5,908) (%)	All villages (n=24,022) (%)
None	78.8	80.4	79.2
BRAC	2.0	1.7	1.9
Grameen Bank	4.6	4.5	4.6
Other	10.9	10.4	10.8
BRAC and Grameen Bank	0.6	0.5	0.5
BRAC and other	0.9	0.9	0.9
Grameen Bank and other	1.9	1.3	1.8
BRAC and Grameen Bank and other	0.3	0.3	0.3

3.11 Selling of menial labour

Nearly half (48.6%) of the households in Chakaria depended on income from selling menial labour of their members (Table 15). The wage rate for menial labour is very low and making a living by selling menial labour is also considered to be an indication of income insecurity in the area. Thus, nearly half of the households in the area can be considered to be suffering from extreme economic vulnerability.

Table 15. Proportion of household with members selling menial labour

Selling menial labour	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Yes	50.3	43.4	48.6
No	49.7	56.6	51.4

CHAPTER 4

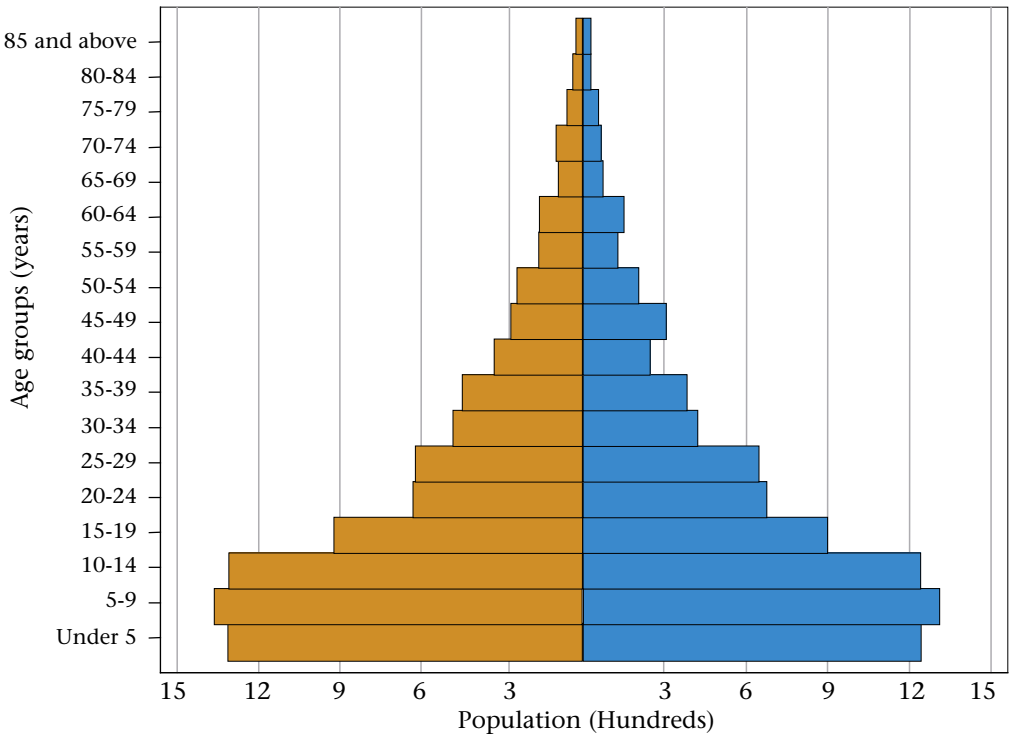
Population characteristics

4.1 Age and sex

In rural Bangladesh, there is no accurate birth-registration system. Few people keep personal records of births at home. Overall, there is a tendency to report age by guessing. To minimize age misreporting error, the study used a historical event calendar with events such as, year of war, famine, natural disaster, and religious festivals and tried to ascertain the age or date of birth as accurately as possible. Another method of calculating age of adult females used in the study was by locating the year of major milestones occurring in their lives in terms of their first menstruation, marriage, the gap between marriage and first child, and interval between births. Both the methods were used in a complementary manner to obtain accurate data on age.

There were 166,405 people living in the census villages on the day of data collection. The mean age of household members was 21 years. 46.7% of the household members were aged less than 15 years, 43.7% aged 15-49 years, and 9.6% above 60 years. Just over half of the household members were male. Figure 2 presents a population pyramid of the population of Chakaria for the year 1999-2000. The distribution of household members by age and sex is also shown in Appendices B and C. The pattern of the age structure reflected a high-fertility and high-mortality situation in the area.

Figure 2. Male and female population by age and sex, Chakaria, 1999-2000



4.2 Education

The literacy rate of the people of Chakaria, who were aged 7 years and above, was 32.8%, which was lower than the national figure (45.3%) for that period (9). In Chakaria, half (50.5%) of the household members aged 6 years and above had never been to school, one-third completed primary level, and the remaining one-sixth completed secondary or higher level of education. Those who had been to school mostly received education from secular schools (Table 16).

Table 16. Distribution of household members, aged 6 years and above, by completed years and type of schooling, 1999-2000

Years of schooling	Intervention villages (%)	Comparison villages (%)	All villages (%)
0	49.5	53.7	50.5
1-5	34.9	29.6	33.6
6-10	12.7	13.8	13.0
10+	2.9	2.8	2.9
Total households, no.	106,320	34,418	140,738
Type of school attended			
Secular	92.7	94.2	92.9
Religious	7.3	5.8	7.1
Total households, no.	53,691	15,935	69,626

4.3 Occupation

Of the male household members, 28.7% were students, 22.8% day labourers, 14.6% farmers, and 13.9% unemployed. Half (50.6%) of the females were housewives. Of the remaining, 28.0% were students, 17.0% unemployed, and 2.4% day labourers (Table 17).

Table 17. Distribution of household members by their main occupation, 1999-2000

Occupation	Intervention Villages (%)			Comparison Villages (%)			All Villages (%)		
	Male n= 52,997	Female n= 49,172	Both n= 102,169	Male n= 16,984	Female n= 16,075	Both n= 33,059	Male n= 69,247	Female n= 65,247	Both n= 135,228
Day labourer	23.2	2.2	13.1	21.6	3.0	12.6	22.8	2.4	12.9
Farming	15.6	0.2	8.2	11.6	0.2	6.0	14.6	0.2	7.7
Job	6.1	0.5	3.4	7.7	1.0	4.5	6.5	0.7	3.6
Small trade	5.4	0.2	2.9	8.4	0.2	4.4	6.2	0.2	3.3
Self-employed	6.2	0.5	3.4	6.9	1.0	3.9	6.3	0.5	3.5
House wife	0.0	52.0	25.0	0.0	46.5	22.6	0.0	50.6	24.5
Student	30.0	29.0	29.6	24.6	25.0	24.8	28.7	28.0	28.4
Un-employed	12.5	15.0	13.7	18.3	22.9	20.6	13.9	17.0	15.4
Others	1.0	0.4	0.7	0.9	0.2	0.6	1.0	0.4	0.7

4.4 Dependency ratio

Table 18 presents the dependency ratios as revealed from the census data. It can be seen from the table that the dependency ratio was about 100, which implies that there was one dependent person for every non-dependent person.

Table 18. Dependency ratio, 1999-2000

Age-group (years)	Intervention villages	Comparison villages	All villages
<15	58,919	18,911	77,830
15-64	62,815	20,488	83,303
65 and above	4,062	1,210	5,272
Dependency ratio per 100 population	100.3	98.2	99.8

The dependency ratio is calculated as the sum of 0-14-year olds and over 65-year olds and divided by the number of people aged 15-64 years (11)

4.5 Marriage

The mean age of currently-married men and women was 42 and 33 years respectively. 2.1% of males aged 13-20 years and 13.7% of females aged 13-18 years, were currently married. The singulate mean age at marriage was 26.7 years for males and 19.8 years for females. The proportions of widows and widowers were 5.4% and 0.5% respectively (Appendices D and E). Nearly 3% of women aged 30-40 years were abandoned by their husbands, the husbands having left without informing anyone and could not be traced for more than 6 months.

4.6 Pregnancy

One in every seven currently-married women was pregnant on the day of the interview. This was 1.8 times higher than the national figure of 7.8% for the year when data for this report were collected (10). This rate also reflected a higher fertility situation in the area compared to other areas of the country.

The pregnancy rate was related to the economic status of women. The pregnancy rate in the lowest asset quintile was 1.4 times higher than the rate in the highest quintile. The SES measurement showed a similar pattern in terms of distribution of pregnancy rate across various quintiles (Table 19).

Table 19. Proportion of currently-married pregnant women by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	3,888	16.9	1,297	16.9	5,185	16.9
Second	2,911	13.9	1,146	12.0	4,057	13.4
Third	2,932	15.8	1,076	11.9	4,008	14.8
Fourth	3,351	14.8	1,054	11.3	4,405	14.0
Highest	3,673	12.3	1,142	9.6	4,815	11.7
Total	16,755	14.8	5,715	12.5	22,470	14.2
SES						
Poor	8,429	15.3	2,484	13.8	10,913	15.0
Medium	4,051	15.2	1,578	12.4	5,629	14.4
Rich	4,275	13.4	1,653	10.6	5,928	12.6
Total	16,755	14.8	5,715	12.5	22,470	14.2

*Number of women

Table 20 presents pregnancy outcomes during the 12 months preceding the data-collection period. In this period, 3.9% and 2.8% of the pregnancies ended in stillbirths and abortions (induced and saponaceous) respectively. The stillbirth figure in Chakaria was higher than that of the Matlab comparison area (3.6%) in 1999. The abortion figure was considerably lower in Chakaria than that of the Matlab comparison area (11.2%) in 1999 (12). However, these figures are most likely to have been under-reported.

Table 20. Pregnancy outcome of currently-married women during the 12 months preceding the day of interview

Pregnancy outcome	Intervention villages (n=4,603)	Comparison villages (n=1,444)	All villages (n=6,047)
	(%)	(%)	(%)
Live birth	92.9	94.3	93.3
Stillbirth	4.1	3.3	3.9
Abortion	2.9	2.4	2.8

4.7 Fertility

Figure 3 and Table 21 present age-specific fertility rates. The highest fertility rate was observed among women aged 25-29 years, followed by women aged 20-24 years. The total fertility rate (TFR) in Chakaria was 5.1 children per woman, which was relatively higher than that in rural Bangladesh, where the TFR was 3.3 in 1999 (Table 22). During the time of the Chakaria Census, Chittagong division had a TFR of 4.0, and the Matlab comparison area had a TFR of 3.3 (10;12).

Figure 3. Age-specific fertility rates, Chakaria, 1999-2000

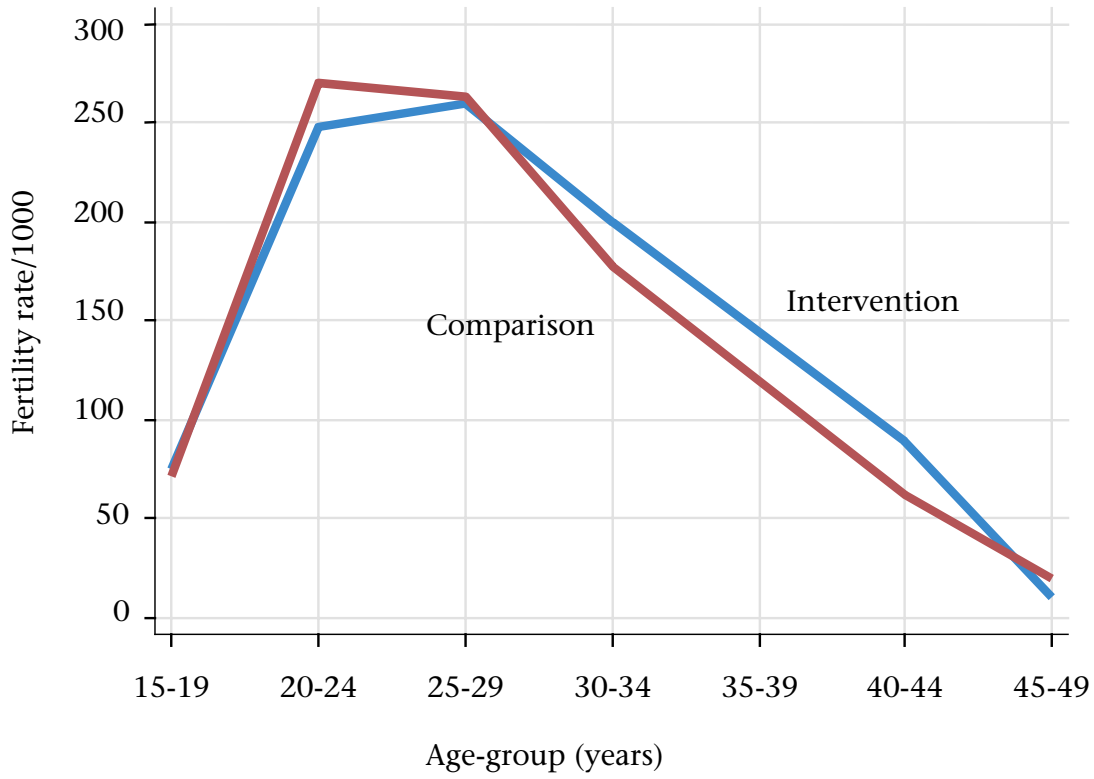


Table 21. Age-specific fertility rates per 1000 women

Age-group (years)	Intervention villages	Comparison villages	All villages
<19	74.7	71.7	74.0
20-24	248.2	270.6	253.8
25-29	259.6	262.9	260.5
30-34	199.6	177.7	194.1
35-39	144.0	116.4	137.7
40-44	89.0	62.4	82.9
45 and above	10.5	19.8	13.1

Fertility measurement indices are presented in Table 22. The crude birth rate was 33.9 per 1,000 women in Chakaria compared to 25.9 per 1,000 women in the Matlab comparison area in 1999 (12).

Table 22. Crude birth rates, general fertility rates, and total fertility rates

Rate	Intervention villages	Comparison villages	All villages
Crude birth rate per 1,000 population	33.8	33.9	33.9
General fertility rate per 1,000 women	158.5	157.9	158.3
Total fertility rate per woman	5.1	4.9	5.1

4.8 Family planning

One-fourth of the currently-married couples of reproductive age were using modern family-planning methods. This was nearly half of the national figure for rural Bangladesh, which was 42.2% during the same period (10).

In Chakaria, the contraceptive use rate in the lowest asset quintile was almost half of that in the highest quintile. Also, the use of modern family-planning methods was associated with the SES of the couples. The findings reflect that the contraceptive use rate increased steadily with a higher SES (Table 23).

Table 23. Proportion of currently-married couples of reproductive age with a non-pregnant wife using modern family-planning methods by asset quintile and SES of households, 1999-2000

Household status	Intervention village		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	3,231	17.6	1,078	17.8	4,309	17.6
Second	2,506	22.5	1,009	21.0	3,515	22.1
Third	2,469	24.8	948	22.3	3,417	24.1
Fourth	2,854	26.2	935	26.4	3,789	26.3
Highest	3,221	32.8	1,032	33.5	4,253	32.9
Total	14,281	24.8	5,002	24.2	19,283	24.7
SES						
Poor	7,140	22.0	2,141	19.6	9,281	21.5
Medium	3,437	24.3	1,383	23.3	4,820	24.0
Rich	3,704	30.8	1,478	31.5	5,182	31.0
Total	14,281	24.8	5,002	24.2	19,283	24.7

*Number of couples

Among the contraceptive methods used, the pill was most commonly used (55.7%), followed by injection (22.5%), sterilization (10.9%), and IUD (4.4%) (Table 24). The findings revealed that the preference for contraceptive methods was biased towards temporary birth control.

Table 24. Distribution of contraceptive users by methods used

Method	Intervention villages (n=3,905) (%)	Comparison villages (n=1,252) (%)	All villages (n=4,986) (%)
Pill	53.5	62.7	55.7
Injection	24.2	17.4	22.5
Sterilization	10.9	10.7	10.9
IUD	4.8	3.0	4.4
Condom	3.8	3.6	3.6
Others	3.1	2.6	3.0

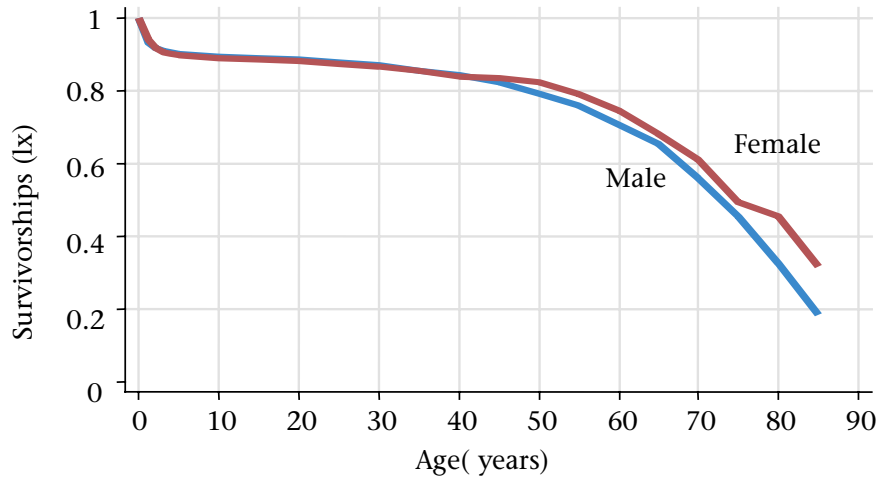
IUD=Intrauterine Device

4.9 Mortality

In 1999, the crude death rate in Chakaria was 6.9 per 1,000 population, which was lower than the rate in the Matlab comparison area (7.4 per 1,000 population). The infant mortality rate was 62.6 per 1,000 live births, and this was higher than the rate of 60.8 in Matlab comparison area in 1999 (Appendix F).

The life expectancy at birth was 64.6 years for males and 67.2 years for females in Chakaria (Appendix G). Both the life expectancies for males and females were lower than the figures for the Matlab comparison area, which were 65.4 years and 68.8 years for males and females respectively (12). In Chakaria, females had a higher probability of survival than males after the age of 40 years (Figure 4).

Figure 4. Probability of survival by age and sex



CHAPTER 5

Health and health practices

5.1 Family health-card holders

In 1998, the self-help organizations in the villages, with technical support from the Chakaria Community Health Project (CCHP), ICDDR,B, introduced a pre-payment family health-card scheme in the ICDDR,B intervention villages in Chakaria. Under this scheme, better-off families could buy a health card of one-year validity with taka 50 (1 US $) and poor families with taka 10 (20 US cents). The project physicians provided services at the health posts once a week. The consultation fee was taka 25 (50 US cents) for members of households enrolled in the family health-card scheme and taka 40 (80 US cents) for non-card holders. Among the health cardholders, the poor families received services at a subsidized rate of taka 5 (10 US cents), and for those who belonged to the poorest of the poor families, the consultation was free of any charge.

Nearly one-twentieth of the households bought a health card in the intervention area. A small proportion of the households in the comparison area also bought the health cards. The likelihood of buying a health card decreased with the declining SES of the households (Table 25).

Table 25. Proportion of family health card holders by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	4,553	2.1	1,528	0.8	6,081	1.8
Second	3,474	3.3	1,319	0.3	4,793	2.5
Third	3,382	4.6	1,258	0.6	4,640	3.5
Fourth	3,734	6.6	1,211	1.7	4,945	5.4
Highest	3,786	13.3	1,218	1.2	5,004	10.4
Total	18,929	5.9	6,534	0.9	25,463	4.6
SES						
Poor	9,877	3.5	2,897	1.3	12,774	3.0
Medium	4,802	6.0	1,850	0.7	6,652	4.5
Rich	4,833	11.5	1,909	0.7	6,742	8.4
Total	19,512	6.1	6,656	1.0	26,168	4.8

*Number of households

5.2 Consumption of iodized salt

The survey revealed that only 2.8% of the households in Chakaria used iodized salt for cooking on the day of the interview (Table 26). In general, the use of iodized salt was very low for the whole district of Cox's Bazar (5.0%) in that same year compared to the nationwide figure of 77.0% (13). The findings also indicate that the better-off households in Chakaria were more likely to use iodized salt for cooking (Table 26). The SES of a household was also associated with use of iodized salt. The households in the highest asset quintile had a 6.9-time higher likelihood of using iodized salt compared to the lowest quintile (Table 26). It should be mentioned that Chakaria is a coastal area where production of salt from seawater is common, and the locally produced salt reaches the market without having to go through mandatory iodization at the industries. This could be one of the main reasons behind such low levels of use of iodized salt in Chakaria.

Table 26. Distribution of households using iodized salt in cooking on the day of interview by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	4,465	0.9	1,526	2.0	5,991	1.2
Second	3,411	0.7	1,314	2.4	4,725	1.1
Third	3,346	1.1	1,256	2.5	4,602	1.5
Fourth	3,667	1.5	1,210	3.5	4,877	2.0
Richest	3,722	5.3	1,214	17.6	4,936	8.3
Total	18,611	1.9	6,520	5.3	25,131	2.8
SES						
Poor	9,723	1.1	2,888	1.1	12,611	1.1
Medium	4,722	1.5	1,848	5.1	6,570	2.5
Rich	4,773	3.9	1,910	12.3	6,683	6.3
Total	19,218	1.9	6,646	5.4	25,864	2.8

*Number of households
SES= Socioeconomic status

5.3 Ownership of latrine

Nearly one-fifth of the households had a ring slab or some kind of cemented latrine with protection against faecal contamination. Two-thirds had a fixed place without protection against faecal contamination. The remaining one-twentieth had no latrine (Table 27). The households belonging to the lowest quintile had comparatively much lesser access to a latrine that offered protection against faecal contamination. The rich, on the other hand, were 4 times more likely than the poor to own that type of latrine (Table 28).

Table 27. Distribution of households by type of latrine owned

Type of latrine	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Ring slab/ any cemented latrine with protection against faecal contamination	22.4	22.5	22.4
Any fixed place without protection against faecal contamination	72.8	70.0	72.1
No latrine	4.8	7.5	5.5

Table 28. Distribution of households owned ring slab or some kind of cemented latrine with protection against faecal contamination by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	4,581	0.1	1,535	0.0	6,116	0.1
Second	3,494	1.5	1,322	1.3	4,816	1.5
Third	3,411	33.1	1,263	25.6	4,674	31.0
Fourth	3,759	30.2	1,216	37.7	4,975	32.0
Highest	3,824	51.4	1,220	56.2	5,044	52.5
Total	19,069	22.5	6,556	22.6	25,625	22.5
SES						
Poor	9,917	12.7	2,903	11.1	12,820	12.4
Medium	4,820	21.4	1,844	17.4	6,664	20.3
Rich	4,855	43.4	1,905	45.4	6,760	44.0
Total	19,592	22.5	6,652	22.7	26,244	22.5

*Number of households
SES= Socioeconomic status

5.4 Sources of water for washing utensils

Since the use of tubewell water for drinking was universal in the area, information on sources of water for drinking was not collected during the survey. Information on other uses of water revealed that, for washing utensils, 40% of the households used tubewell water, and almost one-fifth of the households used pond or river water (Table 29).

The SES of a household was found to be associated with the use of pond or river water for washing utensils (Table 30). The use of pond or river water was 2.5 times higher in the households in the lowest quintile than in the households in the highest quintile. The SES based on occupation and construction material of dwellings also showed a similar pattern in the use of pond or river water.

Table 29. Distribution of households by water source used for domestic purpose

Source of water	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
Tubewell	38.3	43.8	39.6
Pond/river	19.7	23.4	20.7
Tubewell and pond /river	42.0	32.8	39.7

Table 30. Distribution of households which used pond or river water for washing utensils by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	4,520	26.7	1,526	33.4	6,046	28.4
Second	3,443	22.1	1,312	28.3	4,755	23.8
Third	3,364	21.6	1,257	25.1	4,621	22.6
Fourth	3,717	17.3	1,210	17.5	4,927	17.3
Highest	3,785	11.7	1,216	10.6	5,001	11.4
Total	18,829	20.1	6,521	23.6	25,350	21.0
SES						
Poor	9,836	22.3	2,892	27.4	12,728	23.4
Medium	4,793	21.9	1,846	26.9	6,639	23.3
Rich	4,841	13.2	1,909	15.4	6,750	13.9
Total	19,470	19.9	6,647	23.8	26,117	20.9

*Number of households
SES= Socioeconomic status

5.5 Number of mosquito bed-nets in households

The use of mosquito bed-nets is a must in Chakaria, for it being a malaria endemic area. These bed-nets provide protection against mosquito bites and, thus, against malaria. Findings from the census showed that, on average, a household in Chakaria had two mosquito bed-nets. One in every 15 households did not have a bed-net (Table 31). A household, on average, had one net for every three members. One net for every six members was observed in the lowest quintile as opposed to one net for every two members in the highest quintile (Table 32).

Table 31. Distribution of households by number of mosquito bed-nets owned

Number of nets	Intervention villages (n=20,252) (%)	Comparison villages (n=6,727) (%)	All villages (n=26,979) (%)
0	7.1	5.7	6.7
1	31.3	34.4	32.1
2	29.3	30.2	29.5
3	15.9	15.5	15.8
4	8.5	8.7	8.6
5 and above	7.9	5.5	7.3
Mean (no.)	2.2	2.1	2.1

Table 32. Average number of mosquito bed-nets owned by a household by asset quintile and SES of the household, 1999-2000

Household status	Intervention villages			Comparison villages			All villages		
	No.*	HH size	Net**	No.	HH size	Net	No.	HH size	Net
Asset quintile									
Lowest	4,581	4.7	0.8	1,535	4.7	0.8	6,116	4.7	0.8
Second	3,494	6.4	2.0	1,322	6.4	2.0	4,816	6.4	2.0
Third	3,411	5.9	1.9	1,263	5.9	1.8	4,674	5.9	1.9
Fourth	3,758	6.7	2.7	1,216	6.5	2.5	4,974	6.7	2.6
Richest	3,824	7.6	3.7	1,220	7.2	3.5	5,044	7.5	3.7
Total	19,068	6.2	2.2	6,556	6.0	2.1	25,624	6.2	2.1
SES									
Poor	9,995	5.9	1.7	2,912	5.7	1.6	12,907	5.9	1.6
Medium	4,856	6.1	2.1	1,859	6.1	2.0	6,715	6.1	2.1
Rich	4,890	7.0	3.2	1,918	6.6	2.9	6,808	6.8	3.1
Total	19,741	6.2	2.2	6,689	6.0	2.1	26,430	6.2	2.1

*Number of households; **Average number of bed-nets in a household
HH=Household; SES= Socioeconomic statuus

5.6 Tetanus toxoid vaccination shots for women

In Chakaria, less than one-third of pregnant women received at least the first shot of tetanus toxoid (TT) and one-tenth received both first and second shots (Table 33).

Receiving the first and second TT shots during pregnancy was associated with the economic status of pregnant women. The proportions of receiving the first and second TT shots increased steadily towards the higher quintiles (Tables 34 and 35).

Table 33. Proportion of pregnant women receiving TT shots during pregnancy

Number of TT shots	Intervention villages (n=2,681) (%)	Comparison villages (n=738) (%)	All villages (n=3,419) (%)
0	62.4	55.1	60.8
1	27.6	33.0	28.8
2	10.0	11.9	10.4

TT= Tetanus toxoid

Table 34. Proportion of pregnant women receiving first TT shots during pregnancy by asset quintile and SES of household, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	657	23.4	219	32.4	876	25.7
Second	405	26.2	137	27.0	542	26.4
Third	463	29.6	128	34.4	591	30.6
Fourth	497	28.0	119	38.7	616	30.0
Highest	452	33.0	110	39.1	562	34.2
Total	2,474	27.7	713	33.8	3,187	29.1
SES						
Poor	1,289	25.8	343	30.9	1,632	26.9
Medium	614	28.3	195	31.8	809	29.2
Rich	571	31.2	175	41.7	746	33.7
Total	2,474	27.7	713	33.8	3,187	29.1

*Number of women
SES= Socioeconomic status; TT= Tetanus toxoid

Table 35. Proportion of pregnant women receiving first and second TT shots during pregnancy by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	657	8.8	219	11.4	876	9.5
Second	405	8.4	137	8.8	542	8.5
Third	463	11.2	128	11.7	591	11.3
Fourth	497	8.9	119	16.0	616	10.2
Highest	452	13.7	110	20.0	562	15.0
Total	2,474	10.1	713	13.0	3,187	10.8
SES						
Poor	1,289	8.8	343	11.1	1,632	9.3
Medium	614	9.9	195	10.8	809	10.1
Rich	571	13.1	175	19.4	746	14.6
Total	2,474	10.1	713	13.0	3,187	10.8

*Number of women
SES= Socioeconomic status; TT= Tetanus toxoid

On average, each woman in Chakaria received 3 TT shots during their whole reproductive life (Table 36). The patterns of findings were almost similar across all quintiles and SES groups (Table 37).

Table 36. Distribution of currently married women by number of TT shots received during their reproductive life

Number of TT shots	Intervention villages (n=18,002)	Comparison villages (n=5,900)	All villages (n=23,902)
	(%)	(%)	(%)
0	21.4	23.3	21.9
1-3	41.4	32.8	39.3
4-6	29.8	23.6	28.2
7 and above	7.4	20.3	10.6
Mean (no.)	2.9	3.4	3.0

TT= Tetanus toxoid

Table 37. Distribution of currently-married women by number of TT shots received during their reproductive life by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	Mean	No.	Mean	No.	Mean
Asset quintile						
Lowest	3,928	2.5	1,302	3.3	5,230	2.7
Second	2,945	2.9	1,153	3.3	4,098	3.0
Third	2,964	2.9	1,082	3.4	4,046	3.0
Fourth	3,376	2.9	1,062	3.6	4,438	3.1
Highest	3,717	3.1	1,147	3.4	4,864	3.2
Total	16,930	2.8	5,746	3.4	22,676	3.0
SES						
Poor	8,537	2.7	2,497	3.1	11,034	2.8
Medium	4,089	2.9	1,588	3.5	5,677	3.1
Rich	4,304	3.1	1,661	3.7	5,965	3.3
Total	16,930	2.8	5,746	3.4	22,676	3.0

*Number of women
SES= Socioeconomic status; TT= Tetanus toxoid

5.7 Antenatal care and newborn care

Nearly one-tenth (11%) of the mothers, who had children aged around 2 years on the day of the interview, had received at least one antenatal check-up while they were pregnant with that child. The prevalence of antenatal check-up (32.1%) in Chittagong division during the same reporting year (10) was 3 times higher than the prevalence in Chakaria.

Table 38. Proportion of mothers of children, aged less than 24 months, receiving antenatal care by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	1,600	5.7	588	4.9	2,188	5.5
Second	1,154	6.0	455	9.7	1,609	7.0
Third	1,131	7.9	406	7.1	1,537	7.7
Fourth	1,260	10.2	384	13.8	1,644	11.1
Highest	1,259	24.1	351	31.3	1,610	25.7
Total	6,404	10.6	2,184	12.1	8,588	11.0
SES						
Poor	3,485	6.1	1,020	4.4	4,505	5.8
Medium	1,646	11.0	655	14.5	2,301	12.0
Rich	1,526	20.8	556	23.2	2,082	21.4
Total	6,657	10.7	2,231	12.1	8,888	11.0

*Number of mothers of children
SES= Socioeconomic status

Antenatal care was associated with the SES of mothers. The percentage of mothers receiving antenatal care in the highest quintile was 5 times more than the percentage in the lowest quintile.

On average, the use of safe delivery kits was very low in Chakaria. The use rate was even lower (2.0%) for the two lowest quintiles, there was, however, a slight increase for the third and the fourth quintiles (3.0%), and for the highest quintile, the use rate reached 10.0%.

Table 39. Proportion of mothers of children, aged below 24 months, using safe delivery kits by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	1,598	2.2	588	2.4	2,186	2.2
Second	1,153	2.1	455	3.1	1,608	2.4
Third	1,130	3.5	407	3.0	1,537	3.3
Fourth	1,263	3.0	383	4.7	1,646	3.4
Highest	1,260	8.5	352	16.5	1,612	10.2
Total	6,404	3.8	2,185	5.3	8,589	4.2
SES						
Poor	3,483	2.6	1,020	1.6	4,503	2.4
Medium	1,646	3.2	655	6.4	2,301	4.1
Rich	1,528	7.2	557	11.0	2,085	8.2
Total	6,657	3.8	2,232	5.3	8,889	4.2

*Number of mothers of children
SES= Socioeconomic status

Most newborns in Chakaria were given colostrum. The proportion of those giving colostrums to newborns was almost similar among all the SES groups (Table 40).

Table 40. Proportion of children, aged less than 24 months, given colostrums by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	1,603	91.8	587	91.0	2,190	91.6
Second	1,153	93.0	455	89.2	1,608	91.9
Third	1,131	93.2	406	92.6	1,537	93.0
Fourth	1,269	93.3	383	92.4	1,652	93.1
Highest	1,261	95.6	352	94.0	1,613	95.2
Total	6,417	93.3	2,183	91.7	8,600	92.9
SES						
Poor	3,491	92.9	1,018	91.5	4,509	92.6
Medium	1,647	93.0	655	89.9	2,302	92.1
Rich	1,530	94.8	557	93.4	2,087	94.4
Total	6,668	93.4	2,230	91.5	8,898	92.9

*Number of children
SES= Socioeconomic status

Nearly two-thirds of children, aged less than 24 months, received polio vaccination. The pattern was almost similar across all socioeconomic groups (Table 41).

Table 41. Proportion of children, aged less than 24 months, receiving polio oral vaccine by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	1,612	64.0	588	57.7	2,200	62.3
Second	1,155	60.9	455	56.0	1,610	59.5
Third	1,137	64.0	408	58.1	1,545	62.5
Fourth	1,270	64.7	384	60.7	1,654	63.8
Highest	1,263	66.2	353	63.7	1,616	65.7
Total	6,437	64.0	2,188	58.9	8,625	62.7
SES						
Poor	3,502	64.9	1,021	56.3	4,523	62.9
Medium	1,653	63.5	655	61.7	2,308	63.0
Rich	1,535	62.7	559	59.4	2,094	61.8
Total	6,690	64.0	2,235	58.7	8,925	62.7

*Number of children
SES= Socioeconomic status

5.8 Immunization of children

Approximately, 3 quarters of children, aged 12-23 months, received 3 shots of DPT, and two-thirds received a measles vaccination (Table 42). The immunization coverage for each of the vaccines in the census villages was lower than that of Chittagong division for 1999 (10).

Table 42. Proportion of children, aged 12-23 months, receiving vaccines

Vaccine	Intervention villages (n=3,120) (%)	Comparison villages (n=1,109) (%)	All villages (n=4,229) (%)
Oral polio vaccine	64.1	58.7	62.8
BCG	85.5	85.6	85.5
DPT1	86.7	85.6	86.4
DPT2	81.0	81.0	81.0
DPT3	72.3	76.0	73.3
Measles	62.8	67.5	64.1

Table 43-47 present the immunization status of children in Chakaria by their SES. Other than measles and DPT2, all the vaccines listed above were administered to immunize rich and poor children alike.

In the cases of measles and DPT2 vaccinations, the percentages of children receiving vaccines were associated with their SES. The number of children receiving measles and DPT2 vaccines in the highest quintile was 1.2 times and 1.1 times the number of children receiving vaccines in the lowest quintile respectively.

Table 43. Proportion of children, aged 12-23 months, receiving BCG vaccine by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	681	85.3	249	88.0	930	86.0
Second	445	85.2	194	82.5	639	84.4
Third	474	88.0	174	85.1	648	87.2
Fourth	531	87.8	172	88.4	703	87.9
Highest	530	90.4	147	91.8	677	90.7
Total	2,661	87.3	936	87.0	3,597	87.2
SES						
Poor	1,441	85.9	455	85.1	1,896	85.7
Medium	690	89.4	261	89.7	951	89.5
Rich	628	88.5	232	88.4	860	88.5
Total	2,759	87.4	948	87.1	3,707	87.3

*Number of children aged 12-23 months; SES= Socioeconomic status

Table 44. Proportion of children, aged 12-23 months, receiving DPT1 vaccine by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	680	86.3	249	88.4	929	86.9
Second	444	86.3	194	83.0	638	85.3
Third	474	89.7	174	83.9	648	88.1
Fourth	531	89.1	172	89.0	703	89.1
Highest	530	90.9	147	90.5	677	90.8
Total	2,659	88.4	936	86.9	3,595	88.0
SES						
Poor	1,439	87.3	455	84.8	1,894	86.7
Medium	688	90.0	261	90.0	949	90.0
Rich	629	89.4	232	87.9	861	89.0
Total	2,756	88.4	948	87.0	3,704	88.1

*Number of children
SES= Socioeconomic status

Table 45. Proportion of children, aged 12-23 months, receiving DPT2 vaccine by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	681	80.0	249	83.1	930	80.7
Second	445	80.9	194	79.9	639	80.6
Third	472	85.4	174	80.5	646	84.1
Fourth	531	84.2	172	86.6	703	84.8
Highest	530	87.9	147	89.1	677	88.2
Total	2,659	83.5	936	83.6	3,595	83.5
SES						
Poor	1,438	81.9	455	81.5	1,893	81.8
Medium	690	85.4	261	85.4	951	85.4
Rich	629	85.4	232	85.3	861	85.4
Total	2,757	83.5	948	83.5	3,705	83.5

*Number of children
SES= Socioeconomic status

Table 46. Proportion of children, aged 12-23 months, receiving DPT 3 vaccine by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	679	72.9	249	77.9	928	74.3
Second	444	72.8	194	73.7	638	73.0
Third	473	77.0	174	76.4	647	76.8
Fourth	531	76.5	172	83.7	703	78.2
Highest	529	80.5	147	86.4	676	81.8
Total	2,656	75.8	936	79.2	3,592	76.7
SES						
Poor	1,437	73.7	455	75.8	1,892	74.2
Medium	688	78.3	261	81.6	949	79.2
Rich	629	77.9	232	83.2	861	79.3
Total	2,754	75.8	948	79.2	3,702	76.7

*Number of children
SES= Socioeconomic status

Table 47. Proportion of children, aged 12-23 months, receiving measles vaccine by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	681	61.4	250	70.4	931	63.8
Second	445	65.6	194	66.5	639	65.9
Third	473	69.1	174	68.4	647	68.9
Fourth	530	66.6	172	79.1	702	69.7
Highest	529	73.0	147	80.3	676	74.6
Total	2,658	66.8	937	72.4	3,595	68.3
SES						
Poor	1,440	63.8	456	68.6	1,896	65.0
Medium	688	70.2	261	74.3	949	71.3
Rich	628	70.2	232	77.6	860	72.2
Total	2,756	66.9	949	72.4	3,705	68.3

*Number of children
SES= Socioeconomic status

5.9 Feeding practices of children

It was found that 88.3% of children, aged less than 6 months, were exclusively breastfed on the day of the interview (Table 48). The practice of exclusive breast-feeding for children, aged less than 6 months, was almost identical across all socioeconomic groups (Table 49).

Table 48. Feeding practices among children aged less than 6 months

Feeding practice	Intervention villages (n=2,143) (%)	Comparison villages (n=990) (%)	All villages (n=3,133) (%)
Exclusive breast-feeding	86.8	94.3	88.3
Breast-feeding and weaning food	13.2	5.7	11.7

Table 49. Proportion of children, aged less than 6 months, exclusively breastfed on interview day by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	420	84.3	125	96.8	545	87.2
Second	331	89.7	89	91.0	420	90.0
Third	318	84.9	76	93.4	394	86.6
Fourth	339	87.3	73	94.5	412	88.6
Highest	354	85.6	74	97.3	428	87.6
Total	1,762	86.3	437	94.7	2,199	88.0
SES						
Poor	934	86.2	184	96.7	1,118	87.9
Medium	450	86.7	153	92.2	603	88.1
Rich	451	87.1	119	95.0	570	88.8
Total	1,835	86.5	456	94.7	2,291	88.2

*Number of children aged less than 6 months
SES= Socioeconomic status

Thirty percent of children, aged 6-23 months, were exclusively breastfed on the day of the interview. Two-thirds were having other foods with breast milk, and the remaining were not on breast milk at all (Table 50). Weaning and breast-feeding practices were almost similar across all socioeconomic groups (Table 51).

Table 50. Feeding practices of children aged 6-23 months			
Feeding practice	Intervention villages (n=4,637) (%)	Comparison villages (n=1,237) (%)	All villages (n=5,874) (%)
Only breast-feeding	27.4	39.7	30.0
Breast-feeding and weaning	68.9	57.6	66.6
Weaning	3.7	2.7	3.5

Table 51. Proportion of children, aged 6-23 months, breast-feeding and weaning on interview day by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	1,087	67.5	318	58.8	1,405	65.6
Second	747	70.7	235	59.2	982	67.9
Third	762	67.7	204	51.0	966	64.2
Fourth	857	70.5	188	56.9	1,045	68.0
Highest	838	71.6	197	56.4	1,035	68.7
Total	4,291	69.5	1,142	56.7	5,433	66.8
SES						
Poor	2,360	67.8	526	55.3	2,886	65.5
Medium	1,092	70.9	344	58.1	1,436	67.8
Rich	1,004	71.1	292	57.9	1,296	68.1
Total	4,456	69.3	1,162	56.8	5,618	66.7

*Number of children
SES= Socioeconomic status

5.10 Prevalence of diarrhoea and use of ORS

Mothers of 13% of children, aged less than 24 months, reported that their children had diarrhoea during the last 15 days preceding the interview (Table 52). No marked difference was observed in the prevalence of diarrhoea across different socioeconomic groups (Table 53).

ORS was given to two-thirds of children with diarrhoea (Table 52). The socioeconomic status was not associated with the use of ORS during diarrhoeal episodes (Table 54).

Table 52. Prevalence of diarrhoea among children, aged less than 24 months, during 15 days preceding data collection

Diarrhoea	Intervention villages (%)	Comparison villages (%)	All villages (%)
Yes	13.8	10.6	13.0
No	86.2	89.4	87.0
Total no.	6,780	2,227	9,007
Proportion of children given ORS during diarrhoea episodes			
Yes	64.0	53.7	61.9
No	36.0	46.3	38.1
Total no.	936	236	1,172

ORS=Oral rehydration solution

Table 53. Prevalence of diarrhoea among children, aged less than 24 months, by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	1,597	14.1	588	9.9	2,185	13.0
Second	1,150	11.9	454	10.4	1,604	11.5
Third	1,128	11.7	407	11.1	1,535	11.5
Fourth	1,259	15.7	384	11.2	1,643	14.6
Highest	1,253	14.4	353	9.6	1,606	13.3
Total	6,387	13.6	2,186	10.4	8,573	12.8
SES						
Poor	3,476	13.9	1,020	9.7	4,496	13.0
Medium	1,641	13.8	655	11.0	2,296	13.0
Rich	1,521	12.7	558	10.8	2,079	12.2
Total	6,638	13.6	2,233	10.3	8,871	12.8

*Number of children
SES= Socioeconomic status

5.11 Child nutrition

Table 55 presents distribution of children by their MUAC. According to the World Health Organization (WHO), children with MUAC less than 12.5 cm are identified to be severely malnourished (14). Following this cut-off point, nearly one-fourth of children, aged 6-23 months, in Chakaria were severely malnourished.

The findings indicate that, the proportion of severely malnourished children was markedly higher among girls compared to boys (Table 55). Data also indicated that a child's nutritional status in Chakaria was inversely related to the child's economic status. The proportion of malnourished children decreased with increasing economic status (Tables 56 and 57).

Table 54. Proportion of children, aged less than 24 months, given ORS by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	224	62.5	58	43.1	282	58.5
Second	137	65.7	46	58.7	183	63.9
Third	131	67.2	45	53.3	176	63.6
Fourth	197	59.9	43	58.1	240	59.6
Highest	180	67.2	34	61.8	214	66.4
Total	869	64.1	226	54.0	1,095	62.0
SES						
Poor	484	63.4	99	50.5	583	61.2
Medium	224	63.8	71	52.1	295	61.0
Rich	193	65.8	60	63.3	253	65.2
Total	901	64.0	230	54.4	1,131	62.1

*Number of children
SES= Socioeconomic status

Table 55. Distribution of children by their nutritional status

MUAC (cm)	Intervention villages (%)			Comparison villages (%)			All villages (%)		
	Boys (n= 2,578)	Girls (n= 2,447)	Both (n= 5,025)	Boys (n= 879)	Girls (n= 803)	Both (n= 1,682)	Boys (n= 3,457)	Girls (n= 3,250)	Both (n= 6,707)
<12.5	18.5	25.6	22.0	26.4	31.3	28.7	20.8	27.5	24.0
12.5-13.4	39.2	38.1	38.6	35.1	34.8	35.0	37.8	37.1	37.5
13.5 +	42.3	36.3	39.4	38.5	33.9	36.3	41.4	35.4	38.5
Mean MUAC	13.3	13.1	13.2	13.2	13.1	13.1	13.3	13.1	13.2
SD	1.2	1.1	1.2	1.2	1.3	1.2	1.2	1.2	1.2

MUAC=Mid-upper arm circumference
SD=Standard Deviation

Table 56. Proportion of children, aged 6-23 months, severely malnourished (MUAC<12.5 cm) by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	(%)	No.	(%)	No.	(%)
Asset quintile						
Lowest	683	24.6	324	34.0	1,007	27.6
Second	444	23.4	243	28.0	687	25.0
Third	466	24.0	224	29.0	690	25.7
Fourth	561	19.1	197	23.4	758	20.2
Highest	509	16.5	178	21.4	687	17.8
Total	2,663	21.6	1,166	28.0	3,829	23.6
SES						
Poor	1,542	24.3	567	32.1	2,109	26.4
Medium	656	18.9	334	24.0	990	20.6
Rich	570	18.3	284	25.0	854	20.5
Total	2,768	21.8	1,185	28.1	3,953	23.7

*Number of children
SES= Socioeconomic status; MUAC=Mid-upper arm circumference

Table 57. Average MUAC (cm) of children, aged 6-23 months, by asset quintile and SES of households, 1999-2000

Household status	Intervention villages		Comparison villages		All villages	
	No.*	Mean	No.	Mean	No.	Mean
Asset quintile						
Lowest	683	13.1	324	12.9	1,007	13.1
Second	444	13.2	243	13.2	687	13.2
Third	466	13.2	224	13.1	690	13.2
Fourth	561	13.3	197	13.2	758	13.2
Highest	509	13.4	178	13.3	687	13.4
Total	2,663	13.2	1,166	13.1	3,829	13.2
SES						
Poor	1,542	13.1	567	13.0	2,109	13.1
Medium	656	13.3	334	13.3	990	13.3
Rich	570	13.4	284	13.2	854	13.3
Total	2,768	13.2	1,185	13.1	3,953	13.2

*Number of children
SES= Socioeconomic status; MUAC=Mid-upper arm circumference

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APPENDIX A

Construction materials used in main dwelling, 1999-2000

Construction materials	Intervention villages (%)	Comparison villages (%)	All villages (%)
Wall			
Cane/bamboo	72.5	67.3	71.2
Mud	21.9	25.9	22.9
Brick and cement	4.9	5.3	5.0
Tin	0.5	0.3	0.4
Wood	0.2	1.2	0.5
Total	100.0	100.0	100.0
Floor			
Mud	97.3	95.5	96.9
Brick and cement	2.0	3.1	2.3
Wood	0.3	1.0	0.4
Bamboo	0.4	0.4	0.4
Total	100.0	100.0	100.0
Pillar/Post			
Tree trunk/wood plank	55.6	52.5	54.8
Mud	20.2	25.9	21.6
Bamboo	18.4	15.5	17.7
Brick and cement	5.8	6.1	5.9
Total	100.0	100.0	100.0
Roof			
Leaf	35.5	42.1	37.1
Tin	33.6	37.0	34.4
Straw	29.4	19.3	26.9
Brick and cement	1.0	1.3	1.1
Polythene	0.5	0.3	0.5
Total	100.0	100.0	100.0
Total number of households	20,252	6,727	26,979

APPENDIX B

Population by age and sex, 1999-2000

Age (years)	Intervention villages			Comparison villages		
	Both sexes	Male	Female	Both sexes	Male	Female
Under 1	4,088	2,073	2,015	1,267	652	615
1-4	15,261	7,838	7,423	4,928	2,556	2,372
1	3,030	1,558	1,472	1,056	547	509
2	3,847	1,997	1,850	1,205	623	582
3	4,521	2,275	2,246	1,330	687	643
4	3,863	2,008	1,855	1,337	699	638
5-9	20,250	10,406	9,844	6,537	3,260	3,277
10-14	19,320	9,975	9,345	6,179	3,122	3,057
15-19	13,936	7,021	6,915	4,302	2,220	2,082
20-24	9,713	4,705	5,008	3,318	1,604	1,714
25-29	9,546	4,733	4,813	3,137	1,500	1,637
30-34	6,692	3,564	3,128	2,336	1,264	1,072
35-39	6,354	3,406	2,948	1,954	1,090	864
40-44	4,392	2,509	1,883	1,376	821	555
45-49	4,236	2,052	2,184	1,496	643	853
50-54	3,358	1,858	1,500	1,127	629	498
55-59	2,299	1,297	1,002	624	376	248
60-64	2,289	1,217	1,072	818	427	391
65-69	1,353	780	573	307	174	133
70-74	1,221	776	445	450	274	176
75-79	579	373	206	163	103	60
80-84	477	283	194	189	121	68
85+	432	241	191	101	46	55
Total	125,796	65,107	60,689	40,609	20,882	19,727

APPENDIX C

Percentage of population by age and sex, 1999-2000

Age (years)	Intervention villages			Comparison villages		
	Both sexes	Male	Female	Both sexes	Male	Female
Under 1	3.2	3.2	3.3	3.1	3.1	3.1
1-4	12.1	12.0	12.2	12.1	12.2	12.0
1	2.4	2.4	2.4	2.6	2.6	2.6
2	3.1	3.1	3.0	3.0	3.0	3.0
3	3.6	3.5	3.7	3.3	3.3	3.3
4	3.1	3.1	3.1	3.3	3.3	3.2
5-9	16.1	16.0	16.2	16.1	15.7	16.6
10-14	15.3	15.2	15.4	15.2	15.0	15.5
15-19	11.1	10.7	11.4	10.6	10.6	10.6
20-24	7.7	7.2	8.3	8.2	7.7	8.7
25-29	7.6	7.3	7.9	7.7	7.2	8.3
30-34	5.3	5.5	5.2	5.8	6.1	5.4
35-39	5.1	5.2	4.9	4.8	5.2	4.4
40-44	3.5	3.9	3.1	3.4	3.9	2.8
45-49	3.4	3.2	3.6	3.7	3.1	4.3
50-54	2.7	2.9	2.5	2.8	3.0	2.5
55-59	1.8	2.0	1.7	1.5	1.8	1.3
60-64	1.8	1.9	1.8	2.0	2.0	2.0
65-69	1.1	1.2	0.9	0.8	0.8	0.7
70-74	1.0	1.2	0.7	1.1	1.3	0.9
75-79	0.5	0.6	0.3	0.4	0.5	0.3
80-84	0.4	0.4	0.3	0.5	0.6	0.3
85+	0.3	0.4	0.3	0.2	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX D

Percentage of males by age and marital status for all villages, 1999-2000

Age (years)	Currently married	Divorced	Widower	Abandoned	Never married	Total	Total males
<5	0.0	0.0	0.0	0.0	100.0	100.0	13,119
5-9	0.0	0.0	0.0	0.0	100.0	100.0	13,666
10-14	0.7	0.0	0.0	0.0	99.3	100.0	13,097
15-19	1.4	0.1	0.0	0.0	98.5	100.0	9,241
20-24	17.3	0.2	0.2	0.1	82.2	100.0	6,309
25-29	58.9	0.3	0.3	0.4	40.1	100.0	6,233
30-34	87.9	0.1	0.2	0.2	11.6	100.0	4,828
35-39	96.0	0.2	0.6	0.8	2.4	100.0	4,496
40-44	98.4	0.3	0.4	0.2	0.7	100.0	3,330
45-49	98.4	0.1	0.9	0.1	0.5	100.0	2,695
50-54	98.4	0.3	0.9	0.2	0.2	100.0	2,487
55-59	97.8	0.1	1.9	0.1	0.1	100.0	1,673
60-64	95.4	0.1	4.0	0.2	0.3	100.0	1,644
65-69	96.0	0.3	3.4	0.0	0.3	100.0	954
70-74	92.9	0.1	5.6	0.5	0.9	100.0	1,050
75-79	88.9	0.4	10.3	0.2	0.2	100.0	476
80-84	85.9	0.5	12.4	0.2	1.00	100.0	404
85+	82.0	0.0	14.8	0.0	3.2	100.0	287
All ages	32.6	0.1	0.5	0.1	66.7	100.0	85,989

APPENDIX E

Percentage of females by age and marital status for all villages, 1999-2000

Age (years)	Currently married	Divorced	Widow	Abandoned	Never married	Total	Total females
<5	0.0	0.0	0.0	0.0	100.0	100.0	12,425
5-9	0.0	0.0	0.0	0.0	100.0	100.0	13,121
10-14	0.6	0.0	0.1	0.0	99.3	100.0	12,402
15-19	23.9	0.3	0.1	0.5	75.2	100.0	8,997
20-24	77.8	1.2	0.8	2.2	18.0	100.0	6,722
25-29	91.4	1.2	1.8	2.4	3.2	100.0	6,450
30-34	91.9	1.3	2.9	2.8	1.1	100.0	4,200
35-39	89.3	1.6	5.6	2.8	0.7	100.0	3,812
40-44	86.0	1.4	9.4	2.7	0.5	100.0	2,438
45-49	82.2	0.6	14.6	2.0	0.6	100.0	3,037
50-54	71.3	0.5	26.2	1.3	0.7	100.0	1,998
55-59	63.3	0.2	33.5	1.1	1.9	100.0	1,250
60-64	46.0	0.3	49.1	1.6	3.0	100.0	1,463
65-69	41.7	0.4	54.8	0.7	2.4	100.0	706
70-74	25.0	0.0	73.3	0.2	1.5	100.0	621
75-79	21.5	0.0	71.6	0.8	6.1	100.0	266
80-84	10.2	0.0	85.1	0.8	3.9	100.0	262
85+	8.7	0.0	86.3	0.0	5.0	100.0	246
All ages	35.7	0.5	5.3	1.0	57.5	100.0	80,416

APPENDIX F

Age-specific death rates by sex, 1999-2000

Age (years)	Intervention villages			Comparison villages			All villages		
	Both sex	Male	Female	Both sex	Male	Female	Both sex	Male	Female
<1*	61.2	64.6	57.7	69.7	75.6	63.5	63.2	67.3	59.1
1-4	9.0	7.3	10.8	10.6	9.4	11.8	9.4	7.8	11.0
1	21.8	17.3	26.5	20.8	18.3	23.6	21.5	17.6	25.7
2	8.8	7.0	10.8	10.0	8.0	12.0	9.1	7.3	11.1
3	5.5	4.8	6.2	7.5	7.3	7.8	6.0	5.4	6.6
4	3.1	2.5	3.8	6.0	5.7	6.3	3.8	3.3	4.4
5-9	1.6	1.8	1.4	1.4	1.5	1.2	1.6	1.8	1.4
10-14	0.9	1.1	0.6	1.8	1.9	1.6	1.1	1.3	0.9
15-19	1.2	1.1	1.3	0.2	0.0	0.5	1.0	0.9	1.1
20-24	1.5	1.5	1.6	1.2	1.2	1.2	1.5	1.4	1.5
25-29	1.8	2.7	0.8	3.2	0.7	5.5	2.1	2.2	2.0
30-34	2.4	2.0	2.9	4.3	5.5	2.8	2.9	2.9	2.9
35-39	3.3	2.6	4.1	2.6	3.7	1.2	3.1	2.9	3.4
40-44	3.4	4.8	1.6	4.4	6.1	1.8	3.6	5.1	1.6
45-49	5.7	8.3	3.2	2.7	4.7	1.2	4.9	7.4	2.6
50-54	7.4	7.5	7.3	9.8	12.7	6.0	8.0	8.8	7.0
55-59	13.9	13.9	14.0	12.8	16.0	8.1	13.7	14.3	12.8
60-64	16.6	14.0	19.6	15.9	18.7	12.8	16.4	15.2	17.8
65-69	23.7	26.9	19.2	39.1	46.0	30.1	26.5	30.4	21.2
70-74	36.9	37.4	36.0	57.8	54.7	62.5	42.5	41.9	43.5
75-79	38.0	50.9	14.6	79.8	116.5	16.7	47.2	65.1	15.0
80-84	90.1	102.5	72.2	111.1	132.2	73.5	96.1	111.4	72.5
85+	150.5	136.9	167.5	188.1	195.7	181.8	157.6	146.3	170.7
CDR**	6.7	7.1	6.3	7.9	8.9	6.7	7.0	7.6	6.4

*Rate per 1,000 live births
**Crude death rate

APPENDIX G

Abridged life table by sex for all villages, 1999-2000

Age (Years)	Male					Female				
	$_nm_x$	$_nq_x$	$_nl_x$	$_nL_x$	e_x	$_nm_x$	$_nq_x$	$_nl_x$	$_nL_x$	e_x
0	0.0673	0.0673	100,000	94,618	64.6	0.0591	0.0591	100,000	95,273	67.2
1	0.0176	0.0174	93,273	92,471	68.2	0.0257	0.0254	94,092	92,909	70.4
2	0.0073	0.0072	91,648	91,321	68.4	0.0111	0.0110	91,700	91,201	71.2
3	0.0054	0.0054	90,985	90,744	67.9	0.0066	0.0066	90,687	90,394	71.0
4	0.0033	0.0033	90,495	90,347	67.3	0.0044	0.0044	90,093	89,897	70.5
5-9	0.0018	0.0087	90,195	449,155	66.5	0.0014	0.0068	89,696	447,067	69.8
10-14	0.0013	0.0065	89,406	445,697	62.1	0.0009	0.0044	89,083	444,505	65.3
15-19	0.0009	0.0043	88,828	443,253	57.4	0.0011	0.0055	88,689	442,310	60.5
20-24	0.0014	0.0071	88,444	440,769	52.7	0.0015	0.0074	88,197	439,477	55.9
25-29	0.0022	0.0112	87,815	436,812	48.0	0.0020	0.0100	87,543	435,690	51.3
30-34	0.0029	0.0144	86,834	431,283	43.6	0.0029	0.0142	86,665	430,486	46.7
35-39	0.0029	0.0144	85,583	425,079	39.2	0.0034	0.0169	85,435	423,837	42.4
40-44	0.0051	0.0252	84,354	416,849	34.7	0.0016	0.0082	83,990	418,365	38.1
45-49	0.0074	0.0365	82,226	404,179	30.5	0.0026	0.0131	83,303	413,999	33.4
50-54	0.0088	0.0433	79,227	388,165	26.6	0.0070	0.0345	82,213	404,497	28.8
55-59	0.0143	0.0694	75,793	366,697	22.6	0.0128	0.0621	79,378	385,404	24.7
60-64	0.0152	0.0734	70,532	340,575	19.1	0.0178	0.0853	74,445	357,370	21.2
65-69	0.0304	0.1418	65,353	304,847	15.4	0.0212	0.1012	68,094	324,303	17.9
70-74	0.0419	0.1905	56,087	254,909	12.6	0.0435	0.1969	61,204	277,184	14.6
75-79	0.0651	0.2810	45,405	195,919	9.9	0.0150	0.0726	49,152	237,430	12.5
80-84	0.1114	0.4343	32,645	127,295	7.8	0.0725	0.3078	45,582	193,488	8.3
85+	0.1463	1.0000	18,466	126,187	6.8	0.1707	1.0000	31,550	184,795	5.9

Note: The Abridged life table is constructed applying the Greville's method illustrated in "The Methods and Materials of Demography, written by Shryock HS, Siegel JS, and associates; ACADEMIC PRESS, INC., USA, 1976; Page 249-72

$_nm_x$=Central mortality rate

$_nq_x$=Probability of dying between the ages x and x+n; $_nq_x = {}_nm_x/(1/n) + {}_nm_x\ [1/2+n/12({}_nm_x-Log_ec)]$; Log_ec=.095

$_nl_x$=Survivors to exact age x

$_nL_x$=Numbers of years lived by the total of the cohort of 100,000 births in the interval; $L_0=.20l_0+.80l_1$, $L_{85+}=1_{85+}/m_{85+}$

e_x=Life expectency at age x

APPENDIX H

Project team, 1999-2000

Name of Staff	Designation
Dhaka	
Abbas Bhuiya	Project Director
Peter Eppler	Technical Advisor
Kaneta Chowdhury	Research Officer
Sabrina Rasheed	Research Officer
Mohammad Mostafa	Senior Statistical Officer
Tajek Ahmed Choudhury	Administrative Officer
Ayesha Begum	Data Management Assistant
Chakaria	
Mohammad Iqbal	Public Health Physician
Nandita Nazma	Public Health Physician
AKM Nurul Islam	Senior Research Officer
Ariful Moula	Field Research Officer
Didarul Alam	Field Research Officer
Shahidul Hoque	Field Research Officer
Mosammat Mobashara	Field Research Officer
SM Manzoor Ahmed Hanifi	Research Officer
Sujaul Islam Mondol	Community Health Educator
Hosnera Rina	Community Health Educator
Ashish Pual	Data Management Assistant
Hasan Ahmed Forkan	Administrative Assistant
Anisa Khanam	Community Health Worker
Ayesha Begum	Community Health Worker
Aynun Nahar	Community Health Worker
Ishrat Jahan	Community Health Worker
Kaisarul Islam	Community Health Worker
Kawsar Jannat	Community Health Worker
Kohinoor Akther	Community Health Worker
Md. Sarwar Alam	Community Health Worker
Mobashweratul Jannat	Community Health Worker
Mohammad Taher Udidn	Community Health Worker
Mohammed Junaid	Community Health Worker
Mohammed Shafique Uddollah	Community Health Worker
Moklesha Khanom	Community Health Worker
Nahida Aktar	Community Health Worker
Naima Muktadir	Community Health Worker
Nelly Chakrabarty	Community Health Worker
Rayhan Begum	Community Health Worker
Shahidul Islam	Community Health Worker
Sharifunnessa Jahan	Community Health Worker
Wareshin Begum	Community Health Worker