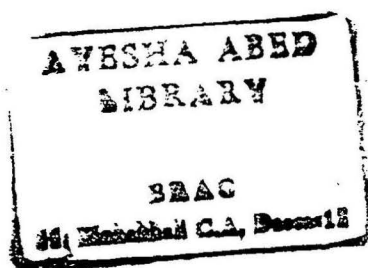


First Draft

TB Case Management at Community Level: Situation of the Treatment
Completed Patients in Women's Health and Development Programme

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SUMMARY

The Women's Health and Development Programme (WHDP) of BRAC initiated a community based tuberculosis (TB) control programme in 10 thanas in June, 1992 to complement and supplement the government TB control programme. The Research and Evaluation Division conducted a study on 181 TB patients who completed the anti-TB treatment on or before June, 1993 to investigate their a) socio-economic and physical condition and b) measures taken for the patients who had cough for more than four weeks after completion of treatment.

The study was conducted in all 10 thanas of WHDP in July 1994 and data was collected from 181 patients administering a pretested questionnaire.

About 72.0% of the patients were male indicative that the males are suffering from TB more than female or their morbidity is more reported than the female. Similar results were also found in national prevalence survey in 1987. Almost 67.0% of the patients came from target group (TG), possibly the programme was more focused to the TG families. Moreover, 65.0% of the patients were treated with 12 months, 16.6% with six months, 17.7% with eight months and 1.1% with nine months treatment regimens.

Sputum of 5 patients (2.8%) were found to be bacteriologically positive after one month completion of treatment. Moreover, a total of 9 patients died within one year after completion of treatment, but the causes of three deaths were found to be confirmed (cancer, madness and suicide).

Forty (24.4%) of the surveyed patients complained of history of cough for more than 4 weeks but 52.5% of them did not take any treatment, while sputum was examined for 32.5% of the cases.

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Programme Implications

1. All treatment completed patients should be followed once a month by the SSs to know the physical condition of the patients and necessary action need to be taken if anyone have cough for more than 4 weeks.
2. Culture and sensitivity tests should be done for all relapse and uncured TB patients for selection of appropriate regimen.
3. Chemoprophylaxis with anti-tuberculosis drugs may be done for resistance cases to reduce the sources of infection.
4. BRAC should introduce 8 months treatment regimen for all TB patients which is most cost effective and safe for such a community based TB control programme.
5. Streptomycin may be replaced by Ethambutol, as Ethambutol causes less adverse effects and develop less resistance than Streptomycin.

INTRODUCTION

Tuberculosis (TB) is one of the major killer diseases among the adult population in Bangladesh. About 80,000 people die from TB and another 150,000 new cases are coming up each year (Directorate General of Health Services, 1989). The national prevalence survey (1987-88) showed that 0.87% of the adult (15 years and above) population was suffering from open pulmonary tuberculosis who are transmitting the disease within the family and community.

The government of Bangladesh runs a TB control programme primarily through its 13 hospitals and 44 TB clinics, and all of these facilities are urban based. But a little has been done to control the TB hazards in the rural areas. To complement and supplement the government TB programme, BRAC initiated a community based TB control programme in 10 thanas through its Women's Health and Development Programme (WHDP) in June, 1992 (for detailed please see Islam, et. al., WHDP-Monitoring Report No. 15) based on the experiences gained from a TB control programme in Manikganj district (Chowdhury, et. al. 1991).

However, a little is known about the present condition of the TB patients who completed treatment provided by BRAC. To investigate the present physical condition of the patients, the Research and Evaluation Division (RED) undertook this study.

Objectives: The specific objectives of the study were to investigate:

- a. the socio-economic status of the patients who completed treatment;
- b. the physical condition of the patients; and
- c. the measures taken for the patients who had cough for more than four weeks after completion of treatment.

METHODS AND MATERIALS

Study Area: The study was conducted in all the 10 thanas of WHDP.

Study Population: All the TB patients who completed their treatment from BRAC on or before June 30, 1993 were considered as study population. Thus a total of 181 treatment completed TB patients were included in the study.

Data Collection: The data was collected by five well trained male interviewers in July 1994 by administering a pretested questionnaire. The information included: socio-economic condition of the patients, present condition of the patients who completed treatment before one year, results of sputum test one month after completion of treatment and what measures were taken for those having cough for more than four weeks.

Source of Data: Data was collected by interviewing the patients and/or their relatives through household visits and from programme records kept in WHDP offices.

Quality of Data: The interviewers were trained on the whole process of data collection before sending to the field and the researchers also checked the collected information both in field and head office.

RESULTS

The proportion of the treatment completed patients was highest in Mymensingh region. About 72.0% (130) of the patients were male. Among the male patients, 30.8% were more than 49 years old. While 33.3% of the female patients were 30-39 years old (Table 1). About 67.0% of the patients came from the target group (TG*) of BRAC.

* Household having less than 0.5 acre of cultivable land and any household member 12+ years sells manual labour for more than 100 days a year.

Table 1: Distribution of TB patients by age, sex and region.

Region	Male					N	Female					N
	< 20	20-29	30-39	40-49	50+		< 20	20-29	30-39	40-49	50+	
Mymensingh	1.3 (1)	20.0 (15)	22.7 (17)	25.3 (19)	30.7 (23)	100 (75)	-	16.7 (5)	30.0 (9)	30.0 (9)	23.3 (7)	100 (30)
Bogra	-	20.7 (6)	31.0 (9)	13.8 (4)	34.5 (10)	100 (29)	8.3 (1)	-	50.0 (6)	8.3 (1)	33.3 (4)	100 (12)
Dinajpur	-	11.5 (3)	38.5 (10)	23.1 (6)	26.9 (7)	100 (26)	-	33.4 (3)	22.2 (2)	33.3 (3)	11.1 (1)	100 (9)
All	0.8 (1)	18.4 (24)	27.7 (36)	22.3 (29)	30.8 (40)	100 (130)	2.0 (1)	15.7 (8)	33.3 (17)	25.5 (13)	23.5 (12)	100 (51)

Note: Figures within the parentheses indicate the number of sample.

Among the treatment completed patients, 64.6% were treated with 12 months treatment regimen, 16.6% with six months regimen and 17.7% with eight months regimen (Table 2). It should be mentioned that 6 and 8 months treatment regimens were introduced in two areas of Mymensingh region as pilot programme.

Table 2: Distribution of treatment completed patients by regimen.

Region	Treatment regimen (month)				N
	6	8	9	12	
Mymensingh	24.8 (26)	30.4 (32)	-	44.8 (47)	100.0 (105)
Bogra	-	-	4.9 (2)	95.1 (39)	100.0 (41)
Dinajpur	11.4 (4)	-	-	88.6 (31)	100.0 (35)
All	16.6 (30)	17.7 (32)	1.1 (2)	64.6 (117)	100.0 (181)

Note: Figures within the parentheses indicate the number of sample.

Sputum of all treatment completed patients were examined routinely one month after completion of treatment. Programme data revealed that 2.8% (5) of the patients were bacteriologically positive even one month after completion of treatment. All of these 5 patients were in Mymensingh region. Three patients were treated with six months regimen but rest of the 2 patients, treatment was initiated with 12 months regimen but treatment was completed with 6 months regimen.

However, at the time of survey, 6 (3.3%) of the patients were found to be sputum positive. Present condition of these patients were: one died due to TB, one migrated, one treating with 8 months regimen from BRAC, while one from a Mission hospital, two cases were found to have had resistance with anti-TB drugs (one treating irregularly and one untreated).

Among the treatment completed patients, 58.5% stated that they were feeling better, 23.2% not good, 6.1% bad, 2.8% very bad, 5.0% (9) died and 4.4% migrated (Table 3). According to the relatives of the deceased, they died due to various reasons, such as madness, severe respiratory problem, cough, fever, TB, jaundice, suicide, cancer, general weakness and loss of appetite (multiple responses were considered). Of the 9 dead cases, 7 received 12 months treatment regimen, one 6 months and one 8 months.

Table 3: Distribution patients by status of present condition.

Region	Physical Condition of Patients (According to Patient Relatives)						N
	Better	Not Good	Bad	Very Bad	Dead	Migrated	
Mymensingh	55.2 (58)	22.9 (24)	9.5 (10)	1.9 (2)	4.8 (5)	5.7 (6)	100.0 (105)
Bogra	63.4 (26)	24.4 (10)	2.4 (1)	-	4.9 (2)	4.9 (2)	100.0 (41)
Dinajpur	62.9 (22)	22.8 (8)	-	8.6 (3)	5.7 (2)	-	100.0 (35)
All	58.5 (106)	23.2 (42)	6.1 (11)	2.8 (5)	5.0 (9)	4.4 (8)	100.0 (181)

Note: Figures within the parentheses indicate the number of sample.

Among the 8 migrated patients, 6 were from Mymensingh and two from Bogra region. The reasons for migration were enquired. Five migrated elsewhere, one left Dhaka for job, one male patient migrated to his in-law's house permanently after completion of treatment and one female migrated to her husband's house who came to BRAC areas for treatment.

Out of the remaining 164 patients (excluding 8 migrated and 9 dead), 40 (24.4%) had cough for more than 4 weeks. Of the 40 patients, 52.5% did not take any measures for treatment. While different measures had been taken for rest of the patients including: sputum re-examination (32.5%), treating from a Mission hospital (5.0%), treating by private practitioners (5.0%), retreating from BRAC (2.5%) and sputum culture and sensitivity tests done (2.5) (Table 4).

Table 4: Distribution of patients who had cough for more than 4 weeks by measures taken.

Measures taken	Region			All
	Mymensingh	Bogra	Dinajpur	
Sputum re-examined	48.0 (12)	12.5 (1)	-	32.5 (13)
Did nothing	44.0 (11)	87.5 (7)	42.8 (3)	52.5 (21)
Treatment from a Mission hospital	8.0 (2)	-	-	5.0 (2)
Culture and sensitivity test done	4.0 (1)	-	-	2.5 (1)
Treating irregularly with anti-TB drugs	4.0 (1)	-	-	2.5 (1)
Treating privately with anti-TB drugs	4.0 (1)	-	14.3 (1)	5.0 (2)
Treating from BRAC	4.0 (1)	-	-	2.5 (1)
Homeopathy treatment	-	-	14.3 (1)	2.5 (1)
Taking syrup and tablets	-	-	28.6 (2)	5.0 (2)
N	100.0 (25)	100.0 (8)	100.0 (7)	100.0 (40)

Note: (1) Multiple answer's considered.

(2) Figures within the parentheses indicate the number of sample.

DISCUSSION AND CONCLUSIONS

The TB patients need to be followed for 5 years after completion of treatment. Though it was too early to undertake such a study to investigate the present condition of the patients. However, study results showed some important issues which need to be discussed here.

About 72% of the treated patients were male and the rest were female. Similar results were also found in national prevalence survey done in 1987. Two-thirds of the treated patients were from the TG families, the possible reasons might be the programme was more focused to the target group of the community and the prevalence of TB was also high among the TG families. The programme should be focused equally to both TG and NTG because tuberculosis is a contagious disease. However, the prevalence of TB among TG and NTG families need to be investigated through survey.

Nine patients (5.0%) died within 12 months after completion of treatment. It was not confirmed the actual causes of death except for three cases (due to cancer, madness and suicide). Apparently it may be assumed that the case fatality rate was low but we should keep in mind that in many countries the case fatality rate may be even more than 20.0% during five years after completion of treatment. Thus, it is essential to follow the treatment completed cases for at least five years to reduce mortality rate.

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Cough of 32.5% treatment completed patients were reexamined by BRAC who had cough for more than 4 weeks. It suggested that the programme followed the patient regularly which was a vital for such a community based TB control programme.

During survey, it was found that 6 patients had sputum (smear) positive (one died, one migrated, two relapse and two unconverted). Though the number seemed to be small but there is a great concern regarding the spread of TB bacilli by these four cases. Because it was estimated that one smear positive case may infect 10-14 persons per year and each untreated smear positive case continue to spread the bacillus for an average 2 years. Thus, a smear positive case of tuberculosis will lead to infect new 20-28 persons before dying or become smear negative (Stylbo, 1985 and Sutherland and Fayers, 1975). In this situation what BRAC can do? BRAC should treat all these cases with appropriate drugs after culture and sensitivity tests, simultaneously can examine the sputum of all suspected household members in a certain interval for case detection. Moreover, the chemoprophylaxis may be continued for the resistance cases, as we know chemoprophylaxis for smear positive cases for 6-12 months reduces the number of sources of infection to a great extent.

Out of 8 migrated cases, only one left for job, five could not be traced out and two patients migrated to their in-law's house. Presumably, the latter 7 cases migrated to BRAC programme areas for

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treatment. Possibly, the quality of anti-TB treatment provided by BRAC motivated the people even from non-BRAC areas which is prestigious to BRAC. Even from BRAC perspective, the programme should not give anti-TB treatment to any outsiders because it may create many problems like drop out, migration and reduced follow up of the patients after completion of treatment. However, BRAC should have a clear policy for patient registration.

One-fifth of the treated patients had cough for more than four weeks. Of course, cough is the most frequent symptoms of respiratory problems, such as pneumonia, lung TB, bronchiectasis, bronchitis, asthma and bronchial carcinoma (Davidson, 1984). In this situation, it is very difficult to attain a confirmatory diagnosis. On the other hand, with the existing work load, it is not even possible to follow all the treatment completed patients by programme organizers (POs) routinely. In this regard, all treatment completed patients should be followed once a month by SSs and necessary measures (viz. sputum examination, retreatment and referral) may be taken when needed.

The costs of any tuberculosis control programme comprises many components such as costs of drugs, staff salaries, transport and training. In BRAC's programme, the cost of short-course chemotherapy is much higher than the standard 12 months chemotherapy (Annexure), but the recurring cost is much higher for the standard 12 months chemotherapy. Two studies in Indonesia showed that per

case cured by short-course chemotherapy was more cost-effective (Barnum, 1986; Joesoef et. al, 1989). Now the question is that which therapy would be the best in the context of BRAC? Considering the toxicity of drugs and its costs, the 8 months treatment course would be the choice, because the drugs for 6 months therapy are most hepatotoxic than any other courses. Moreover, the combined cost for drugs and recurring costs of 8 months regimen is not much higher than 12 months regimen. We should also remember that the short-course regimen with higher cure rate leads to a rapid reduction in the risk of tuberculosis infection and the incidence of active tuberculosis, which is the ultimate goal of BRAC's community based TB control programme.

Streptomycin may be replaced by Ethambutol as the British Thoracic Association showed that Streptomycin had a higher incidence of adverse reaction (8%) compared with the Ethambutol (0%). Moreover, in Bangladesh, the rate of resistance with Streptomycin to TB bacilli is higher than Ethambutol (Islam, et.al., 1984).

It seems that BRAC's tuberculosis programme is functioning well. Many studies suggested that short-course therapy is most convenient in all aspects. However, further study is needed before introducing short-course chemotherapy in BRAC.

RECOMMENDATIONS

1. All treatment completed patients should be followed once a month by the SSs to know the physical condition of the patients and necessary action need to be taken if anyone had cough for more than 4 weeks.
2. Culture and sensitivity should be done for all relapse and uncured TB patients for selection of appropriate regimen.
3. Chemoprophylaxis with anti-tuberculosis drugs may be done for resistance cases to reduce the sources of infection.
4. BRAC should introduce 8 months treatment regimen for all TB patients which is most cost effective and safe for such a community based TB control programme.
5. Streptomycin may be replaced by Ethambutol, as Ethambutol causes less adverse effects and develop less resistance than Streptomycin.

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Annexure

BRAC provides three types of regimen (6 months, 8 months and 12 months) for the treatment of TB patients. Among the three regimens 6 monthly regimen is the costliest one and 12 monthly regimen is the cheapest. Six months treatment regimen of Rifampicin plus Isoniazid supplemented by streptomycin and Pyrazinamide for the first two months, which costs about Tk. 1900/-. Two months treatment regimen of Streptomycin, Rifampicin, Pyrazinamide and Isoniazid followed by six months treatment with Isoniazid and Thiacetazone, costs about Tk. 1000/-. While 12 months treatment with Streptomycin 2 months and 12 months Isoniazid plus Thiacetazone costs about Tk. 450/-.