Bull. Org. mond. Santé
Bull. Wld Hlth Org. } 1970, 43, 17-34

A Socio-epidemiological Study of Out-patients Attending a City Tuberculosis Clinic in India to Judge the Place of Specialized Centres in a Tuberculosis Control Programme*

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In India, specialized tuberculosis clinics exist mostly in cities. These clinics treat mainly persons with an awareness of symptoms who present themselves of their own accord. The few persons without symptoms are those who have been advised to have an examination. The urge to attend a specialized centre, presumably motivated by suffering or discomfort from symptoms and by awareness that specialized services exist, does not appear to be strong enough to overcome all the "obstacles" that lie between the patient and the tuberculosis clinic. A distance of 4 miles (6.4 km) or more is a major obstacle, irrespective of where the town limits lie. The socio-economic value of the patient to his family also appears to influence attendance. There is evidence that most patients first approach treatment sources, without regard to the nature of the service, whether specialized or general. It has been observed that if the quality of service rendered by a centre is unsatisfactory, the patient may constantly search for "better" treatment. Social considerations, other than suffering, which influence attendance could be termed "social preference". The justification for strengthening general health institutions (with adequate means for the diagnosis and treatment of tuberculosis), without taking urban or rural factors into consideration, is discussed in the light of the findings of this study.

As specialized institutions for the diagnosis and treatment of tuberculosis, tuberculosis clinics came into existence at a time when special expertise was considered to be essential. These clinics were located largely in cities. It was believed that the few rural tuberculosis patients would avail themselves of the specialized city services because people have a predilection for specialists and specialized institutions. Many a city tuberculosis clinic even took pride in the number of patients from distant rural areas attending it. A major change has occurred in this situation; both the diagnosis and treatment of tuberculosis have become simple enough to fall within the purview of the general practitioner. X-ray diagnosis—which requires comparatively greater skill—is no longer believed to be the most reliable diagnostic procedure. Only those cases in which tubercle bacilli have been demonstrated are now considered as "cases" of tuberculosis, the rest are merely "suspect cases". The success achieved with chemotherapy has relegated older, more complicated, forms of treatment to the background. The belief that people will always make use of specialized services, wherever these are, and that the demand for such services will go up with rising levels of education and urbanization in this country, needs investigation.

Recent advances in tuberculosis research have led to the planning of comprehensive control programmes on a community-wide basis. In India, as in some other countries, existing city tuberculosis clinics have been made the pivot of these programmes. For this purpose they are re-named "tuberculosis control centres" and are entrusted with additional managerial functions such as planning, organization and programme supervision.

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However, the observation that the traditional clinical function of these centres and their newer organizational role have often been incompatible (contrary to what was expected), and sometimes have even clashed conceptually, suggests that it is necessary to define clearly the place of specialized centres in tuberculosis control programmes.

Much sociological information is already available regarding awareness of symptoms suggestive of pulmonary tuberculosis in a rural community and the extent to which rural patients seek relief (Banerji & Andersen, 1963). There are hardly any specialized tuberculosis institutions in the countryside, and rural patients will contact general health institutions first. It would be interesting to know if city patients, who are expected to be more knowledgeable about the nature of their symptoms and better informed about the existing specialized services, go directly to tuberculosis clinics more often than to general health institutions. Sociological information regarding motivation patterns is necessary in order to understand the differences in this respect between town and country dwellers. For instance, do most of the out-patients of city tuberculosis clinics go there because of a primary urge to do so, or because they have been referred by general institutions and general practitioners?

OBJECTIVES

The objectives of this study were as follows:

(1) to inquire into simple epidemiological characteristics of out-patients attending a city tuberculosis clinic (centre) for the first time;

(2) to study their sociological characteristics—profession, literacy, awareness and duration of symptoms, distance of residence from the clinic, etc.;

(3) to ascertain from each patient the exact reason for his attendance, whether or not he had received treatment previously, the nature of that treatment, and, if applicable, the reason why he did not return to learn the result of investigations carried out at his first visit.

It was expected that these observations would show how patients are actually utilizing the tuberculosis services provided for them, especially with regard to the following points:

(1) Do patients prefer specialists and specialized tuberculosis services; do they spontaneously make use of such services, wherever they may be located? Conversely, do general hospitals, dispensaries and private practitioners freely avail themselves of the specialized services and refer their patients to them?

(2) Do patients under the pressure of their symptoms attend specialized tuberculosis centres without hindrance, or do certain obstacles prevent or discourage them from attending?

(3) Does the attendance pattern vary between urban and rural patients? More specifically, do rural patients attend tuberculosis clinics mainly after being referred from rural dispensaries (on account of a higher threshold of suffering, ignorance or apathy)? Do city patients attend specialized tuberculosis centres directly (on account of a keener awareness of symptoms and motivation to take action)?

(4) Does this pattern justify the existence of city tuberculosis clinics?

MATERIAL AND METHODS

Study area

The requirements of the study were (1) a situation in which a specialized tuberculosis clinic (centre) had been made the pivot of a tuberculosis control programme; (2) socio-epidemiological data on out-patients attending such a centre for the first time, taking care that the study did not interfere with their normal behavioural pattern; and (3) a study area where the programme had not been introduced recently and where the behavioural pattern itself was stable.

The Bangalore District Tuberculosis Programme, chosen for this study, is among the oldest in South India. The Lady Willingdon Tuberculosis Demonstration and Training Centre, Bangalore, was started as a tuberculosis clinic over two decades ago. It is now the largest tuberculosis diagnostic and treatment centre in the middle of the city. In early 1961, this Centre was upgraded and became the pivot of a wider city tuberculosis control programme. At that time, there was intensive publicity among the city population and a BCG team was employed to undertake systematic BCG vaccination and refer persons with chest symptoms to the Centre. Also, a mobile X-ray unit started to make weekly visits to 8 corporation health centres for extended case-finding. In 1963, the Centre was made the District Tuberculosis Centre for organizing a comprehensive and fully integrated tuberculosis control programme in almost the whole of the Bangalore district (some parts however were left for a longitudinal epidemiological study undertaken by the National Tubercu-

losis Institute). The concept, the organizational structure, and the dynamics of the District Tuberculosis Programme have already been described (Piot, 1962; Nagpaul, 1967). At the time of this study (in 1966), the population of the city was 1.4 million and that of the surrounding rural district 1.5 million. In order to discharge its role as District Tuberculosis Centre, the Centre began to assist and guide all the rural institutions of general health (in the Bangalore district) in tuberculosis case-finding (by direct microscopy) and treatment (domiciliary chemotherapy) for the populations under their own jurisdiction. However, all urban and rural health institutions were expected to refer their patients to the Centre for further X-ray examinations.

This procedure was meant to bring a specialized tuberculosis diagnosis and treatment service to the very doorstep of the people and the general medical profession. Thus, in both urban and rural areas (especially the former), patients had every opportunity to make direct use of the specialized facilities provided at the Centre. However, if they first contacted medical practitioners or general health institutions, they would be referred to the Centre for diagnosis.

Methodology

The study was planned and conducted by the staff of the National Tuberculosis Institute, Bangalore (NTI). The utmost care was taken to avoid interference with the routine work of the Centre (already fully described by Banerji & Andersen, 1963). At his first visit, each patient was registered, and given an intradermal tuberculin test (if aged below 40 years), interviewed, asked to provide a spot specimen of sputum; a skiagram of the chest was taken (if the patient was aged 5 years or over). He was then advised to return on the third day to learn the result of these tests and to receive treatment if necessary. Those who did not return were not followed up. Only those who attended the Centre for the first time were interviewed in this study.

Interview technique

An experienced NTI social investigator (2 during peak hours) took up an unobtrusive position outside the X-ray room. Sample patients (according to daily registration numbers) could thus be intercepted and interviewed before they entered the X-ray room. The first questions were always non-suggestive, but direct questions were put fairly soon if helpful answers were not forthcoming. Questions were put to elicit the following information:

(1) the patient's correct residential address (close questioning was necessary to distinguish true city residents from persons who had come from rural areas, although currently residing with relatives in the city; a mere postal address was not regarded as adequate, and information about prominent neighbours, nearby landmarks, etc., was also recorded);

(2) the reason for attending the Centre on that day;

(3) if previous treatment had been received, and the source and nature of such treatment.

The average interview time was 5 minutes. The noisy and crowded environment of the clinic and the limited objectives of the study rendered unnecessary an ideal interview situation or probing of patients in depth. For the purpose of this study, only true residents of Bangalore City were eligible to return on the third day, and in any case not later than 10 days after the initial visit, to learn the result of their examination. If they did not do so, they were visited in their homes after clinic hours by the same social investigator and asked the reason for their failure to return.

Period and duration of study

Since Andersen & Banerji (1963) had carried out an earlier study among out-patients of the same centre from March to May 1961, it was decided, for purposes of comparison, to carry out the present study during approximately the same period and to continue the intake of patients until about 500 consecutive cases of tuberculosis had been diagnosed at the Centre, according to its own routine.

The intake of new out-patients lasted for 11 consecutive weeks (61 working days), from 21 February to 17 May 1966, during which period 5300 new out-patients were registered at the Centre.

Study population and examinations

Of the 5300 new out-patients registered at the Centre during the intake period, 2658 (50%) were selected at random to be the study population. For this purpose, a fresh list of random registration numbers was given daily to the social investigator, who intercepted and interviewed the persons with the corresponding numbers. The 233 (9%) persons below 5 years of age were eliminated because neither sputum nor X-ray examinations were feasible in the 0–4 years age-group, and hardly any cases were expected in this group. Thus 2425 persons remained eligible for interview and sputum examination. Children aged 5–14 years were interviewed by proxy

through the adults who accompanied them. Of the interviews that took place, 22 (0.9%) were later found to have been either unsatisfactory or incomplete and had to be discounted, leaving 2403 patients for analysis. Of these 2403 patients, 1985 (83%) resided within the city and 418 (17%) had come from the surrounding rural area. The NTI laboratory technician collected 1 sputum specimen on the spot from each interviewed person, except the few who, with the best of efforts, could not produce any sputum. The samples were transported immediately to the NTI for complete bacteriological examination.

Missed cases

The routine at the Centre is to use X-ray examination as the basic "screening" procedure for diagnosis in persons aged 5 years and over. Sputum is collected on the third day only from those who return and have X-ray evidence of disease. For the purpose of this study, persons aged 5 years and over were asked to provide sputum at their first visit. This provided an interesting opportunity to study the chances of missing tuberculosis patients, mainly because of differences in case-finding procedures. These findings will be reported in another paper.

Definitions of terms

Definitions of some important terms used in the study are given below.

Terms	*Definitions*
New out-patients (attendance)	Persons who attended the Centre for the first time, for the purpose of diagnosis
Persons with symptoms	New out-patients with symptoms suggestive of pulmonary tuberculosis, such as cough, chest pain, prolonged fever or haemoptysis, or combinations of these symptoms
Persons without symptoms	New out-patients who had no such symptoms but had been asked to attend because they were contacts of tuberculosis patients or for a pre-employment check-up, etc.
Persons with other symptoms	New out-patients with other, non-suggestive, symptoms
Case of tuberculosis	One in which the diagnosis of tuberculosis has been confirmed bacteriologically
Suspect case	One in which the patient is suspected, on the basis of X-ray evidence only, to be suffering from pulmonary tuberculosis
Social preference	The cumulative effect of social and economic factors, other than suffering caused by symptoms, responsible for bringing the patients to the Centre

FINDINGS

Bacteriological examination of sputa

Out of the 2308 sputa collected (sputum collection coverage: 95%), 179 (7.8%) were found to be positive by direct microscopy or culture or both; 163 were positive by culture (91% confirmed by culture) and, of these, 131 (80%) were sensitive to isoniazid and 32 (20%) isoniazid-resistant.

Epidemiological characteristics

The age and sex distribution of the 2403 patients analysed, according to urban or rural residence, and the cases of tuberculosis among them, are shown in Table 1. A comparison is drawn also with the general population in the same age and sex groups.

Compared with the general population, the out-patients' attendance constituted a larger proportion of the 20–39 years age-group in both the urban and rural groups and in both sexes. These differences were statistically significant. Among urban out-patients there was no appreciable sex difference in the various age-groups but rural females attended the Centre far less frequently than rural males. Finally, the case-yield among rural out-patients was significantly higher than among urban ones. This was observed in all age-groups, except the over-60-years group (in which numbers are small).

Sociological characteristics

Awareness of symptoms. The Appendix Table shows the distribution of persons with and without symptoms (all types) among new urban and rural out-patients. It is to be noted that among the former, for reasons of convenience, the symptoms have not been analysed according to their nature, such as cough or pain in the chest, but according to the number of symptoms present. It is known that cough is the commonest symptom, whether alone or accompanied by one or more suggestive symptoms,

TABLE 1

AGE AND SEX DISTRIBUTION OF THE GENERAL POPULATION AND NEW OUT-PATIENTS, AND OF CASES FOUND AMONG THEM, BY URBAN OR RURAL RESIDENCE

Age-group and sex	Urban					Rural				
	Population (%)	Out-patients		Cases		Population (%)	Out-patients		Cases	
		No.	%	No.	%		No.	%	No.	%
5–19										
M	20.4	312	15.7	4	1.9	21.5	45	10.8	3	8.3
F	21.9	310	15.6	8		22.2	27	6.5	3	
20–39										
M	19.6	553	28.0	37	7.6	14.8	126	30.1	19	13.5
F	18.2	531	26.9	46		15.9	96	23.0	11	
40–59										
M	7.5	116	5.8	12	7.4	9.5	76	18.2	14	20.5
F	7.2	115	5.8	5		8.3	31	7.4	8	
≥60										
M	2.5	30	1.5	6	13.9	4.1	14	3.3	2	11.7
F	2.7	13	0.7	0		3.7	3	0.7	0	
Not stated	—	5	—	1	—	—	0	—	0	—
Total	100.0	1 985	100.0	119	6.0	100.0	418	100.0	60	14.4

and that haemoptysis is the least frequent and seldom occurs without cough (Andersen & Banerji, 1963).

Of the urban new out-patients, 11% were without symptoms (225 out of 1985) and there was not one case of tuberculosis among them; 6% of the rural out-patients were without symptoms (27 out of 418) and among these only 1 case of tuberculosis was diagnosed. As will be seen later, those persons without symptoms belonged to that so-called "at risk" group who had been *asked* to attend; they gave a very poor case-yield. Failure to return (to learn the result of examinations) was also high in this group.

As seen in the Appendix Table, 1612 out of 1985 and 368 out of 418 new out-patients, i.e., nearly 80% of out-patients in the urban and rural groups, *were aware of 1 or more symptoms suggestive of pulmonary tuberculosis*, and, significantly, 95% of all cases were found among them. Thus, it is mainly the persons with symptoms who attend specialized centres for diagnosis, and it is they who yield most cases of tuberculosis.

Out of 1985 new urban out-patients 148 (7.5%) and out of 418 new rural out-patients, 23 (5.5%) had *symptoms other than the 4 symptoms suggestive of tuberculosis.* They yielded more cases than the symptom-free group but less than the group with symptoms. The case-yield among them was 7 cases (4.1%) compared with 0.15% and 8.6%, respectively.

Number of symptoms. The Appendix Table shows that both urban and rural patients with symptoms frequently complained of 2 or 3 symptoms. This could be due either to delays in reporting, leading to the progression of the disease (and the symptoms), or to a natural multi-symptom characteristic of the disease. In order to test the hypothesis that the number of cases found increases with the number of symptoms, the case yield in relation to the number of symptoms is presented in Table 2.

TABLE 2

DISTRIBUTION OF PERSONS WITH SYMPTOMS AND OF CASES OF TUBERCULOSIS AMONG THEM, ACCORDING TO THE NUMBER OF SYMPTOMS AT THE TIME OF ATTENDANCE

No. of symptoms	Urban				Rural			
	Attendance		Cases		Attendance		Cases	
	No.	%	No.	%	No.	%	No.	%
1	376	23	10	2.7	77	21	3	3.9
2	502	31	19	3.8	93	25	8	8.6
3	568	35	64	11.2	148	40	34	23.0
4	166	11	20	12.1	50	14	13	26.0
Total	1 612	100	113	7.0	368	100	58	15.7

Table 2, while supporting the hypothesis, also demonstrates that, although there is no essential difference between urban and rural out-patients in the prevalence of symptoms at the time of reporting, the case yields are systematically and consistently higher in each symptom group among rural dwellers with symptoms. The pattern could have arisen out of epidemiological differences, such as age and sex distribution; that hypothesis was examined carefully but no relationship was found. Therefore, a rising number of symptoms appears to be part of the natural evolution of pulmonary tuberculosis, as opposed to other pulmonary diseases, and that this is as true in rural as in urban out-patients.

Duration of symptoms. The Appendix Table and Table 3 show the duration of symptoms among persons suffering from them before attendance.

Urban residents with symptoms attended the Centre more promptly than their rural counterparts; 61% of the former and as many as 42% of the latter attended within 3 months of the onset of their symptoms. However, the rural patients with symptoms caught up with urban patients in the next time interval (4–12 months). This finding supports the

TABLE 3

DISTRIBUTION OF PERSONS WITH SYMPTOMS AND CASES OF TUBERCULOSIS AMONG THEM, ACCORDING TO THE DURATION OF THE SYMPTOMS BEFORE ATTENDANCE

Duration of symptoms (completed months)	Urban				Rural			
	Attendance		Cases		Attendance		Cases	
	No.	%	No.	%	No.	%	No.	%
<1	431	27	24	5.6	47	13	6	12.7
1–3	553	34	55	10.0	107	29	22	20.3
4–12	380	24	24	6.3	137	37	24	17.5
>12	200	12	9	4.5	62	17	6	9.7
Not stated	48	3	1	2.1	15	4	0	0
Total	1 612	100	113	7.0	368	100	58	15.7

view that a high proportion of patients do not neglect their symptoms but soon go in active search of treatment.

A higher case-yield in both urban and rural residents with symptoms was found in the group with symptoms of 1–3 months' duration than in those in which the symptoms had lasted 4–12 months. The group with a duration of less than 1 month yielded fewer cases. The group with still more chronic symptoms yielded the lowest number of cases. It appears, therefore, that when symptoms last less than 4 weeks and more than a year, at the time of first contact with a specialized tuberculosis centre, a non-specific etiology is more likely to be the cause. Here also, an attempt to correlate the observed differences in the duration of symptoms with the age and sex of the persons with symptoms did not reveal any significant trend.

A correlation between the duration and number of symptoms among proved cases of tuberculosis is presented in Table 4. Details are given in the Appendix Table.

It is significant that 107 out of the 170 cases (63%) had reported at the Centre within 3 months of the appearance of their symptoms. This early attendance pattern is found irrespective of the number of symptoms present at the time of diagnosis. Also, 99 cases out of the 107 cases (92.5%) had at least 2 symptoms at the time of reporting. A further 92 cases (54%) attended the Centre with 3 symptoms within a year of onset (constituting the largest single group of cases) and two-thirds of them had had these symptoms for less than 3 months.

Influence of literacy, profession and earning status on attendance. It is often stated that the literacy status and profession of a person (with symptoms) may determine to a great extent whether or not he would seek medical assistance, and how soon. An attempt to find a correlation between attendance at the Centre and the professions, religions and literacy levels of new out-patients, or the tuberculosis patients among them, was inconclusive.

However, when only the earning status was taken into account, irrespective of age, sex, or other social considerations, it was seen that among the urban out-patients 44% were wage-earners compared with 32% in the general urban population, and 61% of the rural out-patients were wage-earners (Table 5) against 50% of wage earners in the general rural population (communication from the Census Office in respect of the Bangalore area). This excess of

TABLE 4

CUMULATIVE CASE YIELD (NUMBER AND PERCENTAGE), ACCORDING TO THE NUMBER AND DURATION OF SYMPTOMS, FOR URBAN AND RURAL PATIENTS

Duration (months)	Stratum	Number of symptoms							
		1		2		3		4	
		No.	%	No.	%	No.	%	No.	%
1	Urban	2	8.3	8	33.3	20	83.3	24	100.0
	Rural	—	—	1	16.7	6	100.0	6	100.0
1–3	Urban	4	7.3	15	27.3	49	89.1	55	100.0
	Rural	2	9.1	6	27.3	17	77.3	22	100.0
4–12	Urban	1	4.2	2	8.3	18	75.0	24	100.0
	Rural	1	4.2	3	12.5	17	70.8	24	100.0
>12	Urban	2	22.2	3	33.3	5	55.5	9	100.0
	Rural	—	—	1	16.7	5	83.3	6	100.0
Not stated	Urban	1	100.0	—	—	—	—	—	—
	Rural	—	—	—	—	—	—	—	—
Total	Urban	9[a]	8.0	28	25.0	92	82.1	112[a]	100.0
	Rural	3	5.2	11	10.0	45	77.6	58	100.0

[a] Excluding 1 case for which the duration is not known.

TABLE 5
DISTRIBUTION OF NEW OUT-PATIENTS AND CASE-YIELDS ON THE BASIS OF EARNING STATUS

Earning status	Urban				Rural			
	Out-patients		Cases		Out-patients		Cases	
	No.	%	No.	%	No.	%	No.	%
Wage-earning	867	44	61	52	254	61	40	67
Housewives	578	29	42	35	104	25	16	27
Students	476	24	4	3	50	12	3	5
Unemployed	64	3	12	10	10	2	1	2
Total	1 985	100	118	100	418	100	60	100

wage-earners, irrespective of place of residence, is statistically significant. The proportion of housewives in the urban and rural general populations could not be determined, but it is important to note that housewives occupy the place next to wage-earners in Table 5 because they are equally important in maintaining family life. It is significant that very few unemployed persons, whether from urban or rural areas, attended the Centre. Altogether, 56% and 32% of the total cases of tuberculosis were, respectively, wage-earners and housewives. It would appear, therefore, that the value of an individual to his family exerts a considerable influence on attendance and case-yield.

Effect of distance from the home to the Centre. The effect of distance was studied in two ways. The walking distance was estimated by respondents and was recorded after some rough cross-checking by the interrogator. The direct distance could be judged from a map of Bangalore on which the localities in the city and distance radii were marked. This dual approach was adopted because the walking distance reflects the degree of inconvenience involved in attendance; on the other hand, the area encompassed by each successive concentric circle around the Centre would be much larger and would include a correspondingly larger number of people and, assuming a fairly even prevalence of tuberculosis, cases. The calculation of the area enclosed in each of the concentric circles was however not attempted in the face of the large disparities in population density and

TABLE 6
DISTRIBUTION OF NEW OUT-PATIENTS AND CASES OF TUBERCULOSIS AMONG THEM, ACCORDING TO WALKING DISTANCE

Distance (miles; km)	Out-patients		Cases	
	No.	%	No.	%
Urban				
Not stated	13	0.5	—	—
<1; <1.6	373	15.5	18	4.8
1–1.9; 1.6–3.0	405	16.9	23	5.7
2–2.9; 3.2–4.7	353	14.7	13	3.7
3–3.9; 4.8–6.3	467	19.5	29	6.2
4–4.9; 6.4–7.9	193	8.0	19	9.8
5–5.9; 8.0–9.5	96	4.0	11	11.5
6–6.9; 9.6–11.4	59	2.4	5	8.8
⩾7; ⩾11.2	26	1.1	1	3.8
Sub-total	1 985	82.6	119	6.0
Rural				
10–19; 16–31	31	1.4	5	15.2
20–39; 32–63	56	2.3	11	19.6
40–59; 64–95	120	5.0	11	9.2
⩾60; ⩾96	114	4.7	14	12.4
Not stated	97	4.0	19	19.6
Total	2 403	100.0	179	7.8

land utilization. Fuller analysis is based on walking distance only.

Table 6 shows a sudden change in the distribution of the new out-patients and of the cases among them, according to the walking distance. Up to 3 miles (4.8 km), the numbers of new out-patients from each successive mile (1.6 km) is large and of the same order of magnitude; the case-yields are comparatively poor. Beyond that limit, the number of out-patients decreases and the case yields rise, suggesting a process of self-selection among persons with symptoms. An effective " area of influence " up to 4 road-miles (6.4 km) around the Centre as opposed to an " area beyond " would appear to be a more logical division of the population around the specialized tuberculosis centre than the usual urban–rural differentiation, as far as attendance is concerned. Further analysis of the case-yield, however, suggests that distance exerts a continuous process of selection from the very beginning and is not subject to a threshold at about 4 road-miles (6.4 km). Distance, therefore, emerges as a key factor markedly influencing attendance at specialized centres.

Number and duration of suggestive symptoms in relation to distance. Since distance has been shown to exercise a high selective influence on attendance, and on case-yield, it was tempting to study the interrelations between the distance by road and the number and duration of symptoms, in respect of persons with symptoms. This analysis (not presented) suggests that the influence of distance is quite independent and is overwhelming compared with that of the number and duration of symptoms.

REASONS GIVEN FOR ATTENDANCE

The reasons given by 2403 urban and rural out-patients for attending the Centre were carefully classified. All fell into 3 main groups. In the first group were those who had attended of their own accord, either on their own initiative or on the advice of friends, relations or neighbours. The lines of demarcation between the sub-categories were slender and analysis did not reveal any justification for maintaining separate sub-categories within this group. The second group consisted of those who had been referred to the Centre, mainly by general hospitals and dispensaries, tuberculosis sanatoria and clinics, and by general practitioners. As there are only a few general practitioners in rural areas, 30% of new rural out-patients were referred by general hospitals and only 3% by general practitioners, whereas 18% of new urban out-patients were referred by general hospitals and 11% by general practitioners. In the third group were those who had been asked to attend, the majority being contacts—usually symptom-free—of persons in whom tuberculosis had been diagnosed; a minority had been asked to attend by BCG workers or home visitors. Finally, a few ex-tuberculosis patients came to this Centre for the first time for a check-up. For the purposes of this paper, therefore, only 3 broad groups have been shown. Table 7 gives the distribution, according to the reason given for attendance, of 2403 out-patients, and the numbers of cases of tuberculosis found among them. Taking the out-patients as a whole, one-half came on their own initiative, one-third were referred and the rest

TABLE 7

DISTRIBUTION OF NEW OUT-PATIENTS, AND CASES OF TUBERCULOSIS AMONG THEM, ACCORDING TO THE REASON FOR ATTENDANCE

Reason for attendance	Urban				Rural			
	Attendance		Cases		Attendance		Cases	
	No.	%	No.	%	No.	%	No.	%
Came of own accord	1 024	52	57	5.5	196	47	26	13.2
Referred	611	31	52	8.5	169	40	30	17.8
Asked to attend	350	17	10	2.8	53	13	4	7.5
Total	1 985	100	119	6.0	418	100	60	14.4

attended because of certain programme policies followed by the Centre.

Not much difference is seen in the pattern of attendance between urban and rural patients. Those referred from other centres, and those who had come of their own accord, proved to be the richest source of cases (about 92%) with almost equal yields in absolute numbers. Few cases (8%) were found among those who had been asked to attend. The differences, on this score, between the 3 categories are statistically significant.

MOTIVATION FOR ATTENDANCE

The motivation underlying each reason given for attending (Table 7) may be quite different from that reason. Apparently, those who attended of their own accord had the " best " motivation in terms of quality and intensity, the " weakest " motivation would be in those who were symptom-free and had been asked to attend. In order to study this aspect, an analysis was conducted to see whether or not the patient had sought treatment from other sources before he went to the Centre and, if so, of the nature and quality of such treatment.

Source of previous treatment

In Table 8, the reasons given for attendance are correlated with sources of previous treatment, if any. Since persons with symptoms may contact more than one source of treatment for the same disease, an *ad hoc* system of allocating credit to only one source was adopted. On an arbitrary credit scale (Nagpaul & Vishwanath 1967), " no contact " with any source of treatment occupied the lowest position, whereas the highest on the scale was contact made with a sanatorium (or tuberculosis clinic), and intermediate positions were occupied by other treatment sources, as shown in Table 8. After eliciting the entire history of previous treatment, the source that had the higher position on the credit scale received the entire credit for previous treatment. Only 479 out of 2403 (20%) out-patients contacted the Centre directly on their own initiative, without previous contacts with other sources of treatment.

It is significant also that 741 (61%) of the 1220 who had come of their own accord had contacted other sources of treatment previously. Since they were not referred from these sources, it is clear that these patients themselves decided to go elsewhere, presumably in search of " more " or " better " treatment. Even the 121 (30%) patients out of the 403 who had been asked to come had received previous treatment for some of the symptoms that they reported at the time of attendance. The 282 persons of this group who had not contacted any source of treatment include 252 without symptoms (Appendix Table). Therefore, the reasons given for attendance do not truly reflect the quality or intensity of motivation but only the immediate cause of attendance.

An important finding is that, out of 1642 outpatients who had received previous treatment, at least 1374 (84%) had contacted medical services of a general nature. Apart from the 32 (2%) who did not state the source of previous treatment 72 (4%) contacted sources of indigenous medicine and only 164 (10%) went to some specialized tuberculosis institution other than the Centre. This is a significant behavioural pattern. These proportions hardly

TABLE 8

REASONS FOR ATTENDANCE CORRELATED WITH SOURCES OF PREVIOUS TREATMENT, FOR ALL OUT-PATIENTS

Reason for attendance	No contact made	Source of previous treatment						Grand total
		Indigenous	Private practice	General hospital	Sanatorium, etc.	Not stated	Total	
Came of own accord	479	65	287	304	65	20	741	1 220
Referred	—	—	209	497	70	4	780	780
Asked to attend	282	7	29	48	29	8	121	403
Total	761	72	525	849	164	32	1 642	2 403

change if each reason for attendance is taken into consideration separately. Even when urban out-patients only are considered, the proportions remain almost the same, suggesting that the desire to go to a specialized centre in the first instance is not a feature of city life. In fact, urban and rural out-patients had behaved in almost the same way in contacting general medical services first. This perhaps is the most significant finding of the study.

Effect of distance on motivation for attendance

We have already seen that distance is a key factor influencing attendance. The connexion between distance and the reason given for attendance, and to the source of previous treatment, is shown in Table 9. Only urban attendance has been analysed so that the sole effect of distance on the quality of motivation could be studied without the influence of factors obtaining in rural areas. In a city, the network of general health institutions is denser and therefore the city-dweller's preference for specialized institutions, within and outside the zone of influence of the specialized centre, can be assessed from Table 9.

The proportionate attendance—from within the zone of influence (< 4 miles; < 6.4 km) and beyond it (⩾4 miles; ⩾6.4 km)—in respect of those who had sought previous treatment compared with those who had made no previous contact (reasons 1 and 3) is roughly the same, namely 60% among the group who came of their own accord and 30% among the group who had been asked to come. It is interesting that, even in the city, out of 502 out-patients who attended from within the zone of influence on their own initiative and had contacted other sources of treatment previously, 410 (82%) had contacted *general* institutions. The proportion in respect of attendance from the area beyond the zone of influence (79 out of 105) is roughly the same. This observation is further supported by similar proportions obtaining among those referred (reason 2). This analysis of motivation, therefore, does not support the theory that people prefer specialized institutions, even in cities, where the network of such institutions is relatively dense.

Quality of previous treatment

When a patient contacts a source of treatment, he expects to be cured quickly. Analysis not presented here showed that, out of 1642 out-patients (Table 8) with a history of having made such a contact, 225 (14%) denied having received treatment from that source. An explanation for this is not available; it will be seen later that the denial was not always justified by the facts. A break-down of the records for these 225 patients, according to the reasons given for their attendance, showed that 28 (out of 741; 3.8%) had come of their own accord, 191 (out of 780; 25%) had been referred, and 6 (out of 125; 5%) had been asked to come. It must be remembered that it is stipulated that all general health institutions should refer their out-patients with symptoms of tuberculosis to a specialized centre (except those in whom the disease has been diagnosed by microscopy in rural institutions). Thus it appears to be usual for the non-specialized treatment centres to offer diagnosis and treatment to their out-patients directly without referring those with symptoms to a specialized centre, as they are supposed to do. The design

TABLE 9

REASON FOR ATTENDANCE CORRELATED WITH DISTANCE AND SOURCE OF PREVIOUS TREATMENT, IN RESPECT OF URBAN OUTPATIENTS ONLY

Reason for attendance	Distance (miles; km)	Sources of previous treatment				No contact made	Grand total
		General	Specialized	Other, or not stated	Total		
Came of own accord	<4; <6.4	410	43	49	502	353	1 024
	⩾4; ⩾6.4	79	7	19	105	64	
Referred	<4; <6.4	457	28	5	490	—	611
	⩾4; ⩾6.4	106	14	1	121	—	
Asked to attend	<4; <6.4	50	17	11	78	181	350
	⩾4; ⩾6.4	17	4	2	23	68	

of this study does not allow an accurate assessment of the quality of previous treatment to be made. Table 10, however, attempts to show the relation between the type of institution contacted by tuberculosis patients before they attended the Centre, and the kind of treatment they received there.

Clearly, the role played at present by general health institutions in dealing with cases of tuberculosis in the community is a prominent one. Also, in spite of serious efforts on the part of programme organizers, few patients (8 out of 110) are referred from these general centres whereas the amount of non-specific treatment prescribed—reflecting the amount of under-diagnosis—is quite considerable (87 out of 102).

The limitations of this analysis are that: (1) the accuracy of the previous diagnosis has to be based upon the status as judged later; (2) only those who attended the Centre subsequently are available for diagnosis; and (3) information is available only for cases whereas other sources of medical care could also have given specific antibacterial treatment to their suspect cases. For these reasons, it is not possible to judge the extent of over-diagnosis and over-treatment rendered by general health institutions—or, for that matter, the extent of inadequate treatment of the cases being treated by them with specific drugs.

Drug-resistance status of treated cases

In connexion with drug-resistance, the resistance (to isoniazid only) status of the cases diagnosed by the Centre, and their correlation with the source and kind of previous treatment, may help to clarify the situation. This is shown in Table 11.

Of the 179 cases, only 163 were positive by culture and 32 cultures only were resistant to isoniazid. This tends to confirm the view that most of these cases were not diagnosed, or were treated with non-specific drugs, as shown in Table 10. Analysis of the proportions of resistant cases in relation to the reason for attending the Centre did not show any differences (about 20% in each category) because of the high proportion of previously treated cases in each category of reasons.

In all 63% of the culture-positive patients who had received specific treatment previously showed drug-resistance, compared with 7% of such patients who had received either indigenous or non-specific treatment. That there was drug-resistance in 18% of the culture-positive patients who denied previous treatment could be explained only by the deliberate denial of treatment in some cases. If this explanation is correct, the proportion of patients who attended the Centre after having received previous treatment elsewhere would be still higher.

FAILURE TO RETURN

Out of 1985 urban new out-patients advised to return on the third day to learn the result of their examination, 140 (7%) failed to return. This group contained 12 cases of tuberculosis. In other words, 12 (10%) out of the 119 cases committed " primary default ". This group was compared with that of the new urban out-patients who returned, in relation to age, sex, wage-earning status, proportion of persons with symptoms and distance, but no significant differences were found. However, it was seen that,

TABLE 10

CORRELATION BETWEEN THE TYPE OF INSTITUTION CONTACTED AND THE KIND OF TREATMENT RECEIVED THERE BY PATIENTS

Type of Institution	Kind of treatment received				Total
	No treatment or not stated	Indigenous treatment	Non-specific treatment	Specific treatment	
No contact made or not stated	44	—	—	1	45
Indigenous medicine	—	7	—	—	7
General institutions	8	—	87	15	110
Specialized institutions	—	—	1	16	17
Total	52	7	88	32	179

TABLE 11

DRUG RESISTANCE STATUS OF CASES DIAGNOSED BY THE CENTRE, CORRELATED WITH THE SOURCE AND KIND OF PREVIOUS TREATMENT

Kind of treatment	Indigenous and general institutions	Specialized institutions	Others or none	Total	Positive culture	Isoniazid-resistant (%)
Indigenous and non-specific	94	1	—	95	91	7
Specific	15	16	—	31	30	63
Not stated	2	—	1	3	2	0
Sub-total	111	17	1	129	123	20
No treatment	6	—	44	50	40	18
Total	117	17	45	179	163	20

whereas only 38% of the " returned " group had had no previous contact with other sources of treatment, 56% of the " non-returned " group had not taken action previously. This difference was statistically significant and may be related to the weaker motivation in that group to seek treatment. In order to study this aspect of motivation, Table 12 correlates the reason given for coming to the Centre with that given subsequently for non-return. All eligible persons of the non-returned group were visited in their homes for this purpose and 113 persons (82%) could be contacted. The rest could either not be found on 2 occasions or their houses could not be located in spite of careful address-taking.

Tables 7 and 12 show that, out of 350 urban out-patients who had been asked to attend, 30 (8.6%) did not return. This was the highest non-return rate. Next in order come 59 out-patients who did not return, out of 1024 who came of their own accord (5.8%). The lowest rate was among the referred group: 24 out of 611 (3.9%). These differences, however, are not statistically significant. Out of the 59 who had initially attended of their own accord, 23 (39%) did not return because it was " inconvenient to travel ", and the same number because they " forgot to attend ". The respective percentages in the referred group were 46% and 21%, and 47% and 43% in the group asked to attend. In all the groups combined, 43% found it " inconvenient to travel ", and 36% " forgot to attend ". The miscellaneous reasons included " was out of town ", " had no one to accompany me " or " learned the result through

TABLE 12

REASON GIVEN FOR NON-RETURN CORRELATED WITH REASON GIVEN FOR ATTENDANCE

Reason for non-return	Reasons for attendance			Total	
	Came of own accord	Referred	Asked to attend		
Inconvenient to travel	23	11	14	48	(43%)
Forgot to attend (indolence)	23	5	13	41	(36%)
Went late or wanted better treatment	5	3	—	8	(21%)
Miscellaneous petty reasons	8	5	3	16	
Total	59	24	30	113	

someone else ". Apparently, the basic motivation is weak in some patients, but this is not directly related to the reason given for attendance.

DISCUSSION

In this paper, certain problems connected with the organization of tuberculosis control programmes have been seen mainly from the point of view of " consumers ", i.e., those who have to utilize the services provided. At present, these services are centred around specialized tuberculosis clinics (centres) which are located in cities and attempt to cover the entire population. Rural general health institutions are expected to find cases by direct microscopy, under the general guidance of a specialized city tuberculosis centre. However, when sputum examinations performed in the rural institutions are inconclusive, the patients concerned are referred to the city tuberculosis centre for diagnosis. The same applies to all patients who initially present themselves at urban general health centres. The purpose of the present inquiry was to judge whether or not, with the network of general health services available in Bangalore district, the existing tuberculosis services fulfil the expectations of " consumers " and are consistent with their behavioural patterns.

The results of this study do not support the belief that the public and the non-specialized medical services utilize specialized tuberculosis centres as they are intended to do; this is after many years of effort to offer a co-ordinated programme. Although the sizes of the urban (1.4 million) and rural (1.5 million) populations covered by the programme are roughly equal, the composition of the daily attendance at the Centre was 83% urban and 17% rural. Assuming that the prevalence of symptoms, and of cases of tuberculosis among persons with symptoms, are roughly equal in the urban and rural populations, the strikingly unequal utilization of the specialized centre by the two populations (even taking into account the case-finding by microscopy carried out in rural health institutions), and the significantly higher case-yield among rural attenders (14.4% compared with 6.0%, respectively) suggest a process of selection. Surprisingly, the higher case-yield from rural attenders was not influenced by age, sex, number or duration of symptoms at the time of reporting, and even the reason given for attending (see Tables 1, 2, 3 and 7). However, the strong influence of distance on attendance was revealed (Table 6). A distance of up to 4 road-miles (6.4 km) around the Centre was critical; 67% of the total attendance came from within this inner zone, which might be called the " zone of effective influence ", whereas the remaining 33% came from places up to 60 miles (96 km) distant from the Centre, i.e., from a zone containing a far greater population (and correspondingly more cases of tuberculosis). The case-yield from the inner zone was smaller (1598 out-patients yielded 83 cases; 5.2%), suggesting a comparatively free attendance with little or no selection. However, the 805 out-patients from the much larger outer zone yielded 96 cases (12.0%). If attendance from both areas were equal many more cases from the outer zone in proportion to the population could be expected. Since this selective process begins in the city itself, there is no point in differentiating between the urban and rural populations from the point of view of their utilization of health facilities. Several studies conducted by other workers on rural dispensaries (primary health centres) have shown that the zone of influence of these centres also is a radius of about 3 miles (4.8 km). These findings suggest that distance is such an important obstacle to attendance at any health centre that the presumed preference for specialized services is not able to overcome it.

If awareness of symptoms (suggestive of pulmonary tuberculosis) exists in as many as 95% of tuberculosis patients in rural areas (Banerji & Andersen, 1963), it would be reasonable to assume that the same is true among city-dwellers. Banerji & Andersen (*op. cit.*) have shown also that 52% of rural patients already attend nearby rural general dispensaries. However, of those specifically referred to the Centre for X-ray examination, only about 20% followed the advice given to them (Baily et al., 1967). As shown above, distance could be one explanation for this finding but, surprisingly, city patients in this study behaved much as rural patients did. The different reasons for attending the Centre were given by the two groups in approximately the same proportions (Table 7). City patients were just as likely to have received previous treatment from an institution of general health as rural patients were, even within the zone of influence of the Centre (Table 9). Lastly, it is evident that institutions of general health, when contacted by persons with symptoms, most often treat directly—with non-specific drugs—instead of referring their patients to a specialized centre for further investigation (Tables 8 and 10). By doing so, they cause considerable under-treatment and even inadequate treatment (Tables 10 and 11), as a result of which patients with

drug-resistance or in whom treatment has failed for some other reason, are later referred to the Centre.

It seems, therefore, that neither the public nor the non-specialized services utilize for preference the specialized services offered by tuberculosis clinics. In fact, Tables 8, 9, 10 and 11 show that persons who seek treatment, institutions of general health, and specialized institutions, do not at all interact as is commonly supposed. Since the study was not based upon a sample of all those seeking treatment, but only those who had attended the Centre, a firmer conclusion is not possible.

SOCIAL BEHAVIOUR AND SOCIAL PREFERENCE

In every community there are healthy and sick people. Among the sick, there are patients with symptoms suggestive of tuberculosis, and others with non-suggestive symptoms. Some of the former are " cases ", others are not. Not all of them seek treatment at health centres. The out-patients who attended the Centre belonged to all these groups, their only common characteristic being their attendance. Therefore, generalizations based on a study of out-patients, although they related only to persons who took action on account of their symptoms, are relevant to the main sources of out-patients.

It is commonly believed that by the time persons with symptoms reach a specialized tuberculosis centre they have had symptoms for a considerable time. This is particularly true of rural patients and those presenting more than 1 symptom. Table 2 shows that 65% of all persons with symptoms had 2 or 3 symptoms when they first sought treatment, and that the place of domicile makes hardly any difference in this respect. The characteristic evolution of tuberculosis is shown by the sharp rise in case-yield with the number of symptoms (Table 2), being at its highest among persons whose symptoms have lasted 1–3 months (Table 3), and by the observation that the number of symptoms in the cases is not directly related to their duration (Table 4) It is obvious also that persons with symptoms (and cases of tuberculosis among them) go in active search of treatment, the majority reaching the Centre within 3 months of the onset of their symptoms. Furthermore, the active search for treatment involves any, and all, sources of treatment (Tables 8 and 9). Altogether, 34% of urban dwellers with symptoms had presented symptoms for 1–3 months, and yielded 49% of all cases discovered in that group; the corresponding percentages in the rural population with symptoms were 29% and 38% (Table 3). This striking finding suggests that " cases find themselves ". Table 3 shows also that, although rural patients were somewhat late in attending the Centre, the delay was made up within the next allotted interval of 4–12 months. The main reason for the delay was, apparently, distance.

Taking attendance as a whole, 1642 out-patients out of 2403 (68%) had contacted one or several sources of treatment before contacting the Centre. This proportion rises to 76% if those who had been asked to attend are excluded, and the vast majority (1374 or 84%) had contacted sources of general medicine (Table 8). That all this happened mostly during a short time (3 months) suggests that an active search for treatment, irrespective of the general or specialized character of the institutions contacted but subject to certain selective processes, represents the general behaviour of persons with symptoms in the community under study.

The data presented in this paper further suggest that attendance at a specialized tuberculosis centre is not necessarily a function of awareness of symptoms and of the knowledge (direct or through referral) that such specialized services exist. Table 1 shows that it is mainly people in the 20–39 years age-group who attended the Centre. This assumes significance because tuberculosis is known to be more frequent in older age-groups. There is no indication that symptoms are more prevalent in the 20–39 years age-group. An explanation of the fact that mainly younger people attended can only be an hypothesis. It may be on account of their comparatively greater mobility or, because they represent the group with the greatest responsibility to the family and to society, they could have a stronger motivation to attend. The phrase " social preference " is applied to this selection, whereby more wage-earners and housewives (who are equally important to family life) seek medical assistance in the hope of getting well quickly, as if from a sense of social duty. Table 5 clearly brings out the preponderance of wage-earners and housewives in the attendance, among whom only a small proportion (17%; Table 7) were asked to attend as a result of " contact examination " and similar policies pursued by the Centre. Since most of them had no symptoms, and yielded hardly any cases, they can be excluded from the purview of social preference, although the community obliged them to attend. The rest came of their own accord, or because they were referred by other sources of treatment. It is understandable that motivation to

attend, which is not entirely based upon suffering, can be influenced by many or all the obstacles that lie between a patient and his treatment centre. This might be the reason why nearly 7% of urban first-day attenders failed to return on the third day for such reasons as "found inconvenient to return" or "forgot to return" (Table 12), or why fewer rural females in all age-groups attended the Centre. Apart from this, 61% of attenders had first contacted a source of general medicine (even in the city), probably because these institutions are more numerous and more convenient to attend; this study cannot show what diagnosis and treatment they provided. However, under the pressures of symptoms and social preference dynamics, it is not surprising that 50% of patients (Table 8) finally attended the Centre on their own initiative, after moving from one centre of treatment to another.

THE PLACE OF SPECIALIZED CENTRES IN A TUBERCULOSIS CONTROL PROGRAMME

It is justifiable to hold that the health (and tuberculosis control) services in a community should be in consonance with the prevailing social expectations and social behaviour (utilization). In the community investigated, awareness of symptoms (suggestive of pulmonary tuberculosis) leading to a search for treatment was apparently high, with little difference in this respect between the urban and rural populations. The utilization made of the specialized centres under such conditions and a reasonably well-organized tuberculosis control programme suggests that it is unrealistic to justify a pivotal role for specialized centres on the grounds that people prefer them. Organizationally, however, these centres could be given a referral role. Such factors as distance, a definite pattern of social preference, the prevailing general attitude of institutions of general health and the behavioural pattern among persons with symptoms, suggest that every health institution included in a control programme should be equipped to diagnose *and treat* tuberculosis according to a simple and standardized methodology. It is logical to infer, therefore, that the present policy of implementing widely different approaches for rural and urban areas may have to be abandoned. The function of the single specialized centre, as a pivot of the district programme, should be *managerial*; that is, to ensure that diagnosis and treatment, wherever they may be carried out, are maintained at a proper standard and to undertake assessment and other similar functions. If these control centres continue to function mainly as specialized diagnostic and treatment clinics, they are likely to gain little; indeed they stand to lose much. The capacity for community-wide case-finding would be reduced, the quality of treatment from general health institutions would continue to be inferior and the prospects of controlling tuberculosis might even become poorer.

To sum up; the three postulates under study, on the basis of which control programmes in India are apparently organized at present, have not been borne out. Instead, the following picture has emerged:

(1) Awareness of symptoms, response to the suffering caused by them, and the motivation to seek relief, are equally strong in urban and rural areas. There is thus no rational basis for dividing the population into "urban" and "rural", according to the use made of existing services. The greater use that seems to be made of city services is more likely to result from the larger number of general institutions in the city, and their greater accessibility, than from the alleged sophistication of the urban population. When services are only just sufficient to cope with emergencies and severe illnesses it is difficult to see how sophistication could influence such a tendency.

(2) Attendance does not depend merely on symptoms and the suffering caused by them. Social preference seems to cause some patients to take prompt action, and may even discourage others from doing so. Under these conditions, convenience (the socio-economic value of the individual to the family), distance and the expectation of quick results may all be responsible for the observed practice of switching from one source of treatment to another within a short period. These factors deserve further study. Thus it should not be assumed that members of the public prefer specialized services. An unexpected finding was the attitude of general practitioners and general hospitals; they now diagnose and treat—mostly symptomatically—patients who contact them, without adequately using the referral system so carefully provided for them. Perhaps the provision is unnecessary, or too far ahead of the present social conditions; possibly, the general medical services should be given full authority, and the means, to treat tuberculosis *lege artis*. In a sense, rural dispensaries occupy a more favourable position in the programme at present, since they can diagnose (by direct microscopy) and treat under a more systematic and co-ordinated structure than city dispensaries can. There is no strong justification for having a different pattern of services for urban areas.

RÉSUMÉ

ÉTUDE SOCIO-ÉPIDÉMIOLOGIQUE DE MALADES NON HOSPITALISÉS FRÉQUENTANT UN CENTRE ANTITUBERCULEUX URBAIN EN INDE EN VUE D'APPRÉCIER LE RÔLE DES CENTRES SPÉCIALISÉS DANS UN PROGRAMME DE LUTTE ANTITUBERCULEUSE

En Inde, les centres spécialisés dans la lutte contre la tuberculose sont généralement installés dans des villes. On y traite surtout des personnes que leur état de santé amène à consulter spontanément, ainsi que quelques autres auxquelles on a conseillé de subir un examen médical. Les mobiles qui incitent les intéressés à rechercher des soins spécialisés ne semblent pas assez puissants pour écarter tous les obstacles qui s'opposent à ce genre de consultation. Le trop grand éloignement du domicile du malade représente un empêchement majeur. La composition de la clientèle des centres antituberculeux est fortement influencée par la « valeur socio-économique » du malade pour son entourage, les salariés et les mères de famille représentant respectivement 56% et 32% des cas de tuberculose dépistés. L'expression « préférence sociale » est proposée pour rendre compte de cette sélection.

La plupart des malades consultent pour la première fois sans s'inquiéter de la nature des soins — spécialisés ou non — qui leur seront dispensés. S'ils jugent la qualité des services reçus peu satisfaisante, ils se mettent en quête d'un traitement « meilleur » donnant des résultats plus rapides.

Selon les auteurs, les motifs qui incitent un malade à chercher un soulagement à ses maux sont aussi impérieux à la campagne qu'à la ville et il n'existe aucune raison de distinguer parmi la population une fraction urbaine et une fraction rurale selon la manière dont les services de santé existants sont utilisés. La fréquentation plus élevée des centres de traitement urbains s'explique probablement par une plus grande densité et des facilités d'accès accrues plutôt que par le désir des citadins de bénéficier de soins spécialisés. On constate en outre que les praticiens de médecine générale et les établissements de soins généraux assurent le diagnostic et le traitement des cas de tuberculose sans mettre suffisamment à profit les facilités que leur offrent à cet égard les services spécialisés.

Les données recueillies au cours de l'enquête amènent les auteurs à envisager un renforcement des services de santé généraux (dotés de moyens suffisants de diagnostic et de traitement de la tuberculose) selon des normes identiques pour les zones urbaines et les zones rurales.

REFERENCES

Andersen, S. & Banerji, D. (1963) *Bull. Wld Hlth Org.*, **29**, 685-700

Baily, G. V. J. et al. (1967) *Bull. Wld Hlth Org.*, **37**, 875-892

Banerji, D. & Andersen, S. (1963) *Bull. Wld Hlth Org.*, **29**, 665-683

Nagpaul, D. R. (1967) *Indian J. Tuberc.*, **14**, 186-198

Nagpaul, D. R. & Vishwanath, M. K. (1967) *Economics of health.* In: *Proceedings of the 22nd Tuberculosis and Chest Diseases Workers' Conference, Hyderabad*, pp. 279-300

Piot, M. A. (1962) *Indian J. Tuberc.*, **9**, 151-156

APPENDIX TABLE

NEW OUT-PATIENTS AND CASES OF TUBERCULOSIS AMONG THEM ARRANGED ACCORDING TO THE PRESENCE OF SYMPTOMS, THEIR CHARACTER AND DURATION, SEPARATELY FOR URBAN AND RURAL AREAS

Duration of symptoms (completed months)	Without symptoms		With suggestive symptoms [a]								Total		Other symptoms [b]		Grand total		
			1 symptom		2 symptoms		3 symptoms		4 symptoms								
	No.	Cases	No.	Cases	No.	Cases	No.	Cases	No.	Cases	No.	Cases	No.	Cases	No.	Cases	Case yield
Urban																	
<1	—	—	96	2	154	6	152	12	29	4	431	24	21	3	452	27	5
1–3	—	—	114	4	173	11	211	34	55	6	553	55	36	—	589	55	8
4–6	—	—	47	—	61	1	85	11	28	4	221	16	24	—	245	16	6
7–12	—	—	43	1	49	—	48	5	19	2	159	8	14	1	173	9	5
>12	—	—	42	2	58	1	66	2	34	4	200	9	15	—	215	9	4
Not stated and not applicable	225	—	34	1	7	—	6	—	1	—	48	1	38	2	311	3	1
Total	225	—	376	10	502	19	568	64	166	20	1 612	113	148	6	1 985	119	
Rural																	
<1	—	—	9	—	16	1	19	5	3	—	47	6	—	—	47	6	11
1–3	—	—	19	2	29	4	47	11	12	5	107	22	5	1	112	23	19
4–6	—	—	13	—	18	1	28	7	12	2	71	10	6	—	77	10	13
7–12	—	—	13	1	12	1	27	7	14	5	66	14	2	—	68	14	20
>12	—	—	14	—	14	1	25	4	9	1	62	6	3	—	65	6	9
Not stated and not applicable	27	1	9	—	4	—	2	—	—	—	15	—	7	—	49	1	2
Total	27	1	77	3	93	8	148	34	50	13	368	58	23	1	418	60	

[a] Cough, fever, pain in the chest.
[b] Symptoms other than suggestive symptoms.