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TUBERCULOSIS CONTROL PROGRAMME - IS IT PRO POOR?

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ABSTRACT

Background: *TB is a complex socio economic problem that impedes human development and traps the poorest and most marginalized in a vicious circle of disease and poverty. India accounts for 30% of all TB cases in the world.*

Objective: *This paper is focusing on whether the TB programme is outreaching the poorer segment ofthe community. We did a prospective study to assess the economic indices (SLI) of TB patients registered under government TB control programme of Tamil Nadu. This data was compared with that of the National Family Health Survey (NFHS) data of the community*

Methods: *A semi-structured and pretested schedule was used for data collection. Information elicited through the interview included demographic and socio–economic characteristics such as employment, income, assets of the patient and family. Based on the information collected, standard of living index (SLI) was measured using the NFHS definition and classified as High, medium or low SLI.*

Results: *A total of 980 TB patients were registered during the study period of which 896 (91 %) patients were interviewed for this study. The economic status and SLI of the community compared with that of TB patients registered under the programme was as follows: people owning assets in the form of agriculture land 40%, 15%, owning a house 92%, 74% and livestock 36%, 14% no ofpersons sharing a room more than 5 persons per room 9%, 28%. The distribution of SLI in the community was low in 51 %, medium in 40% and high in 8% as compared to the distribution of SLI of TB patients where low SLI was observed in 64%, medium in 32% and high in 4%.*

Conclusion: *This study clearly shows that two thirds of TB patients who have access to the TB programme were poor and meets the health need of the most vulnerable segment of the population.*

"Even when an economy is poor, major health improvements can be achieved though using the available resources in socially productive ways..." Prof Amartya Sen, Nobel Laureate

Keywords: *Tuberculosis, poverty, Standard of living index (SLI), pro poor*

BACKGROUND

Tuberculosis (TB) is a serious public health challenge, not only because of its perennial toll of death and disease, but also because of its clear links with poverty.[1-5] Globally, the highest burden of TB is found in poor countries,[6-9] making it a disease ofthe poor. In India, the Revised National Tuberculosis Control Programme (RNTCP), based on the DOTS (Directly Observed Treatment Short course) strategy was introduced in 1993 to address the increasing burden of tuberculosis. RNTCP provides free diagnostic and treatment services to all the patients registered under it. But at present there is no information whether the programme meets the health needs of the most vulnerable segment of its population and about the standard of living (SLI) of patients

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registered under TB control programme. This will also throw light on utilization of government health services by poor TB patients.

We did a prospective study to assess the economic indices of TB patients registered under government TB control programme of Tamil Nadu and compared the same with that of the community. This will point to whether the programme is outreaching the poorer segment of the community.

METHODS

This study was conducted in Tiruvallur district of Tamil Nadu, south India. Patients diagnosed with TB and registered for treatment under the National Tuberculosis Control Programme during the 6-month period from July to December 2000, were interviewed. A semi–structured and pre–tested schedule was used for data collection. Care was taken to establish a rapport with patients before interviewing them. Information elicited through the interview included demographic and socio–economic characteristics such as employment, income, assets of the patient and family. Based on the information collected, standard of living index (SLI) was measured using the NFHS definition.

International Institute for Population Sciences, Mumbai, India conducted the National Family Health Survey (NFHS-2)[10] in 1998–99.The NFHS was a nationally representative sample survey of 88 562 households and more than 500 000 residents. The NFHS had. a systematic, multistage, stratified sample design. It had assessed the standard of living (SLI) in Tamil Nadu and had broadly classified the people living in the community in to three groups (low 51%, medium 40%, high 8%) based on their living conditions.

Definition of Standard of Living Index (SLI): The SLI is calculated by adding the following scores:

House type: 4 for *pucca,* 2 for *semi pucca,* 0 for *kachha;* Toilet facility: 4 for own, 2 for public, 0 for no facility; Main fuel for cooking: 2 for liquid petroleum gas, I for kerosene, 0 for wood; Source of drinking water: 2 for pipe, hand pump or well, 1 for public tap, 0 for others; Separate room for cooking: 1 for yes, 0 for no; Ownership of house: 2 for yes, 0 for no; Ownership of land: 2 for yes, 0 for no; Ownership of livestock: 2 if owns livestock, 0 if does not own livestock; Ownership for durable goods: 4 each for a car or tractor, 3 each for a moped / scooter/motorcycle, telephone, refrigerator, or colour television, 2 each for a bicycle, electric fan, radio/transistor, sewing machine, black and white television, water pump, bullock cart, or thresher, 0-for no.

Index scores range from 0-14 for a low SLI, 15-24 for a medium SLI and more than 25 for a high SLI. In this paper, SLI of TB patients has been compared with the SLI of the community, as described in the survey conducted by NFHS-2.

RESULTS

The profile of the patients registered in TB control programme and their economic status are summarized in Table 1. A total of 980 patients were registered during the study period of which 896 (91%) patients were interviewed for this study. Seventy percent of the patients were males and in more than two thirds of the patients the family size was more than 4. Thirty seven percent of the patients were illiterates and 27% of patients were not working. Patients' standard of living as shown by the SLI was low in 64%, medium in 32% and high in 4%.

Table 2 compares the economic status and SLI of the community with that of TB patients

registered under the programme. The percentage of people owning assets in the form of agriculture land (40%, 15%), house (92%, 74%) and livestock (36%, 14%) were high in the community compared to the TB patients. More than 5 persons per room were observed in 9% of the community as against 28% among TB patients.

Figure 1 compares the distribution of SLI of the community with that of TB patients. The distribution of SLI in the community was low in 51%, medium in 40% and high in 8% as compared to the distribution of SLI of TB patients where low SLI was observed in 64%, medium in 32% and high in 4%.

Table 1. Profile of the TB patients registered for treatment under government health facilities

	No	%
Age (years)		
15–54	664	*74*
55+	232	*26*
Sex		
Male	627	*70*
Family size		
4+	619	*69*
Education		
Illiterate	335	*37*
Occupation		
Not working	240	*27*
Standard of living		
Low	403	*64*
Medium	368	*32*
High	125	*4*
Total	896	*100*

Table 2. Profile of the TB patients registered for treatment under government health facilities

	Community Tamil Nadu n=22086 (%)	*TB patients Tamil Nadu n=896 (%)*
Assets		
Owning agricultural land	40	*15*
Owning a house	92	*74*
Owning livestock	36	*14*
Bicycle	47	*42*
Telephone	3	*3*
Moped/Scooter/Motorcycle	9	*6*
Bullock Cart	2	*2*
Tractor	1	*1*
Person per room		
More than 5 person per room	9	*28*
Source of drinking water		
Piped	65	*72*
Hand pump	18	*9*
Well	13	*19*
Standard of living		
Low	51	*64*
Medium	40	*32*
High	8	*4*
Missing	1	-

Fig 1. Utilisation of TB programme in different economic strata

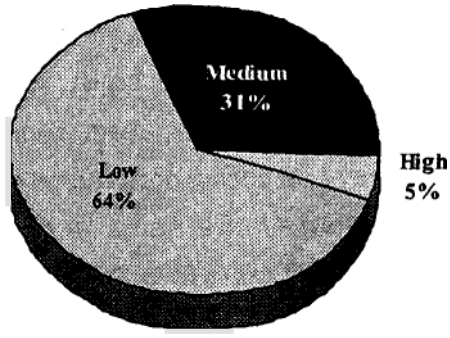
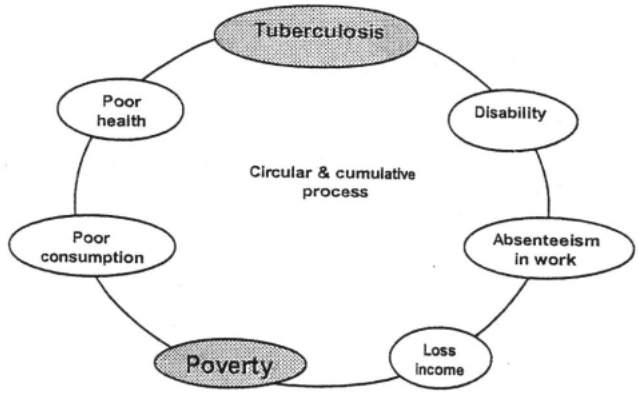


Fig 2. Vicious cycle of poverty



DISCUSSION

Findings of our study undoubtedly bring out that the living status of two thirds of the TB patients registered under TB control programme was low. This was much higher than that reported in general community, as per NFHS of Tamil Nadu, where about 51 % of the households had low living index. This finding substantiates that the programme is outreaching the poor. In the present study the tool used for measuring poverty was SLI, which is a widely used tool to assess the economic status of the community by World Bank and National Family Health Surveys. This is the first time poverty is quantified among TB patients in terms of living index assessment and compared with SLI of the community.

Poverty is of multidimensional nature and to assess levels of poverty, earlier studies have used direct indices based on income, food consumption etc or proxy indices like literacy. The following studies had measured poverty related to TB using these tools and similar findings have been observed. In mid–l950s, in Calcutta, TB prevalence rates were over 50 per 1000 in the poorest areas as against 2.48 per 1000 in comparatively affluent areas.[11] Using income as a tool, Nayyar reported that the prevalence of TB among those with income less than US$ 7 per month was twice higher compared to that of those with a monthly income greater than US$ 20 in 1989. Similarly, a study from an urban area reported that the prevalence of TB was four times higher among those with no schooling compared to graduates.[12-13]

This study clearly shows that two thirds of TB patients who have access to the TB programme were poor. Considering the benefits of the current TB programme, in India, more than 600 million people in over 300 districts have access to DOTS strategy. Each month more than 50000 patients are being initiated on DOTS. Of them more than 8 of 10 patients are successfully treated and the mortality is reported to be less than 1%.[14] Therefore poor TB patients are immensely benefited.

In the earlier studies it was shown that work absenteeism is significantly reduced among patients treated under DOTS strategy.[15] Thus the programme has the potential to reduce the economic burden of these poor patients and their households by reducing cost and more importantly, enabling them to return to work early.

In the current series it was observed that more than 5 persons shared one room in 28% of the TB patients where as in the community more than 5 persons shared one room in 9%. This finding substantiates that over crowding is an important risk factor for TB.

TB has a severe impact on the impoverishment of the patients and their households. The major factors, which lead to impoverishment, are inability to work due to illness and cost for diagnosis and treatment. The costs are higher for poor patients and the impact of poverty will be felt by the generations to follow.

CONCLUSIONS

Public health interventions in TB case detection and treatment could represent an effective part of an anti poverty approach to development in developing countries.[16-19] It has saved TB patients lives and billions of dollars to countries through curing TB patients and by their continued productivity. In India and elsewhere, effective TB control facilitates to break the cycle of poverty and disease (Fig 2). Revised National TB Control Programme (RNTCP) has been acknowledged to be a cost effective health intervention, in curing people and making them return early to work, which in turn benefits their families and in the broader perspective contributes to the overall economic and social development of their country and may help in alleviation of poverty.

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