



TIME MANAGEMENT TECHNIQUES AND ACTIVE CASE FINDING OF TUBERCULOSIS IN PATIENT MANAGEMENT AND TREATMENT

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ABSTRACT

According to the NSP 2017-2025, to eliminate TB, whether active case finding of tuberculosis is feasible in a programmatic setup has to be determined by a time motion study. To determine the time utilisation patterns in identifying the presumptive TB cases and also to assess the proportion of time spent in various domains of active case finding. As a part of undergraduate training programme in the Department of TB Chest, General Medicine and Community Medicine a group of 50 students were utilised in this active case finding initiative in the field practise area of Muthialpet along with faculty, post graduates, interns and medical social worker. Each day a time utilisation record was maintained. Active case findings was done in 6609 individuals. Out of these individuals 55 presumptive cases were identified, and only 51 agreed to take investigations. Time distribution pattern were a total of 268 hours by students, 15 hours by post graduates, 9 hours by MSWs and interns each, 13 hours by faculty, and 18 hours by driver. Time utilization pattern in each activity is as follows with data collection constituting 51810 minutes (59%), travel accounting 23550 minutes (27%), mobilization of a patient constituting 3240(3%), follow-up accounting 1260(1%) of the total time. Time utilization pattern revealed that nearly 27% of time is wasted in terms of travel and 4% in mobilisation and follow-up activities. This time could have been effectively utilised for proper patient care and treatment.

Key words: Time motion, ACF, Presumptive TB.

INTRODUCTION

Tuberculosis is one of the world's most dreaded diseases killing three people every minute. Each year 9 million people develop TB and 1.5 million dies from the disease. India contributes to more than one fourth of the tuberculosis cases and more than one third missing cases of tuberculosis in the world. [1] The RNTCP programme envisages to achieve the case detection of 85% in smear positive Pulmonary Tuberculosis (PTB) from the existing 70% (2%). One untreated case of tuberculosis can potentially transmit the infection to two other susceptible individuals in a year. Over the last National Strategic Plan (NSP 2012-2017) period, we did make significant

initiatives in building the support systems in TB notification. Active Case Finding is one of the new strategy that is mentioned in the strategic pillars of the draft. To detect, treat, prevent, and build approach in scaling up the basic TB services to public at all sectors. But now the National TB Elimination Programme (NTEP) has expanded both the laboratory network as well as diagnostic facilities to cover the entire country. To End TB by 2025, expansion of TB services and addressing determinants of TB through a multi-sectoral approach has become essential. [3]

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As a part of teaching curriculum the undergraduate and postgraduate students were involved in the activity of Active Case Finding in Urban Pondicherry since it is an unexplored aspect of TB detection. Currently, ACF is reserved for congregate settings, slums, prison inmates and susceptible contacts of PTB patients. Feasibility of ACF under routine programmatic settings is an unexplored one and available satisfactory health work force in Pondicherry lays an opportunity to test this feasibility. So this study aims at determining the time utilization patterns in identifying the presumptive cases and also to assess the proportion of time spent in various domains of active case finding along with the support of Medical Social Worker, interns, post graduates, under graduates and faculty of the Department of Community Medicine. To determine the time utilisation patterns in identifying the presumptive TB cases. To assess the proportion of time spent in various domains of active case findings

METHODS

Study Design and Population

Present study was conducted at Sri Lakshmi Narayana Institute of Medical sciences, Pondicherry. It is descriptive study using the time motion study design were in the all individuals of the study area were included and a house to house survey was conducted and each household was visited twice to cover up the locked houses. This academic training was from January 4-2018 to January 28-2018, and the active case finding was done for 8 (eight) days. The study was conducted at, Sri Lakshmi Narayana Institute of Medical sciences, Pondicherry and As a part of undergraduate training programme in the Department of TB Chest, General Medicine and Community Medicine. This academic training was to sensitise the students about Active case finding and they were trained in Epicollect 5 open access app for data entry on the field.

Study Procedure

On a routine the students along with the faculty, post graduates, interns, Medical Social Worker were taken from the college in college bus starting at 9am and reached the field practice area of Muthialpet. Then these students as per their allotted groups and streets visited the households and collected the information and entered in their Epicollect data entry form through their mobile phone. Thus the time consumed in each domain, right from the starting point from college till they return back was noted in log of activity. If they identified any presumptive case, the time required to register that patient in hospital HMIS (Hospital Management Information system) and to do the necessary investigations are sorted out. Individually what is time utilized for travel, data collection including symptom screening using the algorithm given by NSP draft 2017-2025, sputum collection and mobilization of the patient for X-ray and follow-up of the patient with sputum positivity and radiological findings were separately noted.

Cumulative time consumed for the entire period of Active case finding with travel and without travel were also separately analysed. Students were accompanied by faculty and post graduates and this log of activities were recorded. Medical social worker helped students in locating the households and giving them a route map as how to carry out the Active case finding in an ordered manner so that no household is missed. If at all any household is locked, it is revisited the second time the following day, and even on revisit if the household is locked it is excluded from survey. Interns also visited the household and provided necessary support in dispensing medications where and when required.

Statistical Analysis

Time spent was noted down and analysis carried out with epidata software. Time spent is expressed in mean and standard deviation. Also the time spent in each activity is expressed in percentage of total working time.

RESULTS

Active case findings was done in 6609 individuals in 1746 households contributing to around four in the household and a response rate of 77.5%. Out of these individuals 55 presumptive cases were identified, and only 51 agreed to take follow-up investigations with a response rate of 92.7%. Out of the cases 37 patients underwent sputum examination and 36 were sputum negative and one showed sputum positivity. So among the 36 sputum negatives only 7 consented for follow-up X-ray with response rate being 19.4%. Thus this analysis showed that though we are able to cover 77.5% of population and 92.7% of presumptive cases for follow-up, the situation in follow-up of smear negative cases were not appreciable. So this deficit can be addressed if we combine both sputum and X-ray at the first screening itself. The time spent in contacting the individual right from symptom complex screening and finally to follow-up the patients for referral and treatment was calculated and assessed. It is also found out that nearly 59 % of time is utilised in symptom screening of presumptive cases and a majority of the time that is 27% is utilised in travel.

This table shows the time distribution pattern among those who were in this session of case finding. Students utilized a total of 268 hours, post graduates utilized 15 hours, MSWs and interns utilized 9 hours each faculty 13 hours, and driver 18 hours in a total 8 days.

This table shows time utilization pattern in each activity. Data collection with symptom screening contributed 59%. But a huge amount of time of almost the half required for data collection was wasted in travel (27%).

This table shows the time distribution in various domains in identifying all the presumptive cases in this study. It showed with travel the time taken was 9 hours and it reduced to 5 hours if travel was removed.

This table shows time taken for a presumptive to be identified and taken to the hospital for workup. It was calculated as 63145 minutes (10 hours) with travel and the

workup of same presumptive case without travel was found to be 36345 minutes (6 hours).

Table 1: Time distribution pattern among those who were involved in Active case finding

S.NO	WORK FORCE	MAN HOURS
1	STUDENTS	268
2	POST GRADUATES	15
3	MSWS	9
4	CRRRI	9
5	FACULTY	13
6	DRIVER	18

Table 2: Time utilization pattern in each activity in Active case finding)

S.NO	ACTIVITY	TIME (MTS)	PERCENTAGE
1	Data Collection	51810	59%
2	Travel	23550	27%
3	Mobilisation of the Patient	3240	3%
4	Follow-Up	1260	1%
5	Camp in the Study Area	360	0.04%
6	Total	86700	100

Table 3: Time spent for identifying presumptive cases of tuberculosis (n= 55)

S.NO	ACTIVITY	WITH TRAVEL(MTS)	WITHOUT TRAVEL(MTS)
1	Data collection	526(9hrs)	303(5hrs)
2	Counselling	550	550
3	Mobilisation	3240	3240
4	Sputum Collection	370	370
5	Report Sharing	255	255
6	Follow-up	1260	1260
7	Camp in Study Area	360	360
	Total	6561	6338
	Per Presumptive Case	120	115

Table 4: Time spent for a presumptive case.

S.NO	PRESUMPTIVE CASE WORK UP	TIME
1	WITH TRAVEL	63145 MTS(10 HOURS)
2	WITHOUT TRAVEL	36345 MTS(6 HOURS)

DISCUSSION:

Tb is a social disease wherein the Quality of Life is compromised affecting mainly the domains of physical and psychological aspects. [2] Hence to combat Tb various new modalities of Tb identification and treatment were formulated. Active Case Finding being one of strategy in elimination of TB as per NSP draft is yet an unexplored area. Also this strategy is applied specifically for congregate settings, prisons, slums, displaced population and susceptible contacts of Tuberculosis patient. The vulnerability mapping is very essential to enjoy the benefits of this new initiative and to implement it in a successful manner. Also it is very essential to train the community workers in ACF so that in resource limited settings the strategy can become a successful implementation. [3] Time utilization pattern revealed that

nearly 27% of time is wasted in terms travel, that is taking the patient from his house to the hospital for registration and then for investigating with chest x-ray and sputum examination .Then after getting the reports, and if it is found to be positive for tuberculosis ,starting the individual on treatment and follow-up for further evaluation if needed. So if the health facility is nearby or active case finding done by the nearby anganwadi worker or an ANM, this burden of unnecessary wastage of time in transporting the patient can be solved. This is similar in study done [4] which revealed the wastage of time in health education .Also a study [5] showed that most the time of ANM were spent in clinic based activities than field based work. Thus proper training regarding the job responsibility and duty schedule must given well in advance before any field activity to prevent wastage of time. Similar study done [6,

7] showed the different domains of activities of MPHWs and the job responsibilities with relevance of their work. This additional time can be used to counsel the patient about taking the drugs properly on time regularly and motivate them accordingly.

Also if we see nearly 59% of the total time is spent on data collection which is very helpful in identifying the presumptive cases correctly and provide adequate care for them. Study done [8] showed that the self reporting method was even more time consuming. Thus active case findings help in detection of large number of presumptive TB cases. This was implemented by the global fund-supported project Axshya among high risk group in 300 districts under National Tuberculosis programme. [9]

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CONCLUSION

This study showed that the travel was the main back lag in identifying the presumptive cases. Here travel alone contributed 27% of the study time, which could have been utilised for various other domains of treatment and monitoring of the patient. The follow up of the patient is very essential in treatment completion and success.

Recommendations:

This study revealed the time management techniques and how this can be well utilised in patient management and treatment. Also proper job responsibility and time allocation is very essential in achieving more case identification and treatment.