



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 9, Issue, 12(C), pp. 29942-29945, December, 2018

**International Journal of
Recent Scientific
Research**

DOI: 10.24327/IJRSR

Research Article

VILLAGE ADMINISTRATION ELICITING TUBERCULAR CASES- AN INNOVATIVE APPROACH

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DOI: <http://dx.doi.org/10.24327/ijrsr.2018.0912.2965>

ARTICLE INFO

Article History:

Received 06th September, 2018

Received in revised form 14th
October, 2018

Accepted 23rd November, 2018

Published online 28th December, 2018

Key Words:

Active, Management, Model,
Panchayat, Presumptive.

ABSTRACT

Introduction: Developing countries having the workforce constraints face challenges in Tuberculosis (TB) control in hard to reach and vulnerable areas like villages. However, in India, at the grass root level, the presence of village administrative unit, referred to as the Panchayat, was hypothesized to contribute in active and enhanced tubercular case finding. The study was formulated to assess case finding by Panchayat and to evaluate this model in TB control. **Material a Methods:** The cross sectional study was undertaken with purposive sampling of the volunteering Panchayats having availability of nearby TB Diagnostic Microscopic Centre. One Panchayat was selected and 29 villages (1350 households) under this were surveyed. Pre- tested questionnaire was administered by the team led by Panchayat leaders. The team sensitized and trained in TB management by the Public Health Officials, aided the presumptive cases for sputum and clinical examination. Intensive awareness programmes and health camps were organized for community mobilization. **Results:** Presumptive tubercular cases were elicited by Active {36 (2.66%)} and Passive {58 (4.29 %)} case findings out of which 7 (19.44 %) and 9 (15.52 %) were TB confirmed respectively and were promptly initiated on treatment. **Conclusion:** Accessibility and acceptance of the Panchayat led team by the villagers was a boon for case finding in the region. Persistent collaboration of the Panchayat with public sector health functionaries boosted TB management practices across these villages. This model of Panchayat taking the onus of responsibility for TB control activities, when replicated in other villages can enhance TB incidence rates.

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INTRODUCTION

Tuberculosis (TB) has become a greatest public health challenge by virtue of the increasing infectious pool of this communicable disease globally and growing number of cases of drug resistant TB, a new enemy in the war against TB¹. The emergence of TB disease even in non endemic regions of the world, co morbid conditions of diabetes complicating treatment challenges and increasing disease morbidity have all assumed great proportions across the world². The scientific fraternity is also alarmed with the fear of drug resistant TB to assume the global epidemic status. The increasing number of TB cases has direct implications for the managerial manpower involved in various TB control programmes and strategies.

Many studies across the world have documented the gaps of the various TB control programmes³. It has been also highlighted that despite of the best functioning and performance of any such control programme, a large number of cases of TB still remain undetected and undiagnosed^{4, 5}. Henceforth, the theme for the year 2014 for the World TB day celebrations i.e. reaching the 'missing 3 million', was exclusively aimed at the 'hardest to reach and vulnerable areas to be covered' for TB case finding. Persistent efforts of the medical stream and various communities have started yielding acknowledgeable results in the management of tuberculosis. World Health Organization estimates that 3 million lives were saved across the world through effective diagnosis and treatment in 2015.

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However, still every day, more than 28000 people fall ill with TB and nearly 5000 of them die annually⁶.

India, a middle income country in South East Asia, has its own challenges in the context of TB prevention, control and treatment. 68.84% population lives in rural areas (mostly villages) of India⁷. A large part of the country has resource constraints of health facilities and TB still is neglected disease due to social taboos associated with it⁸. In India the evaluations of the TB control programmes had inferred slow TB active case finding^{9,10}. There were limitations in such case finding approaches. Therefore the National Strategic plan of the country from 2012- 2017 had laid emphasis on increasing the active and passive case finding in TB, especially in resource constrained settings. Providing comprehensive approach of preventing, diagnosing and treating TB in such settings is the need of the hour and warrants for newer innovative strategies¹¹. The village administrative body in India is referred to as the Village Panchayat and it functions under the Panchayati Raj Act of Indian constitution. It is an elected administrative body of village which is for, of and by the people. This grass root level official machinery plays a vital role in implementing all the health and other government functions. Henceforth, the strengths of this unit were proposed to be capitalized and the present study was formulated with following objectives:

1. To assess the tubercular case finding activities carried out by Panchayat
2. To evaluate the model of the role of Panchayat in TB control.

MATERIAL AND METHODS

Study Design: It was a Cross sectional study volunteered by one Panchayat and led by the head of the Panchayat.

Study Population: 29 villages falling under the village Panchayat Dangri of district Solan, a fast developing region of northern India, were enrolled for the study.

Human subject protection: Written informed consent was obtained from the elected members of the Panchayat and the households who were surveyed for TB case finding. The permission for the study was secured from the ethical committee of a Medical College of the district.

Study Methodology: Purposive sampling of the villages was undertaken on the basis of volunteer participation by the village administrative body and the availability of nearby Diagnostic Microscopic Centre (DMC). 29 villages falling under this Panchayat were selected and allotted to a group of two resource persons from the public sector for sensitization on TB management. Trained Panchayat members led by the head of the Panchayat thereafter, acted as the ambassadors for the earliest diagnosis and prompt treatment of TB in the selected villages. Moreover, the trained members further appointed four ASHA workers (Accredited Social Health Activists) for house to house survey for active case finding. 6 focused group discussions and 2 health camps were organized by the Panchayat, for enhancing the passive case finding. Voluntary house to house search was conducted in the 29 villages falling under this Panchayat. 1350 residents of 309 houses were surveyed. Active case finding was elicited on the basis of a standardized pre- tested questionnaire administered to residents

of more than 15 years of age. The TB diagnostic algorithm of the Revised National Tuberculosis Control Programme (RNTCP), was utilized as the screening tool for investigating Pulmonary and Extra Pulmonary TB. Morning and spot sputum samples were collected on site by the trained persons and were transported to the nearest DMC while maintaining the cold chain. Extra Pulmonary TB was elicited by the public health doctor of the nearby health institute. Suspicious Extra Pulmonary TB cases were facilitated to these institutes by the trained person of the village. All presumptive TB cases were screened as per the RNTCP protocol. The household survey also imparted the information, education and communication services regarding TB.

Study duration

The study was conducted w.e.f. 1st December 2017- 30th October 2018

Statistical analysis plan

Active and Passive cases detected and recorded in the Village register were analyzed in Epi Info version 7.2.0.1, IBM SPSS version 21 and Microsoft Excel 2010 software.

RESULTS

The six focus groups revealed the existence of some tubercular patients in the region. Majority of these members (88%) had the knowledge about the communicability of tuberculosis and another 80% knew about the laboratory diagnosis. 95 % members believed that the Panchayat should lead the villagers in the management of TB in the region.

The two health camps organized in the region imparted knowledge to the masses about TB. The camps also advocated the role of present TB diagnostic and treatment facilities available in the public sector of the district. The camps oriented the villagers about various other case finding activities proposed by the Panchayat.

The perusal of data depicted in Table 1 shows that out of the total 1350 residents surveyed, the major proportion was of males (61.85 %) and a large proportion (66.66 %) of the households were between the ages of 16- 30 years. Children below 15 years of age constituted about 5.48 % of the total population screened.

Table 1 Demographic characteristics of the study population, Panchayat Dangri, district Solan, 2017

Age in years	Male n (%)	Female n (%)	Total n (%)
0- 15	40 (2.96)	34 (2.51)	74 (5.48)
16- 30	560 (41.48)	306 (22.66)	900 (66.66)
31- 45	150 (11.11)	82 (6.07)	200 (14.82)
46 and above	85 (6.29)	93 (6.88)	176 (13.04)
Total	835 (61.85)	515 (38.15)	1350

The table 2 illustrates that 80 % of the adult participants identified cough as the most common symptom of TB followed by shortness of breath (60%), haemoptysis (45%) and fever (36%). None of the respondents knew about night sweats, weigh loss or lymphadenopathy as the probable symptoms of TB and only 3 % only knew that TB is caused by some bacterial infection. Majority (86%) agreed upon the complete curability of the disease. 67 % persons were aware about the availability of free treatment offered by the Public sector.

However, only 5 % knew about the duration (6- 24 months) of the treatment. 35 % of the respondents viewed the recurrence of TB due to incomplete treatment. Majority (88 %) had the view that TB is communicable. 79 % villagers agreed that the TB patient should be isolated from other family members during the course of the treatment. The male and female respondents had almost similar knowledge about the cause of TB and the adverse consequences of incomplete treatment. However, the males had significantly higher knowledge with regard to the communicability, patient isolation, main symptom of TB and about complete curability, duration and free availability of treatment for the disease.

of the total population screened were clinically diagnosed with TB and were also initiated on anti tubercular treatment.

DISCUSSION

Case finding activities and TB treatment are the cornerstones of any TB control programme. This assumes more significance especially in high disease burden countries like India which faces a huge scarcity of health manpower. The situation being grimmer in rural areas, the present study was an effort to rope in the village administrative body itself for case finding activities. Arabin *et al.* (1979)¹² had elicited the role of local village chiefs in case finding activities in rural Africa.

Table 2 Knowledge attributes of surveyed population (N= 1276) about Tuberculosis

Characteristic	Cause	Communicability	Isolation of infected person	Main symptom				Treatment			
				Cough	Shortness of breath	Haemoptysis	Fever	Complete cure	Free of cost	Duration	Adverse Consequence of incomplete treatment
Gender											
Male	25	687	630	660	495	444	336	767	750	52	238
Female	13	442	254	363	271	132	124	331	101	14	209
Total	38 (3.00)	1129	884	1023	766	576	460	1098	851	66	447
n (%)		(88.00)	(69.00)	(80.00)	(60.00)	(45.00)	(36.00)	(86.00)	(67.00)	(5.00)	(35.00)
Chi- Square value	3.78	53.16	158.89	86.22	65.50	169.00	97.70	173.12	494.00	21.87	1.88
p value	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17

It can be inferred from table 3 that after thoroughly sensitized and trained for active case finding, the Panchayat leaders were able to elicit 36 (2.66%) presumptive tubercular cases out of which 7 (19.44 %) were confirmed to have the disease and were promptly initiated on treatment. Moreover, 2 out of the 5 bacteriological confirmed cases amongst these were the relapse TB cases. Continuous information, education and communication activity during the active case search and through the organization of health camps in the region helped in the better understanding of the masses about the symptoms of the disease. This eventually turned into about 58 (4.29 %) persons themselves reporting to the public health facility for suspected tuberculosis and out of which 9 (15.51 %) were confirmed to have active tubercular infection. Amongst these 9 cases, 1 person was detected having primary multi drug resistant TB with the aid of the CBNAAT (cartridge based nucleic acid amplification test). Thereafter the DOTS was initiated for these newly diagnosed patients. Overall, in a span of one year and with the aid of active and passive case findings 16 (1.18 %) tubercular cases were detected in the region and were initiated on treatment.

Table 3 Tubercular case findings of the survey led by Panchayat Dangri, district Solan, 2017-18

Active Case Finding N= 1350	Presumptive TB	Confirmed TB	
		Bacteriological	Clinical
Male	22	4	1
Female	14	1	1
Total n (%)	36 (2.66)	5 (0.37)	2 (0.14)
Passive Case Finding N= 216			
Male	46	5	1
Female	12	2	1
Total n (%)	58 (4.29)	7 (0.51)	2 (0.14)

Out of these 12 (0.88 %) were bacteriological confirmed cases elicited by the means of sputum microscopy. 4 (0.29 %) cases

It can be inferred from the present study that thorough sensitization and advocacy of village administrative leaders does lead to the villagers themselves engaging in TB control activities. Similar importance of case finding activities has been reported by De Cock and Chaisson (1999)¹³. The active and enhanced case finding activities not only elicited new TB infectious cases in the region but also imparted vast awareness and knowledge of TB infection control mechanisms to the masses as also being similarly reported in studies elsewhere (Grzbowski *et al.*, 1987¹⁴; Becx- Bleumink *et al.*, 2001¹⁵ and Jaramillo, 2001¹⁶). This Enhanced case finding activity resulted in people reporting themselves to the health facility for TB evaluation. Santha *et al.* (2003)¹⁷ also observed similar results in a study conducted in rural regions of South India. The observations from the present study pin point to the effective community mobilization by the means of advocacy of village administrative leaders and its role in effective TB control measures. Similar findings have also been reported by Borgdorff, (2004)¹⁸. The model of the village administrative body leading the cause of fight against TB mobilized the villages across the study area by the means of active and passive case finding. This helped the village community to acknowledge the importance of the infection control mechanisms of TB and the role of the prompt diagnosis and treatment in the cure of TB. Similar community benefits of such efforts have also been highlighted in other studies (Prasad *et al.*, 2016¹⁹; Eang *et al.*, 2012²⁰ and Kranzer *et al.*, 2013²¹).

CONCLUSION AND RECOMMENDATIONS

The study inferred the utility of the innovative model of village administrative body fighting the disease TB. Replication of this model in the health man power resource constrained settings of rural regions especially, can in cumulative manner affect the TB incidence rates.

Acknowledgement

We highly acknowledge the cooperation extended by the Chief Medical Officer, Department of Health and Family Welfare, district Solan. We also thank the entire team of Village Panchayat Dangri, District Solan for their keen interest and successful accomplishment of the study.

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How to cite this article:

Ajay Kumar Singh *et al.* 2018, Village Administration Eliciting Tubercular Cases- An Innovative Approach. *Int J Recent Sci Res.* 9(12), pp. 29942-29945. DOI: <http://dx.doi.org/10.24327/ijrsr.2018.0912.2965>
