



STUDY OF KNOWLEDGE AND PRACTICE OF COUGH HYGIENE AMONG PATIENTS OF PULMONARY TUBERCULOSIS

Respiratory Medicine

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ABSTRACT

BACKGROUND: Tuberculosis spreads by airborne particles from open case of pulmonary tuberculosis. Unsafe sputum disposal practices and bad cough hygiene are the major causes of spread of pulmonary tuberculosis (PTB). **OBJECTIVES:** To study the perceptions regarding tuberculosis spread and practices of sputum disposal and cough hygiene among PTB patients.

METHODOLOGY: This study was conducted among 100 diagnosed sputum-positive TB patients attending OPD and IPD of respiratory medicine department and DOTS centre of tertiary care hospital. **RESULTS:** Unsafe sputum disposal practice was followed by 44% of the patients; it was higher among females (74%), patients of lower socio-economic status (64%) and those without a family history of TB (75%).

CONCLUSIONS: Majority of the patients practiced unsafe sputum disposal methods and incorrect cough hygiene; in spite of having knowledge of spread of tuberculosis.

KEYWORDS

Awareness, counselling and guidance

INTRODUCTION:

Tuberculosis (TB) remains a worldwide health concern and has been labelled a 'Global Emergency' by the WHO. One-third of the world's population is thought to have been infected with M. Tuberculosis¹ and new infections occur in about 1% of the population each year.² Tuberculosis (TB) kills approximately 2 million people each year. The breakdown in health services, the spread of HIV/AIDS and the emergence of multidrug-resistant TB are contributing to the worsening impact of this disease.³ It is estimated that between 2002 and 2020, approximately 1000 million people will be newly infected, over 150 million people will get sick, and 36 million will die of TB - if control is not further strengthened.²

Open case of Pulmonary TB (sputum positive patient) is source of infection. Activity of coughing, sneezing by these patients can produce droplet nuclei. Pulmonary Tuberculosis (PTB) is spread by droplet infection, and its transmission is attributed to indiscriminate disposal of sputum by patients.^{3,4} Lack of awareness of risk posed to the community by a sputum positive case of pulmonary TB is an impediment in the control of TB.⁵ The TB patient must have the crucial knowledge regarding the mode of spread of disease, hazards of indiscriminate sputum disposal and cough hygiene etc.⁶ Patients and immediate family should be educated on hazards of unsafe disposal of sputum. Safe sputum disposal provides an effective measure to minimise the spread of the disease, and health education efforts need to be strengthened to create better awareness of this important aspect of TB control.⁴

The present study has been undertaken to assess the knowledge of TB patients about the spread of TB disease and the hazards of unsafe cough hygiene and to determine the sputum disposal practices followed by these patients.

OBJECTIVES:

- 1) To assess knowledge of spread of TB and hazards of bad cough hygiene and indiscriminate disposal of sputum among suspected and diagnosed TB patients.
- 2) To assess prevalence of different sputum disposal practices among sputum positive TB patients.

METHODOLOGY:

Type of study: It will be a cross sectional questionnaire based study conducted in the OPD and IPD of respiratory medicine department in tertiary care hospital over the period of three months.

Sample size: 100

Inclusion criteria: Respiratory symptomatic patients who are under evaluation and diagnosed as pulmonary tuberculosis were included.

Exclusion criteria: 1) Patients with age less than 12 years.

2) Patients not giving consent to participate in the study. Informed consent was obtained from each patient or his/her relatives. Patients were subjected to a questionnaire with study variables being socio-demographic information such as age, sex, education, socio economic status against different aspects related to knowledge of spread of TB, collection and disposal of sputum and practices related to care taken while coughing and sneezing. It will be labelled as correct or incorrect.

Operational definition:

Safe disposal of sputum was defined as spitting in container/sputum mug with cover and containing bactericidal solution (5% phenol/sodium hypochlorite) or in a container with boiling water or on a paper and burning it.⁴

Good cough hygiene was covering nose and face with mask, handkerchief, cloth, paper while sneezing or coughing.

At the end of interview, patient was advised about correct and safe technique of sputum disposal.

OBSERVATIONS AND RESULTS:

Out of 114 patients were diagnosed with pulmonary tuberculosis during the study period, 100 patients had given consent to participate in the study. Observations were as follows, Out of 100 patients with pulmonary TB 57 were male & 43 were female. 81% patients were literate. 68% patients were from low economic background 21% patient had family history of TB. Out of 100 patients 46% patients don't have knowledge about spread of TB out of 54% patient who were having knowledge about spread of TB 30 (55%) patients follow correct practice of sputum disposal and 31 (57%) patients follow correct cough hygiene. However among 46% patients who were not having knowledge about spread of TB. 44 (96%) patients practice unsafe sputum disposal practices and 36 (72%) patients follow incorrect cough hygiene.

More females (74%) than males (63%) follow incorrect sputum disposal practices as well as incorrect cough hygiene. (Males 65% & females 58%) follow incorrect cough hygiene practices. 81% patients are literate, only 60% patients don't follow correct sputum disposal practices and 55% patients don't follow correct cough hygiene.

Among 21 patients with positive family history of TB less than 38% patients follow correct sputum disposal practices. 43% patients of middle socioeconomic status follow safe sputum disposable practices compared to 36% from lower socioeconomic group.

Table 1: Socio demographic factors associated with safe sputum disposal practices:

DETERMINANTS	Sputum Disposal		TOTAL
	SAFE	UNSAFE	
SEX			
Male	21(37%)	36(63%)	57
Female	11(26%)	32(74%)	43
EDUCATION			
Illiterate	0(0%)	19(100%)	19
Upto Primary	4(24%)	13(76%)	17
Above Primary	28(44%)	36(56%)	64
Socio economic			
Middle	14(44%)	18(56%)	32
Lower	18(26%)	50(74%)	68
Family History of TB			
Yes	13(62%)	8(38%)	21
No	19(24%)	60(76%)	79
Knowledge of spread of tb			
Yes	30(56%)	24(44%)	54
No	2(4%)	44(96%)	46

Table 2: Sputum disposal practices followed by patients:

PRACTICES	Male	Female	Total
Indiscriminate Spitting	19(53%)	17(47%)	36
Disposal in dustbin	10(45%)	12(55%)	22
Spitting on paper and burn	0(0%)	0(0%)	0
Collect in ordinary container	7(70%)	3(30%)	10
Collect in cont. with bact. Sol.	7(50%)	7(50%)	14
Burying sputum	14(78%)	4(22%)	18

Table 3: Socio demographic factors associated with Cough hygiene practice:

DETERMINANTS	Cough Hygiene		TOTAL
	Correct	Faulty	
SEX			
MALE	20(35%)	37(65%)	57
FEMALE	18(42%)	25(58%)	43
EDUCATION			
ILLITERATE	2(11%)	17(89%)	19
UPTO PRIMARY	8(47%)	9(53%)	17
ABOVE PRIMARY	28(44%)	36(56%)	64
KNOWLEDGE OF SPREAD			
YES	31(55%)	25(45%)	56
NO	7(18%)	36(82%)	44

Table 4: Comparison of cough hygiene and sputum disposal practices in patients who were aware of mode of spread of Tuberculosis

Awareness of Spread of TB	Cough Hygiene		Sputum Disposal	
	Correct	Faulty	Safe	Unsafe
Present	31	25	30	24
Absent	07	36	02	44
Total	38	61	32	68
p-value	<0.01		<0.01	

DISCUSSION:

Unsafe sputum disposal was the predominant practice among the study patients (58%). As compared to this, Bhat et al⁷ reported practice of unsafe method of sputum disposal among 77.0% of their study subjects. 36% patients admitted to spitting indiscriminately as compared to Bhat et al⁷ (46.0%). A commendable number of patients (38%) practiced covering face while coughing. In the study by Bhat et al⁷, the practice was adopted by only 14.6% of their patients. Knowledge about mode of spread of the disease was not known to 49% of patients as compared to 54% in our study.

In the study of Bhattacharyya et al⁵, 80.0% of patients were following unsafe sputum disposal methods and 46.7% of the patients reported covering of face while coughing.

In the study by T. Rekha et al⁴ 50% of the subjects were following unsafe sputum disposal practices. More females than males disposed

of sputum safely (61.8% vs. 38.2%) same as our current findings (74% vs. 63%), as did more patients of low than middle socio-economic status (75% vs. 25%), also contradictory to our findings (36% vs. 43%). More subjects with than without a family history of TB (70% vs. 45%) which is seen in our study too (38% vs 04%), and more literate than illiterate subjects (59% vs. 35.7%) practised safe sputum disposal methods as also seen in our study (40% vs. 04%).

Knowledge about spread of TB and hazards of spread of TB is directly proportional to correct sputum disposal practices and correct cough hygiene. However in this study it was observed literacy doesn't have direct impact on cultivation of correct sputum disposal practices and correct cough hygiene.

CONCLUSION:

This knowledge about spread of TB and hazards of incorrect cough hygiene of TB needs to be improved specially in patients with pulmonary tuberculosis. It helps to break the chain of transmission of TB. It can be done at the start of IP of treatment and whenever patient come for follow-up at DOT Centre. Not only patient family member need separated counselling.

IMPLICATIONS:

Each sputum positive pulmonary Koch's patient is highly infectious till sputum is disinfected. If trained properly in correct and safe technique of sputum disposal, it will help in breaking chain of transmission of tuberculosis.

This research will give feedback to RNTCP programme about different sputum disposal techniques prevalent among patients.

DELIMITATION OF THE RESEARCH

- Limited sample size
- Areas based research

Financial Support and Sponsorship-Nil**Conflict of Interest**

The authors declare that they have no conflict of interest.

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