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Knowledge of Cough Hygiene And Disposal of Sputum in Patients with Pulmonary Tuberculosis

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Abstract:

Background: *In India, we have the most number of cases with pulmonary tuberculosis. The one cause of this widespread is negligence of the patients and health workers towards the prevention and control of this disease.*

Methods And Materials*: A Hospital Based cross sectional study over a period of 3 months . Answers related to knowledge and practices related to sputum disposal, care taken while coughing were evaluated as correct or incorrect. The study questioner also contained different aspects related to knowledge of TB . Study technique was by exit interview. Sample size was 100 (Hundred patients).*

Results: *In our study out of 100 patients with tuberculosis 62% was illiterates and 38% was literates. 38% of patients who were educated, 19% of them was following correct cough technique and the rest 19% did not. 32% of patients was aware of the mode of spread of TB, only 22% followed the correct cough technique and 18% followed correct sputum disposal method.*

Conclusion: *This study has found out that knowledge of spread of tuberculosis of cough technique and sputum disposal is very poor in tuberculosis patients. Proper education and counseling regarding the above should be done at the time of diagnosis.*

Keywords: *Spread of tuberculosis, Knowlegde, Cough hygiene, Sputum disposal.*

I. Introduction

In India, we have the most number of cases with pulmonary tuberculosis. The one cause of this widespread is negligence of the patients and health workers towards the prevention and control of this disease. Even though there are many organisations and programs that is conducted and funded by Government of India with a goal to eradicate TB has failed to educate its people.

According to the statistics of 2011, World had almost 9 million new of TB and 1.4 million TB death cases. India and China (where the population of people is in large scale) constituted 40% of world TB cases in 2011. When you look into the statistics of India, we had incidence of 2.2 million, Prevalence of 3.1 million and 0.3 million death due to TB in the year 2011. These statistics tells us that TB is a major cause of health issue in India[1].

The source of infection is an open (sputum positive) case of pulmonary tuberculosis. It has been estimated that a cough can generate 3000 droplet nuclei. They are also released during normal activities like talking or spontaneously during breathing[2].

The TB patient must have the crucial knowledge regarding the mode of spread of disease, hazards faulty way of coughing and indiscriminate sputum disposal at home as well as in community.

This study was conducted with the objective of knowledge to know the cough hygiene practice and sputum disposal technique among tubercular patients. To raise awareness of importance of cough hygiene and sputum disposal among tuberculosis patients. To prevent and control the spread of tuberculosis. Also to concentrates on need for education of mode of transmission of disease to patient's family by the RNTCP DOTS centre as well as the concern physicians.

II. Existing knowledge

The transmission of tuberculosis is a recognized risk in health-care settings. Several recent outbreaks of tuberculosis in health-care settings, including outbreaks involving multidrug-resistant strains of Mycobacterium tuberculosis, have heightened concern about nosocomial transmission. Health-care workers should be particularly alert to the need for preventing tuberculosis transmission, especially settings in which cough-inducing procedures (e.g., sputum induction and aerosolized pentamidine (AP) treatments) are being performed[3].

The prevention of tuberculosis transmission in health-care settings requires that all of the following basic approaches be used: a) prevention of the generation of infectious airborne particles (droplet nuclei) by early identification and treatment of persons with tuberculous infection and active tuberculosis, b) prevention of the spread of infectious droplet nuclei into the general air circulation by applying source-control methods, c) reduction of the number of infectious droplet nuclei in air contaminated with them, and d) surveillance of health-care-facility personnel for tuberculosis and tuberculous infection. Experience has shown that when inadequate attention is given to any of these approaches, the probability of tuberculosis transmission is increased[3].

Simple options for safe sputum disposal that patients can be counselled about include: 1) Disposal of sputum in paper (tissue or any other paper), and burn or bury it in the evening. 2) Dispose of sputum in a pot with ash or lime, and bury the contents in the evening. Patients who are found to be TB or respiratory suspects or cases should immediately be informed about the importance of cough hygiene and should be handed tissues (or pieces of cloth) and instructed to cover their mouths and noses when they cough. Alternatively, patients should be given a face mask, and asked to wear it while in the facility. Patients should also be instructed to dispose off used tissues or masks in identified no-touch receptacles and not on the ground[2].

Most of the studies suggest that more than half of the patients were coughing in faulty manner and disposing sputum indiscriminately. This can be improved by supervision of the patients to help reduce the transmission of TB in the close contacts and community. The scope of supervision needs to be expanded. Used items like sputum cups, tableware, respirators and other everyday items can also spread TB. The handling of these items should be supervised to control TB. It is often seen that supervision is focused more on supervising administrative aspects and patient treatment. Health workers currently are not aware of rules regarding how they should supervise sputum disposal by patients with TB and what they should do when supervising those patients, so they do not know what to do or how to do it[4].

Aims and objectives

This study was conducted with the objective to know the cough hygiene practice and sputum disposal technique among tubercular patients.

III. Methodology

A Hospital Based cross sectional study was conducted in RNTCP DOTS CENTER IN YENEPOYA MEDICAL COLLEGE HOSPITAL over a period of 3 months in 2016. The present study was carried out after obtaining the Ethical committee clearance. Patients of all ages, registered and undergoing treatment under RNTCP DOTS CENTER IN YMCH either admitted / attending and willing to participate in the study were enrolled after proper counseling. The procedure was explained to patients and were informed the purpose of the study. Informed consent was taken from each patient. Patient were assured about their confidentiality. Relevant clinical data (demographic- age, sex and education) was obtained from the patient. Answers related to knowledge and practices related to sputum disposal, care taken while coughing were evaluated as correct or incorrect. The study questioner also contained different aspects related to knowledge of TB i.e. how does TB spread. Study technique was by exit interview. Sample size was 100 (Hundred patients).

IV. Statistical Analysis

Data was entered and compiled by using Microsoft Excel. Data was analyzed using statistical package for social science (SPSS Version 22). Statistical analysis was done by Chi square test P value was considered significant if it was below 0.05 and highly significant in case <0.001.

V. Results

Out of 100, 13%, 19%, 29%, 39%, were in the age group of under 30, 31-40, 41-50, over 50 years, . Males composed 80% and females 20% of the total sample. 80% of patients were sputum positive and 20% sputum negative. In sputum positive patients cough technique and sputum disposal was correctly done in 30% and 18.8% respectively out of 100 patients, faulty methods seen in 70% and 81.3%. In sputum negative patients correct method of cough technique and disposal were seen in 30% and 20% and faulty technique seen in 70% and 80%.

In our study out of 100 patients with tuberculosis 62% was illiterates and 38% was literates. 38% of patients who were educated, 19% of them was following correct cough technique and the rest 19% did not. 32% of patients was aware of the mode of spread of TB, only 22% followed the correct cough technique and 18% followed correct sputum disposal method. The sputum disposal technique and cough technique in patients who had awareness of spread of tuberculosis had very high statistical significance with p-value <0.001, which shows that when the patients awareness regarding the tuberculosis disease improves the cough hygiene and sputum

disposal techniques.

6.1. Table 1 showing distribution of age and gender

Age			**Frequency**	**percentage**
	Male	Female		
Under 30	7	6	13	13
31-40	15	4	19	19
41-50	24	5	29	29
Above 50	34	5	39	39
Total	**80**	**20**	100	100

6.2. Table 2 showing distribution of sputum status with gender

Sputum Status			**Frequency**	**Percentage**
	Male	Female		
Sptum positive pulmonary TB	**64**	**16**	**80**	**80**
Sputum Negative Pulmonary TB	**16**	**4**	**20**	**20**
Total			**100**	**100**

6.3. Table 3 showing distribution of cough technique with sputum status

Sputum Status	**Cough Technique**		**Percentage**
	Correct	**Faulty**	
Sputum Positive Pulmonary TB	**24**	**56**	**80**
Sputum Negative Pulmonary TB	**6**	**14**	**20**
Total			**100**

6.4. Table 4 showing distribution of sputum disposal method with sputum status

Sputum Status	**Disposal Methods**		**Percentage**
	Correct	**Faulty**	
Sputum Positive Pulmonary TB	**15**	**65**	**80**
Sputum Negative Pulmonary TB	**4**	**16**	**20**
Total			**100**

6.5. Table 5 showing distribution of patient who are aware of the mode of spread of tb

Awareness of Spread of TB	**FREQUENCY**	**PERCENTAGE**
Present	32	32
Absent	68	68
Total	100	100

6.6. Table 6 showing educational status of study groups

Illiteracy	**Frequency**	**Percentage**
Yes	62	62
No	38	38
Total	100	100

6.7. Table 7 comparing cough technique and sputum disposal in study subjects who were aware of the mode of spread

Awareness of Spread of TB	Cough Technique		Sputum Disposal	
	Correct	**Faulty**	**Correct**	**Faulty**
Present	**22**	**10**	**18**	**3**
Absent	**8**	**60**	**1**	**78**
Total	**30**	**70**	**19**	**81**
p-value	**<0.001**		**<0.001**	

6.8. Table 8 comparing cough technique and sputum disposal in study subjects who are educational status

Education status	Cough Technique		Sputum Disposal	
	Correct	**Faulty**	**Correct**	**Faulty**
Illitrate	**11**	**51**	**7**	**55**
Literate	**19**	**19**	**12**	**26**
Total	**30**	**70**	**19**	**81**

VI. Discussion

In our study it was showed that only 32% of the patients were aware of the mode of spread of tuberculosis and 30% practiced correct cough technique. Among the 32% patients who were aware of the pread of disease only 22% had a proper cough technique. Sputum disposal was predominantly unsafe in our study subjects in which only 19 patients practiced proper sputum disposal.19 among this 32% patients were literates and among 32 patients who were aware of spread of tuberculosis only 18 practiced proper sputum disposal and 19 patients practiced proper sputum disposal in which 12 were literates. In 2011, Bhat et al[5] conducted study in Delhi, India. On 212 patients and reported practice of safe method of sputum disposal among 23.0% of their study subjects. Half of the subjects (51.0%) admitted to spitting indiscriminately which correlates with the finding of Bhat et al (46.0%). In the study of Bhattacharyya et al[6] conducted study in Kolkata, India. On 120 patients reported only 20.0% of patients were following safe sputum disposal methods and 46.7% of the patients reported covering of face while coughing. In the study of Bhatt G et al[7] conducted study in Ahmedabad, India. On 92 patients reported that 8.7% of them were spitting indiscriminately and 45.7% patients practiced covering mouth while coughing/sneezing.

VII. Conclusion

This study has found out that knowledge of spread of tuberculosis of cough technique and sputum disposal is very poor in tuberculosis patients. Proper education and counseling regarding the above should be done at the time of diagnosis.

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