



How much do Patients Suffering from Pulmonary Tuberculosis Know about their Disease?

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Editorial

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Tuberculosis (TB) remains one of the major global health threats leading to morbidity and mortality [1,2]. One in three persons across the world representing 2-3 billion individuals are known to be infected with Mycobacterium Tuberculosis (M. Tuberculosis), and of these 5-15% are likely to develop active TB disease during their lifetime [3]. In 2014, an estimated 9.6 million people fell ill due to TB, around 1.5 million people died from the disease including 1.1 million HIV-negative persons and 400,000 HIV patients [3]. While TB is present in every country majority of TB sufferers live in low and middle income countries especially in regions such as Sub-Saharan Africa and South East Asia [2]. Over the past decade, significant progress has been made towards TB control with most of the TB targets set as part of the Millennium Development Goals (MDGs) [3]. TB mortality for instance has declined by 47% since 1990, with nearly all of that happening in the era of the MDGs. In all, effective diagnosis and treatment of TB has been estimated to have saved over 40 million lives between 2000 and 2014 [3].

TB is an airborne bacterial infection caused by M. Tuberculosis which affects any part of the body and most commonly the lungs [4]. Exposure to M. Tuberculosis occurs by inhaling infected droplets loaded with bacterial nuclei and released to the air by coughing, sneezing, shouting or singing of individuals with active pulmonary or laryngeal TB [5]. Pulmonary TB, usually manifests as combination of one or more of the following symptoms; coughs (often lasting longer than three weeks with or without sputum production), coughing up blood, chest pain, loss of appetite, unexpected weight loss, night sweats, fever and fatigue [6]. Transmission occurs through inhalation of infected droplet nuclei which pass through the mouth or nasal cavities, the upper respiratory tract, bronchi and finally reaches the alveoli of the lungs [5].

TB can spread to different parts of the body through the circulatory system. TB infecting the bones can manifest

as spinal pain and joint disease. It can also infect the liver, kidneys, brain and the meninges and might cause dysfunction of these important organs [5].

Prevention of TB includes public education to avoid transmission of the disease. Such education should be done periodically and should include the symptom, signs, modes of transmission and steps necessary for prevention of the disease.

The disease can be avoided and cured when contracted, depending on the level of health awareness and knowledge of the community through prevention and control [7,8]. Several community-based studies have shown that public education about symptoms of the disease, modes of transmission and appropriate preventive measures can help in reducing the burden of the disease even in poor communities [7-9]. There are also reports that educational level, type of residence, manufacturing industries, and service sectors were related to the degree of adherence in the developed countries [10,11]. Attending to these aspects during efforts of raising public awareness of this world-wide public health problem has probably helped in achieving the MDGs regarding the control of the disease mentioned earlier [3]. However little attention seems to be have been paid to the knowledge and attitudes of patients suffering from pulmonary TB about their disease, probably on the assumption that they must have been adequately counselled by their treating teams, and therefore know all that is necessary to avoid spread of TB to their families and communities.

We have recently been alarmed by the lack of knowledge of some important facts about pulmonary TB by a couple of patients who happened to be under our care and at the same time being treated for pulmonary TB by the chest physicians. We therefore decided to carry out a survey about knowledge and practices of “patients known to have pulmonary TB and being followed up in chest clinics in Khartoum, Sudan” [12].

The records of a specialized chest clinic caring for patients with pulmonary TB in Khartoum, Sudan, were reviewed with permission of appropriate authorities. Patients who were under active treatment for pulmonary TB and on regular follow up were identified. When approached, 150 patients agreed to take part in a questionnaire about pulmonary TB and to attend a subsequent educational session for two hours in groups of about 6 to 10 patients. The questionnaire was designed by a panel of experts in public health and validated by a pilot test. The educational sessions consisted of small-group discussions, videos, pictures and scenarios

about various aspects of TB including epidemiology, features and measures necessary for prevention and treatment. The results were enlightening [12]. The majority of patients (86%) had at least secondary school education and could read and write well. They all had counselling sessions about their disease when first diagnosed and treatment initiated. The table (Patients' Knowledge about various aspects of pulmonary TB) shows excerpts from many variables tested by the questionnaire before and after educating the patients about their disease [12].

Knowledge variables	*Score		P value
	Pre-test	Post-test	
	Mean	Mean	
Epidemiology			
TB is an infectious disease	0.59	0.95	<0.003
TB is a bacterial infection	0.55	0.96	<0.001
TB is transmitted through coughing out droplets	0.6	0.93	<0.001
TB is transmitted through sneezing	0.55	0.91	<0.004
Symptoms			
Coughing for 3 weeks or more	0.65	0.99	<0.001
Coughing up blood	0.33	0.93	<0.001
Weight loss	0.32	0.85	<0.003
Night fever	0.37	0.89	<0.003
Night sweats	0.39	0.83	<0.006
Prevention/ Management			
Avoid crowding	0.45	0.87	<0.006
Cover mouth and nose on coughing	0.52	0.91	<0.009
Complete your treatment (compliance)	0.39	0.91	<0.006
Score*: of correct answers			

Table 1: Patients' Knowledge about various aspects of pulmonary TB (n=150).

In all the variables shown in the Table 1 most patients did not know the right answer to the questions initially. Examples are 41% of the patients did not know that TB is an infectious disease; 67% did not know that coughing blood could be a symptom of TB infection; and 61% did not realize the importance of completing their treatment course. After attending the educational session there was a dramatic improvement in the ratio of correct answers. Almost 90% or more of the questions were answered correctly (the statistical difference being highly significant: before and after the educational intervention).

These results affirm that we should not assume that patients under treatment for pulmonary TB know all about

their disease and will take the appropriate steps and attitudes to protect their families and community from contracting the disease. May be there is a need for continuous patient educational materials being shown in chest clinics and areas where these patients are seen or counselled.

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