International Journal of Community Medicine and Public Health
Sultana N et al. Int J Community Med Public Health. 2015 Nov;2(4):456-461
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20151029

Research Article

Conception of tuberculosis and evidence from slum area

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Received: 01 June 2015
Revised: 17 July 2015
Accepted: 20 August 2015

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ABSTRACT

Background: Tuberculosis (TB) remains as an important public health problem in Bangladesh. TB is an infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. The common symptoms of tuberculosis include cough for a prolonged duration that is more than three weeks, unexplained or intended weight loss, fatigue, general feeling of tiredness, fever, sweating at night, chills and loss of appetite. The patients of Tuberculosis hide their disease from family, relatives, and community due to the presence of misconception.
Methods: This cross-sectional study was done with 103 respondents .The objectives of this study were to assess knowledge of TB patients about their disease, and to identify their misconceptions associated with TB. The study was conducted to identify the conception regarding tuberculosis among the slum dweller in Shyamoli and Mohammmadpur area, in Dhaka city. Data were collected by face to face interview using semi-structured questionnaire.
Results: Out of 103 respondents, among them 48.5% were in 15-25 years age group with mean 26.15; (SD = ± 5.34). More than two fifth (53.4%) respondents were male and 46.6t were female and 53.41% were educated up to primary level, 71.84% were married, 88% were Muslims, 26.21% respondents were Garment worker, 60.0% were lived in a nuclear family. Majority respondents (86.41%) live in tin shade house. Among the respondents 53.4% heard about TB disease and the main source of information was mass media(TV, Radio).Majority(70.87%) of respondents knew that Cough for more than 2 weeks is the Common Symptom of TB.
Conclusions: Study findings shows that there is lots of misconception about tuberculosis but various TB control program are running in Bangladesh by Gob and different NGOs which can be help the people of our country to overcome the problems.

Keywords: Tuberculosis, Society, Awareness, Conception, Symptom

INTRODUCTION

Tuberculosis (TB) has reached epidemic proportions in many developing countries. Every year there are 8 million new TB cases that results in 2-3 million deaths worldwide, making TB the leading killer amongst all infectious diseases.

Tuberculosis is caused due to infection with the mycobacterium tuberculosis. But everyone, who gets contaminated with the germ, does not get the disease. Most of the time, the immune system can prevent you from becoming sick and only about 10% of people infected with tuberculosis go to on to develop tuberculosis. The symptoms of tuberculosis do not become evident in most cases, unless the disease has

advanced.[1] The common symptoms of tuberculosis include cough for a prolonged duration that is more than three weeks, unexplained or intended weight loss, fatigue, general feeling of tiredness, fever, sweating at night, chills and loss of appetite. Having these signs and symptoms does not mean that you have tuberculosis. There are many other diseases which have the same symptoms. Signs and symptoms of active tuberculosis may also vary depending on the organ that is affected. Most of the times, the lungs of the patients are affected. Tuberculosis can also affect organs apart from the lungs. The other organs that are affected by tuberculosis include lymph nodes, genitourinary nodes, bone and joint sites, lining covering the outside of the gastrointestinal tract.[2]

Bangladesh has one of the highest burdens of TB in the world. Treatment in the private sector is common and popular among TB patients in South-Asian countries, including Bangladesh. The quality of diagnosis and treatment of TB patients has been shown to be poor in several such countries. The Bangladesh National Tuberculosis Programme (NTP) has recently shown considerable interest in exploring policy options to address this problem. Consequently, the NTP and Non-Governmental Organization (NGO) partners planned to develop a public-private partnership (PPP) model for effective involvement of private medical practitioners (PMPs) in TB control.[3]

Objectives: To assess the perception about TB among the slum dwellers and the socio-economic status of the respondents.

METHODS

This cross sectional study was carried out among the slum dwellers in Shyamoli and Mohammmadpur area, in Dhaka city. Purposive sampling technique was used to select the sample. A total of 103 respondents participated in study and gave a response rate of 100%. A pretested semi-structured questionnaire was used to collect data by face-to-face interview for a period from January – June 2014.

RESULTS

Table 1 shows, out of 103 respondents, among them 48.5% were in 15-25 years age group, followed by 36.8% was in 26-35 years age group, 14.5% were in 36-45 years age group. Their mean was 26.15; (SD = ± 5.34). More than two fifth (53.4%) respondents were male and 46.6% percent were female. Among of 103 respondents, minimum of 26.21% cannot read and write, according to 53.41% were educated up to primary level, 20.21% passed secondary levels. The majority 71.84% were belong to married person, 28.26% percent were belong to unmarried. Monthly income of the respondents (51.46%) were in between 6,000-9,000 tk. 28.16% were in between 2,000-5,000tk. Among 103 respondents, most of them were Muslim (88%) and Hindu were (12%).

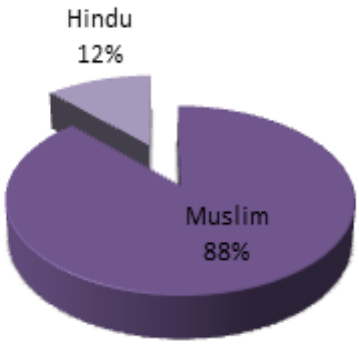

Figure 1: Distribution of respondents by religion.

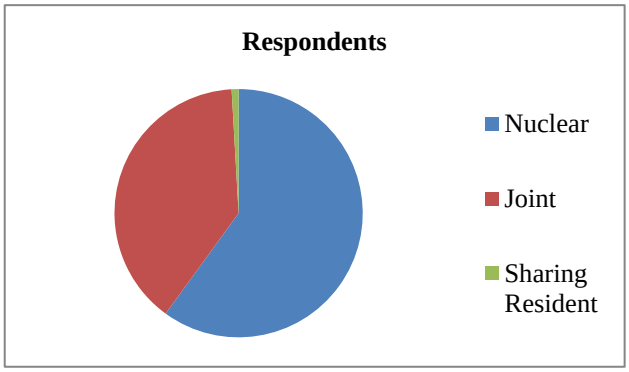

Figure 2: Distribution of the respondents by type of family.

Figure-2 shows that regarding the type of family maximum two third (60.0%) were nuclear family, 39.1 percent were joint and the lowest number of 0.9 percent were lived in sharing resident.

Among the participants, 21 (20.38%) respondents were house wives, 27 (26.21%) respondents were Garment worker, 18 (17.47%) were Businessman, 17 (16.5%) were Rickshaw puller, 12 (11.65%) were cleaner, 08 (07.76%) were Hawker (Table 2).

Regarding the number of family member's maximum of 56.31% were 3-4 members followed by24.7% where family members were 0-2, 13.59% were 5-6 members and only 5.83% were 7-8 members (Table 3).

Among the total respondents majority (86.41%) lives in tin shade house, 9.71% live in semi-pacca house and rest (3.88%) live in Pacca house. Most of (88.35%) respondents use supply water as drinking purpose and rest (11.65%) of the respondents use tube well water (Table 4).

Table 1: Distribution of respondents by their age, sex, educational level, monthly income and marital status.

Variables	Frequency(n)	Percentage
Age		
15-25 years	50	48.54
26-35 years	38	36.89
36-45 years	15	14.56
Mean age 26.5 SD ±5.34		
Sex		
Male	55	53.4
Female	48	46.6
Educational level		
Cannot read or write	27	26.21
Primary	55	53.41
Secondary	21	20.47
Higher secondary & above		
Monthly income (tk.)		
No income	14	13.6
2,000-5,000	29	28.16
6,000-9,000	53	51.46
10,000-13,000	7	6.78
Median income 8500 SD±4514.9		
Marital status of respondents	74	71.84
Married	29	28.26
Unmarried		
Total	103	100

Table 2: Distribution of respondent by occupations.

Name of occupation	Number	Percentage (%)
House wife	21	20.38
Garment worker	27	26.21
Cleaner	12	11.65
Hawker	8	7.76
Rickshaw puller	17	16.5
Business	18	17.47
Total	103	100

Table 3: Distribution of the respondents by number of family member.

Number of family member	Number of respondents	Percent
0-2	25	24.7
3-4	58	56.31
5-6	14	13.59
7-8	6	5.83

Table 4: Distribution of the respondents by their housing condition and source of drinking water.

Variables	Number of respondents	Percent
Tin shade	89	86.41
Pacca	4	3.88
Semi-Pacca	10	9.71
Source of drinking of respondents:		
Supply water	91	88.35
Tube well	12	11.65
Total	103	100

Table 5: Distribution of the respondents by their idea about TB.

Characters	Specified Characters	Number	Percentage (%)
Heard of TB disease	Yes	55	53.4
	No	48	46.6
Source of information	Mass Media(TV, Radio)	65	63.1
	Relatives	7	6.79
	Others	31	30.09
Idea about TB	Yes	56	54.37
	No	47	45.63
Common Symptom of TB(Multiple answer)	Bloody sputum	2	1.97
	Cough for more than 2 weeks	73	70.87
	Chest pain	28	27.18
	Fever	13	12.62
	Above all	15	14.56

Table 6: Distribution of the respondents by their conception of about TB.

Variables	Number	Percentage (%)	Number	Percentage (%)
Spread through touching	63	61.17	52	50.49
Spread through sharing food	59	57.28	62	60.19
Transmit through sexual contact	44	42.71	61	59.22
Transmit through Mosquito bite	40	38.83	63	61.17
Infectious	83	80.58	20	19.42
Curable	41	39.8	62	60.19
Preventable	49	47.52	54	52.43
Treatable	63	61.17	52	50.49

Among the total respondents 53.4% heard about from mass media (63.1%) especially from TV, Radio. Most of them (54.37%) have ideas about TB and among total respondents 70.87% told that cough for more than 2 weeks is the more common symptom of TB then 27.18% respondent told that chest pain is also a common symptom (Table 5).

Table 6 shows that there are variations in conception, among the total respondents 60.19% respondents told that TB is not curable, 52.43% told TB is not preventable but 61.17% told that TB is treatable. 50.49% told that TB is not spreading by touching, 60.19% told TB is not spreading by food and 59.22% and 61.17% told that not spreading through sexual contact and mosquito bite respectively.

DISCUSSION

Over one-third of the global populations are infected with Mycobacterium tuberculosis,[4] and they may turn into active TB cases at any time of their life cycle. In activities related to controlling TB, many healthcare workers come into contact with the disease. In the pre-antibiotic era (before 1944), TB caused substantial morbidity and mortality among medical and nursing students. In late 1980s, dramatic nosocomial outbreaks of multidrug-resistant (MDR) TB occurred, largely in populations infected with the human immunodeficiency virus (HIV). These outbreaks stimulated substantial investment in administrative, personal and engineering infections control measures.[5-8]

Tuberculosis was popularly known as consumption for a long time. Scientifically know it as an infection caused by M. tuberculosis. In 1882, the microbiologist Robert Koch discovered the tubercle bacillus, at a time when one of every seven deaths in Europe was caused by TB. Because antibiotics were unknown, the only means of controlling the spread of infection was to isolate patients in private sanitaria or hospitals. Entire organizations were set up to study not only the disease as it affected individual patients, but its impact on the society as a whole. At the turn of the twentieth century more than 80% of the population in the United States was infected before age 20, and tuberculosis was the single most common cause of death. By 1938 there were more than 700 TB hospitals in this country. Tuberculosis spread much more widely in Europe when the industrial revolution began in the late nineteenth century. The disease became widespread somewhat later in the United States, because the

movement of the population to large cities made overcrowded housing. Although other more effective anti-tuberculosis drugs were developed in the following decades, the number of cases of TB in the United States began to rise again in the mid-1980s. This upsurge was in part again a result of overcrowding and unsanitary conditions in the poor areas of large cities, prisons, and homeless shelters. Infected visitors and immigrants to the United States have also contributed to the resurgence of TB. An additional factor is the AIDS epidemic. AIDS patients are much more likely to develop tuberculosis because of their weakened immune systems. There still are an estimated 8-10 million new cases of TB each year worldwide, causing roughly 3 million deaths.[9]

Tuberculosis spreads by droplet infection. This type of transmission means that when TB patient exhales, coughs, or sneezes, tiny droplets of fluid containing tubercle bacilli are released into the air. This mist, or aerosol as it is often called, can be taken into the nasal passages and lungs of a susceptible person nearby. Tuberculosis is not, however, highly contagious compared to some other infectious diseases. Only about one in three close contacts of a TB patient, and fewer than 15% of more remote contacts, are likely to become infected. As a rule, close, frequent, or prolonged contact is needed to spread the disease. Of course, if a severely infected patient emits huge numbers of bacilli, the chance of transmitting infection is much greater. Unlike many other infections, TB is not passed on by contact with a patient's clothing, bed linens, or dishes and cooking utensils. The most important exception is pregnancy. The fetus of an infected mother may contract TB by inhaling or swallowing the bacilli in the amniotic fluid. Once inhaled, tubercle bacilli may reach the small breathing sacs in the lungs (the alveoli), where they are taken up by cells called macrophages. The bacilli multiply within these cells and then spread through the lymph vessels to nearby lymph nodes. Sometimes the bacilli move through blood vessels to distant organs. At this point they may either remain alive but inactive (quiescent), or they may cause active disease. Actual tissue damage is not caused directly by the tubercle bacillus, but by the reaction of the person's tissues to its presence. In a matter of weeks the host develops an immune response to the bacillus. Cells attack the bacilli, permit the initial damage to heal, and prevent future disease permanently.[10]

Pulmonary tuberculosis is TB that affects the lungs. These initial symptoms are easily confused with those of other diseases. An infected person may at first feel vaguely unwell or develop a cough blamed on smoking or a cold. A small amount of greenish or yellow sputum may be coughed up when the person gets up in the morning. In time, more sputum is produced that is streaked with blood. Persons with pulmonary TB do not run a high fever, but they often have a low-grade one. They may wake up in the night drenched with cold sweat when the fever breaks. The patient often loses interest in food and may lose weight. Chest pain is sometimes present. If the infection allows air to escape from the lungs into the chest cavity (pneumothorax) or if fluid collects in the pleural space (pleural effusion), the patient may have difficulty breathing. If a young adult develops a pleural effusion, the chance of tubercular infection being the cause is very high. The TB bacilli may travel from the lungs to lymph nodes in the sides and back of the neck. Infection in these areas can break through the skin and discharge pus. Before the development of effective antibiotics, many patients became chronically ill with increasingly severe lung symptoms. They lost a great deal of weight and developed a wasted appearance. This outcome is uncommon today—at least where modern treatment methods are available.[11]

The diagnosis of TB is made on the basis of laboratory test results. The standard test for tuberculosis, which is the so-called tuberculin skin test, detects the presence of infection, not of active TB. Tuberculin is an extract prepared from cultures of M. tuberculosis. It contains substances belonging to the bacillus (antigens) to which an infected person has been sensitized. When tuberculin is injected into the skin of an infected person, the area around the injection becomes hard, swollen, and red within one to three days. Today skin tests utilize a substance called purified protein derivative (PPD) that has a standard chemical composition and is therefore is a good measure of the presence of tubercular infection. The PPD test is also called the Mantoux test. The Mantoux PPD skin test is not, however, 100% accurate; it can produce false positive as well as false negative results. These terms mean is that some people who have a skin reaction are not infected (false positive) and that some who do not react are in fact infected (false negative). The PPD test is, however, useful as a screener. Anyone who has suspicious findings on a chest x-ray or any condition that makes TB more likely should have a PPD test. Often, the first indication of TB is an abnormal chest x-ray or other test result rather than physical discomfort. On a chest x ray, evidence of the disease appears as numerous white, irregular areas against a dark background, or as enlarged lymph nodes. The upper parts of the lungs are most often affected. A PPD test is always done to show whether the patient has been infected by the tubercle bacillus. To verify the test results, the physician obtains a sample of sputum or a tissue sample (biopsy) for culture. Three to five sputum samples should be taken early in the morning. If necessary, sputum for culture can be produced by spraying salt solution into the windpipe. Culturing M. tuberculosis is useful for diagnosis because the bacillus has certain distinctive characteristics. Unlike many other types of bacteria, mycobacterium can retain certain dyes even when exposed to acid. This so-called acid-fast property is characteristic of the tubercle bacillus.[12]

In the past, treatment of TB was primarily supportive. Patients were kept in isolation, encouraged to rest, and fed well. If these measures failed the lung was collapsed surgically so that it could "rest" and heal. Today surgical

procedures still are used when necessary, but contemporary medicine relies on drug therapy as the mainstay of home care. Given an effective combination of drugs, patients with TB can be treated at home as well as in a sanatorium. Treatment at home does not pose the risk of infecting other household members.[13]

The prognosis for recovery from TB is good for most patients, if the disease is diagnosed early and given prompt treatment with appropriate medications on a long-term regimen. According to a 2002 Johns Hopkins study, most patients in the United States who die of TB are older average age 62 and suffer from such underlying diseases as diabetes and kidney failure. Modern surgical methods have a good outcome in most cases in which they are needed. Military tuberculosis is still fatal in many cases but is rarely seen today in developed countries. Even in cases in which the bacillus proves resistant to all of the commonly used medications for TB, other seldom used drugs may be tried because the tubercle bacilli have not yet developed resistance to them.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Sultana N, Tania F. Conception of tuberculosis and evidence from slum area. Int J Community Med Public Health 2015;2:456-61.