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Knowledge, attitude, and practice regarding tuberculosis: Community-based study in Baghdad

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Abstract
He majority of respondents had several misconceptions in all aspects of the most infectious form of TB. a lot of respondents pursue a self-treatment option as their choice for primary health care. Cost and difficulties in transportation were mentioned as the main reasons for people to delay in seeking TB care. It would be better to establish an appropriate control measure such as establishing proper information, education, and a communication pathway that indicate the level of severity of the disease. In addition, creating proper awareness about its cause, transmission, prevention, and availability of public service are very essential.
Furthermore, the national TB control program should consider coordinating advocacy, communication, and social mobilization activities on the communities to improve KAP of patients, to reduce misconceptions, and prevent transmission of TB in the community.

Keywords: Knowledge, attitude, practice, tuberculosis

Introduction

Tuberculosis (TB) remains a global health problem. In 2011, there were an estimated 8.7 million new cases of TB, and 1.4 million people died from TB. Between 1995 and 2011, 51 million people were successfully treated for TB in countries that had adopted the WHO strategy, saving 20 million lives [1].

From several years ago, treatment and prevention of TB have shifted from inpatient to outpatient settings. In Iraq, much of the care is provided by general physicians in public health departments and supervised by infectious disease specialists and some by private practitioners. It is clear that for a TB control program to be successful, clinicians should acquire sufficient knowledge and provide appropriate practice essential for the management of TB [2].

The available literature shows considerable variability in the prevention, evaluation, and treatment strategies used by physicians worldwide. A report released by the World Health Organization emphasized the importance of undergraduate training in tuberculosis and outlined a comprehensive educational strategy to ensure students graduate with the appropriate knowledge, skills, and attitudes essential to the effective management of tuberculosis [3].

There are concerns that physicians still make frequent errors in TB treatment. Tuberculosis is a global health problem, an infectious bacterial disease caused by Mycobacterium Tuberculosis, first discovered by Robert Koch on March 24th, 1882, for which he was granted the Nobel Prize in Physiology or Medicine 1905, despite many advances throughout history in the fight against Tuberculosis, it remains a leading cause of morbidity & mortality especially in our country & other developing countries [4].

One of the most important aspects in the fight against TB is to educate the community about its ways of spread & how social factors such as overcrowding and social stigma of TB are important in disease prevention. Tuberculosis (TB) is a specific infectious diseases caused by mycobacterium tuberculosis. The disease primarily affects lungs and causes pulmonary tuberculosis. It can also affect intestine, meninges, bones and joints, lymph glands, skin and other tissues of the body. The disease is usually chronic with varying clinical manifestations. Tuberculosis is spread from person to person through air. When people with lung TB cough, sneeze or spit, they propel the TB germ into the air. A person needs to become infected. Tuberculosis is preventable and curable disease and detection of smear-positive TB cases by direct microscopy is a key element of direct observatories Treatment-short course strategy.

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The success of this strategy depends on the ability of health care system to identify and follow up TB suspects [5].

The complicated relationship between TB and troubles such as poverty, HIV, homelessness, race, alcoholism, immigration and get right of entry to two fitness care have contributed to the persistence of the disease. Inadequate or incomplete therapy of each latent and active TB has contributed to the development of a couple of drug-resistant (MDR) strains, similarly complicating efforts to eradicate the disease. Iraq has an estimated populace of (33) million and is ranked as (44) out of (212) worldwide locations and territories through estimated vary of TB cases on the international level [6].

It is viewed amongst the high TB burden global places in the Eastern Mediterranean Region (EMR), contributing to (3%) of the complete cases. The Government of Iraq has given priority to TB control; however, after the 2003 hostilities and deteriorated safety situation, the infrastructure, and human capacity to supply TB care have been critically damaged effactually. In fact as an outcome notification of TB instances continuously diminished in the years (2002 to 2007) [7].

The study aimed at collecting knowledge, direction, and practice on TB in the form of a community study in Baghdad.

Background
Globally, 9.7 million people get sick with tuberculosis (TB) and 1.7 million people die from it, each year. TB continues to be a major public health problem across the world, including Ethiopia. It causes ill-health among millions of people each year and ranks as the second leading cause of death from an infectious disease [8].

In 2006, 1.7 million deaths resulted from TB: the majority situated in sub-Sahara Africa. Even though the incidence of TB has decreased worldwide, an estimated 10.4 million people developed TB in the year 2015 of which one-quarter was from Africa [9].

In every second; around the globe, a person is infected with TB and every 10 s someone dies as a consequence of the disease. The 2018 Global TB report showed that Ethiopia is included in the 30 high TB burden countries and in Ethiopia, the case detection of the disease was 62 (51–74%) for all forms of TB [10].

Raising communities' awareness contributes for early diagnosis of TB which is one of the pillars of the End TB Strategy. Studies documented a positive association between TB knowledge, care-seeking and treatment adherence. To address such issues, the level of knowledge should be known to design an appropriate interventional programmer in a specific region [11].

The finding from various studies indicate that patient delay may be influenced by several factors, namely lack of knowledge, lack of awareness of the significance of symptoms, negative social attitudes or combinations of these [12].

Tuberculosis (TB) is one of the leading causes of death from infectious disease in the world, although effective prevention through treatment of latent TB infection (LTBI) has been available for more than half a century, which makes most of these deaths preventable. One-fourth of the world's population has LTBI, which constitutes a reservoir for new TB cases. TB trend modeling projections have estimated that without tackling LTBI treatment, the End TB Strategy will not attain its goals. Thus, TB index case contact tracing is an important task of primary health care (PHC) services. However, less than 10% of the people who need LTBI treatment will receive a prescription. Barriers to healthcare access, patients' and healthcare workers' knowledge and beliefs are among possible explanations for losses in the contact cascade-of-care [13].

Introduction Iraq has a high burden of tuberculosis (TB) and ranks 44th worldwide among countries with a high TB burden and 7th among the countries of the Eastern Mediterranean Region. The estimated incidence of all TB cases based on a total population of 22.9 million was at least 135 per 100 000 in the year 2001. In 2001 a total of 10 478 TB cases were notified, which corresponds to a case notification rate of 48 per 100 000, and means that Iraq can be categorized as a country with a medium level notification rate. The Iraqi national TB programmer has adopted the directly observed treatment short-course (DOTS) strategy since 1998 and by October 2000 the strategy covered all governorates. In most of the TB control efforts, including those undertaken in Iraq, clinical aspects of the diseases receive more attention than the human aspects [14].

There is a growing realization that the psychosocial suffering experienced by TB patients and their family's needs more attention. Therefore it has become clear that problems in case detection and case-holding are not solved by a clinical approach alone, but there is a need for community participation to support the efforts of health care workers while giving special attention to the gender aspects of TB. As community involvement is crucial for any successful TB control programmer, several studies have been performed to identify knowledge, perceptions, and practices of the population regarding the occurrence, transmission, treatment, and control of TB [15].

On the other hand, inefficient case-finding is an important obstacle to successful control of TB. Patients who are involved in several different health care encounters may account for delayed case-finding. Case studies illustrate the rationale for health-seeking and explain delayed initiation of appropriate approaches to health communication for improved control of TB. Certain reports also suggest that improved interpersonal skills of health center staff and coordination between private doctors and health centers may substantially improve services for TB patients. A considerable proportion of patients do not know about the mode of spread of the disease. Awareness about investigations such as chest X-ray is significantly higher than that of sputum examination [16].

There is a high degree of knowledge regarding the harmful squeal of inadequate and incomplete treatment but inadequate knowledge about the duration of treatment. These studies emphasized the need for health education to create better awareness of these important aspects of TB diagnosis, treatment, and control [17].

Tuberculosis continues to be a major public health problem globally and is commonly encountered in areas with crowding, malnutrition, poor sanitation, and where access to preventive and curative health services is scarce or absent. Mycobacterium tuberculosis is transmitted through inhalation of airborne droplets disseminated by individuals with pulmonary tuberculosis. The microorganisms are ingested by alveolar macrophages, and the infection is either contained or develops into active disease. Active disease is

most common in children younger than 5 years and adults with HIV/AIDS [18].

The incidence of extra pulmonary tuberculosis is increasing due to the increase in the prevalence of HIV/AIDS. Musculoskeletal involvement is diagnosed in less than 10% of all cases of tuberculosis, and 50% of these patients have spinal involvement. Tissue destruction in tuberculosis is caused by a delayed hypersensitivity reaction, leading to inflammation, tissue exudation, and liquefaction, producing a cold abscess. These can migrate along tissue planes and exit the skin at sites remote from their origin, such as those from the spine draining through the inguinal or gluteal region. Though uncommon, multiple osseous and/or articular sites can occur in patients with significantly impaired host defenses. As the prognosis relates to the stage of disease at the time of presentation, early diagnosis and treatment improves patient outcomes [19].

Treatment Principles
Chemotherapy remains the mainstay of treatment for all forms of tuberculosis and is generally effective in 90% of cases. Surgery is indicated for (1) establishing the diagnosis and (2) treating complications of the disease. Ideally, a biopsy and culture should guide therapy, but this is impractical in low-resource environments [20].

Empiric chemotherapy is provided in many cases when the characteristic clinical and radiographic features are present. In previously untreated adults without known drug susceptibility, rifampin and isoniazid should be used throughout the duration of therapy, and another first-line drug, streptomycin or ethambutol, is chosen for the first 2 months along with one second-line drug. Most patients with active TB are treated with 6–9 months of therapy, though some practitioners favor treating spinal disease for 12–18 months. The WHO treatment guidelines should be followed, and systems for monitoring compliance, such as DOTS – directly observed therapy, short course – should be in place. A longer duration of chemotherapy may be indicated with documented cases of relapse and in patients who exhibit signs of persistent inflammation, known as slow responders. Specific recommendations are available for patients with recurrent disease and active disease associated with HIV/ AIDS. In contrast to abscesses associated with bacterial sepsis, cold abscesses may resolve with chemotherapy, and drainage is not routinely required. Bacterial superinfection should be suspected when a sinus track fails to close following an adequate course of chemotherapy [21].

Lack of adherence to treatment with chemotherapy commonly leads to the development of resistant strains that are more difficult and costly to treat. DOTS regimens have been developed to counter this but require intense resources, which are often lacking. Screening for drug toxicity is limited, and patient education about side effects and potential complications of treatment is crucial. Multidrug-resistant TB is defined as resistance to isoniazid and rifampicin, while extensively drug-resistant tuberculosis describes resistance to isoniazid, rifampicin, and several second-line drugs [22].

Most of these resistant cases reflect the failure of the system to provide the correct medications and dosages and to monitor treatment. The incidences of these worrisome entities are on the rise. Osteomyelitis is the least common form of musculoskeletal TB (5%), and the presentation is similar to sub-acute hematogenous osteomyelitis. Clinically, patients present with pain and soft tissue swelling, and both abscesses and sinuses are common. Most patients are adequately imaged with plain radiographs. The differential diagnosis on plain radiographs is extensive and includes chronic osteomyelitis, Brodie's abscess, benign and malignant tumors, and other granulomatous diseases. While a lytic lesion with or without a sclerotic rim is the most common presentation, lesions may be serpiginous, commonly cross the physis, and may readily invade neighboring joints [23].

An aggressive periosteal response can also be observed, and in such cases a biopsy is mandatory. Sequestrate are unusual but can be present. The entire diaphysis can become sequestered in children due to intraosseous thrombosis. Disseminated skeletal tuberculosis can be observed in compromised hosts, involving combinations of osseous and articular involvement. Tuberculosis ductility's, spine Ventosa, occurs in the short tubular bones of the hands and feet. X-rays show multiple layers of subperiosteal new bone, a finding diagnostic for tuberculosis [24].

Given this diversity in plain radiographs, a biopsy is helpful in establishing the diagnosis, recognizing that under selected circumstances empiric treatment is considered. While curettage is recommended at the time of biopsy, bone grafting is rarely required as the lesions heal with chemotherapy. In severe and recalcitrant lesions, antibiotic-loaded bone cement spacers may be considered as well. While rifampin has been shown to be unsuitable for delivery through bone cement, isoniazid and streptomycin have shown beneficial elution parameters [25].

The sample
The sample consisted of 200 patients in Baghdad city, the researcher received approval from the Steering Committee for Tuberculosis Control and the Iraqi Ministry of Health.

Material
To achieve the objectives of the study, the researcher designed a questionnaire covering all aspects related to tuberculosis.

Knowledge
Advance knowledge of tuberculosis, source of information about tuberculosis, ideas about the severity of tuberculosis, how TB is transmitted, and knowledge of TB prevention methods

Direction
Ensure patients know the impact of tuberculosis on their social and family life, the patient's shyness of tuberculosis, concealment of tuberculosis, and the impact of tuberculosis on marital and social relationships, and work.

Practice
It included attention to hospital visits, patient services, patient awareness, health care, and medication services.

Statistical analysis
The data were analyzed using statistical package for social sciences (SPSS, version 22).

Then subgroup analyses were performed using the Chi-squared test to compare overall participants to participants with Good-Knowledge of TB. A 5% significance level was used as the cutoff for determining statistical significance.

Results & Discussion

Table 1

	Law	Medium	High
Knowledge	5%	35%	60%
Attitude	8%	45%	47%
Practice	22%	57%	21%

The results showed that 60% of participants had high knowledge and experience about tuberculosis, while only 47% had negative attitudes about TB and its negative effects on their social relations and work.

Table 2

	N	Mean±SD	P-value
Knowledge			
Male	102	11,2±2,1	0,001
Female	98	13,4± 4,2	
Attitude			
Male	125	14,6± 2,3	0,007
Female	75	17,3 ± 3,3	
Practice			
Male	130	22,3 ±2,4	,007
Female	70	36,5 ±4,3	

Several studies explained that the majority of respondents heard about TB from health workers and personal experience for the first time.

This study also reported similar findings. This indicates that health workers, radio, and personal experience were acting as a successful means of disseminating information about TB and it was a promising means for better detection of TB cases. However, this study showed there was very little information from the TV, and this may be a result of the majority of the subjects not having a TV because they are in rural areas.

This study observed that there were numerous misconceived ideas about the causes of TB, transmission, and prevention. Those misconceived ideas might have a potential to create ground for stigmatization of TB patients and decrease the TB case detection rate.

Moreover, in this study, a majority of respondents were deficient or unaware of different symptoms of TB [26].

In this study, a majority of respondents defined TB as a curable disease with modern therapy, whereas only half of the respondents were aware of the free charge of TB diagnosis and treatment.

This study revealed that the majority (58.3%) of respondents feared, stigmatized, and worried if they had TB. Furthermore, this finding indicated the need to strengthen health education activities such as information, education, and communication about TB and KAP seriousness, cause, the modes of transmission, the sequelae of treatment, interruption, and the curability of TB.

The low awareness, poor knowledge, and low financial capacity to pay for care and diagnoses were factors contributing to delayed health seeking7; this study also found that a majority of respondents delayed in seeking care because of cost and difficulties of transportation. In this study, a delayed seeking behavior was also associated with a low knowledge score, experience self-treatment option, and delayed frequency of visits. This is expected as the majority of study participants live in rural areas and access to transportation is a serious problem [27].

In addition to knowledge, a complex range of factors affects actual attitudes and practices of the individual, such as perceived stigma, economic resources, culture, health care accessibility, and health perceptions.

An intensive media-based education campaign is highly recommended in order to reduce TB-associated stigma in the community. Such educational activities should also target behavioral modification rather than being confined to increasing awareness of the community.

With the introduction of the revised national TB control guidelines and the implementation of the DOTS strategy, more emphasis is being given in many countries to health education and counseling of patients as well as supervision of treatment by face-to-face observation of patients. These activities imply a close contact between health care workers and patients.

For 12 years, Iraq suffered the effects of international sanctions on trade, during which time the country faced shortages of supplies and health services, particularly laboratory facilities. Therefore, health care workers have not had opportunities to put their knowledge into practice in an effective way [28].

It can be concluded that, despite the difficulties faced in Iraq, the educational and other activities of the national TB control program have had beneficial effects on the knowledge of TB patients and health care workers. However, the relatively good knowledge of TB patients did not significantly influence their practice or negative stigma associated with the disease. Similarly, the relatively good knowledge of health care workers regarding TB was not reflected in their practices, especially regarding the investigation of TB suspects, a deficiency that would negatively influence case-finding and case-holding. An intensive media-based education campaign is recommended to increase awareness of TB, reduce the associated stigma, and to change practices. Strengthening supervision within the national TB program, ensuring adherence to the DOTS strategy and fostering collaboration between national TB program and other health care providers, such as the private sector and non-governmental organizations, are also recommended [29].

Conclusions

Tuberculosis (TB) is a chronic communicable bacterial disease caused by Mycobacterium tuberculosis. It is a major public health problem worldwide with India having the highest prevalence of TB in the world.

Every year, there are more than 2 million incident TB cases, which is more than one-fifth of the global burden. TB poses as a main causative factor of mortality, causing death in two people for every 3 min. In 2011, globally, 1.4 million people died of TB of which nearly 1 million were HIV-negative individuals and 43,000 were HIV-positive cases. In 2011, it was found that TB was mainly responsible for causing deaths in 300,000 HIV-negative women and 200,000 HIV-positive women.

In order to combat TB, the National Tuberculosis Program was started, which was renamed to Revised National Tuberculosis Control Program (RNTCP). The goal of this program is to decrease the mortality and morbidity owing to TB and reduce the transmission of infection until it ceases to be a major public health problem.

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