



## TUBERCULOSIS;

### KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS TUBERCULOSIS TREATMENT: DOTS (DIRECTLY OBSERVED TREATMENT SHORT COURSE) BY MEDICAL OFFICERS

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**ABSTRACT... Background:** TB is highly prevalent in Pakistan. The Pakistan government has, therefore, given high priority to Tuberculosis control. It has declared TB to be considered as National Emergency in 2001, and has extended the WHO suggested TB control strategy (or DOTS) throughout the all health services of the Health Ministry by May of 2005<sup>1</sup>. Therefore it is very essential to assess the knowledge about TB and its implementation in tertiary hospitals which are the main source of providing treatment. **Objectives:** To assess the knowledge of medical offices about the diagnosis of tuberculosis case, treatment of tuberculosis cases and the practice of TB DOTS by the MOs in teaching hospitals of Faisalabad City. **Place and Duration of Study:** It was carried out in teaching hospitals. "Allied Hospital and district head quarter hospital" in Faisalabad City, in one month from 10 June 2014 to July 10 2014, Fifty MOs were assessed by the questionnaires methodology. **Study Design:** The study design was cross sectional study. **Sample Technique:** Simple non-random sampling. **Materials & Methods:** The MOs were given the questionnaires and before filling it, they were also provided with consent form, to get their consent in written. The sample of consent form and questionnaires are given at end. MOs are assessed randomly. **Results:** In this study, the response obtained in questionnaires were analyzed individually. When we calculate the percentage of doctors have knowledge about DOTS in Faisalabad. We get following results: 77.5% of MOS in teaching hospital of Faisalabad have knowledge about DOTS in Faisalabad. When we calculate the percentage of doctors practicing DOTS in Faisalabad. We get following results so 18.64% of MOs practice DOTS. **Conclusion:** It was concluded from this study that though majority of MOs have the knowledge but they are not practicing it. So there is a need of strict enforcement to implement this program effectively to achieve a better control of TB under guidelines of WHO.

**Key words:** TB, MOs, DOTS, Sputum examination, Anti-tuberculosis drugs, MDR.

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## INTRODUCTION

Tuberculosis (TB) is a contagious chronic granulomatous disease caused by Mycobacterium tuberculosis. The disease was also referred to as "captain of the men of death".<sup>1</sup> Tuberculosis most frequently attacks the lung (known as pulmonary TB) but can also have impact on the CNS (central nervous system), genitourinary system, gastrointestinal track the circularity system, the lymphatic system, bones, joints and also skin. Over 33% of world's population has been exposed to TB, new infections take place at a speed of one per second.<sup>2</sup> Among medically and economically poor persons all over the world, TB remains a leading cause of death. It is valued that

1.7 billion persons are diseased worldwide, with 8 to 10 million deaths per year. The WHO estimated that TB causes 6% of all deaths worldwide, making it 2nd most common cause of death due to infectious disease.<sup>2</sup> The emergence of drug resistant strains has also contributed to this new epidemic. In Pakistan, every year 13 lac cases arise, the incidence rate of TB is 177 cases per lac per year while prevalence rate is 500 cases per lac. Pakistan bears 43% of TB burden in EMRO and is ranked 6th as regard to TB in world.<sup>3</sup> Other names for TB are consumption, Phthisis, Lupus vulgaris, Koch's infection and Military TB. Primary cause of TB is "Mycobacterium tuberculosis" There are 5 strains of M. tuberculosis which

are Human, Bovine, Avian, Piscine and Murine. When people suffering from active pulmonary TB, kiss, sneeze cough, speak, or spit, they expel infectious aerosol droplets 0.5-5 um in diameter. A single sneeze can cause up to 40,000 droplets.<sup>5</sup> It is significant to understand that there is a difference between being infected with TB and having TB. Someone who is infected with TB has the tuberculosis germs in their body. The body's defenses are defending them from the bacteria and they are not diseased. On the other hand, someone with TB bacteria is sick and can spread the disease to other people.<sup>4</sup>

The possibility of transmission from one individual to another depends upon the number of infectious droplets expelled by a person having TB, the duration of exposure, the effectiveness of ventilations and M. tuberculosis strain virulence. Transmission can only occur from people with active TB.<sup>6</sup> Other modes of transmission are ingestion of infected milk, dust, kissing and fondling and direct inoculation. TB superfluities wherever there is poverty, crowding and chronic illness. Similarly, elderly persons with their weakened defenses are vulnerable to TB.<sup>4</sup> A person with active but untreated TB can contaminate 15-20 other people per year.<sup>7</sup> Principles of central prevention of tuberculosis are early detection of cases, Chemotherapy, BCG vaccination, Chemoprophylaxis, Rehabilitation. And Surveillance.

Case finding measures include Sputum microscope examination, mantoux test (tuberculin test) and x-rays chest. Chemotherapy can be provided by 2 ways, domiciliary treatment and DOTS.<sup>8</sup> DOTS Stands for "Directly Observed Therapy, Short-course" and is recommended by WHO. The WHO recommends that the first two months' therapy of all TB patients should be observed (and if possible the whole of it should be observed). This means an independent observing of tuberculosis patients when they swallow their anti-TB therapy. The independent observer is often not a healthcare worker or a doctor and it can be any person like a tribal elder or a shopkeeper or similar senior. Treatment with correctly applied

DOTS has a success rate beyond 95% and stops the occurrence of further MDR-TB (multi-drug resistant strains of tuberculosis).<sup>9</sup> DOTS consist of 2 phases. During Initial Phase 4 drugs, Isoniazid, Rifampicin, Pyrazinamide and Ethambutol, are given simultaneously for 2 months for fresh cases and 3 months for re-treatment cases. Continuation phase continued for 6 months for fresh cases and 5 months for re-treatment cases 2 drugs Isoniazid and ethambutol are used in same dosage. Advantages of DOTS are incensement cure rate of 95%, cost effective, less side effects (because of treatment is of short course), surety that patient is taking treatment, recovery within short period of time, no chances of development of MDR-TB and no need of hospitalization.

## LITERATURE REVIEW

In spite of available modern health techniques of the prevention and control of TB, the disease poses a main community health problem in Pakistan. To overcome the problems, various fully supervised intermittent treatment regimens have been evolved. In Pakistan, every year 13 lac cases arise, the incidence rate of TB is 177 cases per lac per year while prevalence rate is 500 cases per lac. Pakistan bears 43% of TB burden in EMRO and is ranked 6th as regard to TB in world.<sup>3</sup> Each year at least 268000 new tuberculosis cases are added to existing patient population of around 1.8 million.

Tuberculosis kills 64000 people in Pakistan each year, accounting for 26% of nation's available deaths. Over 95% of TB deaths occur in low and middle income countries. Six countries for 60% of the total, with India leading the count followed by Indonesia, China, Nigeria, Pakistan and South Africa. In 2014 approximately of 66% of TB cases in the United States occur in foreign born individuals. The Most common reason for development of resistance are incorrect treatment, irregular administration of drugs, non-compliance of treatment and lack of supervision, regulation and follow up. DOTS is approach to ensure cure, provided that the Most in effect drug and confirming that it is taken. It is the only approach which has been recognized to

be effective worldwide on a program base.<sup>3</sup> DOTS stands for “Directly Observed Treatment Short Course”. It is new strategy for treatment of tuberculosis. The drug is swallowed in the presence of doctor or a supervisor. It means that a trained health care worker or other designated individual (excluding a family member) provides the prescribed tuberculosis drug and observes the patient swallow every dose at proper time. DOTS has 2 phase, initial phase and continuous phase 4 drug are giving for 2 months in initial phase while 2 drugs are given in continuation phase for 6 months.<sup>10</sup> The anti-tuberculosis drugs have get side effects so, the doctor need to go for proper follow up.

### JUSTIFICATION OF STUDY

Govt. of Pakistan recommended the DOTS strategy, following WHO affirmation of TB as a global emergency in 1993.<sup>5</sup> So far, the success of program has been partial and Pakistan is still ranked 6 as regarded to number of cases of TB Worldwide.<sup>6</sup> Though, case detection and cure rates have enhanced significantly since 2000, and are on its journey to meet WHO target. It is the need of hour that to reevaluate TB control approaches. In some parts of world TB continues to upsurge despite pretty well run DOTS treatment Program. DOTS programs that advance treatment consequences and prevents occurrence of drug resistance should be encouraged. The problem in our country is, it is not followed properly, tuberculosis is growing concern for our nation. Tuberculosis is more common in low socio-economic status. 24% of population (38 million people) living below the national poverty line (in January 2017) total population of country was 194 million).<sup>11</sup> And a big proportion of TB patients have not get access to tuberculosis specialists, due to economical reason, so they mainly consult medical officers of teaching hospitals.<sup>12</sup> WHO has proposed that's DOTS should be followed in order to prevent appearance of MDR-TB and also to treat already existing cases of MDR-TB. So MOs need to know about DOTS and work for its implementation. In this study our aim is to access the knowledge and practice of DOTS by MOs in medical units of teaching hospitals in Faisalabad.

## MATERIALS & METHODS

### Study Design

Cross sectional study.

### Population Study

Medical officers working in Medical OPD.

### Sample Size

50

### Sampling technique

Simple non-random Sampling.

### Study Tool

Questionnaires were used to study the knowledge and practice of Tb-DOTS.

### Selection

There are 5 wards in teaching hospitals. From each ward 10.

### Study Area

Teaching hospitals in Faisalabad Allied Hospital and District Head Quarter.

## RESULTS

In this study, the response obtained in questionnaires were analyzed individually. Results are as follow: 50 MOs out of 50 MOs working in Medical units of teaching Hospital Faisalabad have knowledge about meaning of DOTS. Majority of MOs 48 (96%) have knowledge and understanding of difference between domiciliary and DOTS treatment. (DOTS treatment means drugs are swallowed in presence of doctor or supervisor, on the other hand, in Domiciliary treatment drugs are taken and swallowed at home.) 54% have training regarding DOTS and 23 MOs have no training regarding DOTS. 45 MOs in teaching hospital advice sputum microscopy for diagnosis of TB. Out of 50 MOs, 35 MOs have knowledge of duration of DOTS. Out of 50 MOs in teaching hospital 48 (96%) MOs take care while prescribing anti-TB drug during pregnancy. Over 45 MOs out of 50 have the knowledge about the conditions in which steroids are given. 50 MOs out of 50 have the knowledge about MDR-TB. Out of 50 MOs in teaching hospitals, 18 MOs have

appointed supervisor for tuberculosis patient. 40 MOs out of 50 MOs in teaching Hospital give advice. 10 out of 50 MOs know the side effects of anti-tuberculosis drugs. 18 MOs out of 50 have knowledge of DOTS Plus. So, finally when we calculate the percentage of doctors have knowledge about DOTS in Faisalabad. We get

results that 77.5% of MOS in teaching hospital of Faisalabad have knowledge about DOTS in Faisalabad. When we calculate the percentage of doctors practicing DOTS in Faisalabad by using all the data collected and after statistical analysis, we get results that 18.64% of MOs practice DOTS.

Sr. No.	Variables	Total MOs	No of MOs with affirming views	No of MOs with non-affirming views	%age
	DOTS stands for	50	50	0	100%
	Knowledge of Difference between Domiciliary and DOTS treatment	50	48	2	96%
	Training regarding DOTS therapy	50	27	23	54%
	Sputum Test for diagnosis	50	45	5	90%
	Duration of DOTS	50	35	15	70%
	Duration after which sputum test for AFB is done	50	40	10	80%
	Prescription of Anti TB drug during pregnancy	50	48	2	96%
	prescribing Anti-TB drugs in Hepatitis Positive patients	50	43	7	86%
	Anti-TB with antiviral drugs	50	38	12	76%
	Prescriptions of steroids in TB patients	50	45	5	90%
	Knowledge of MDR-TB	50	50	0	100%
	MDR include resistance to at least INH and Rifampicin	50	48	2	96%
	Appointment treatment supervisors for tuberculosis patient	50	18	32	36%
	Number of MOs Practicing DOTS	50	2	48	4%
	Side effect of Treatment	50	40	10	80%
	DOTS useful for TB patients	50	48	2	96%
	Knowledge of DOT Plus	50	19	31	38%

Table-I. Following are all the results from MOs survey in tabulated form.

## DISCUSSION

In a study by Sadiq M.A. In Karachi, the physicians were unaware about right treatment of TB patient under DOTS. Only one out of seven i.e. 14.3% practice DOTS properly. In the present study only 2 MOs out of fifty i.e. 18.6% practice DOTS properly. The practice of DOTS for treatment of TB by the MOs in teaching hospitals is nearly negligible. In present study only 2 MOS out of 50 are practicing it. Rest of MOs provide domiciliary treatment of Tb and ask the patient to come for follow up. They don't provide supervision of treatment. So there is a strong need to create awareness among MOs about implementation of DOTS. For this purpose, Govt. should take active participation. Programs should be instituted for doctors about the benefits of DOTS and its implementation Seminars and conferences should be arranged. Media should also be used actively for advertisement of DOTS

implementation and benefits. Articles should be published. Courses should be arranged for training of doctors. It should be instituted from basic health unit up to teaching hospitals.

## CONCLUSION

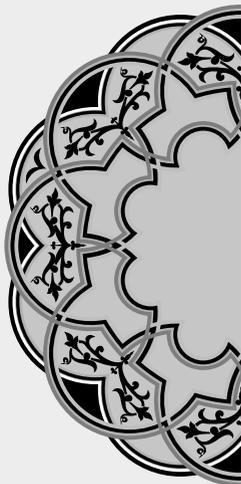
So, to sum up the conclusion, after careful calculations and considering all the variables and putting them under the statistics, it was calculated that 77.5% of MOS working in teaching hospitals of Faisalabad city have the knowledge about DOTS, while only 18.6% of them are actually practicing DOTS.

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*“A man who cries all the time is not heard.”*

**African Proverb**

#### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Alia Liaqat	Study conception and design, Critical revision	
2	Dr. Muhammad Awais Iqbal	Drafting of manuscript	
3	Muhammad Abdur Rehman Khadam	Acquisition of data, Analysis and interpretation of data	