

# TUBERCULOSIS PATIENTS OPINION FOR DIRECTLY OBSERVED TREATMENT SHORT-COURSE (DOTS) PROGRAMME OF NEPAL

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## ABSTRACT

**Background :** DOTS is the most effective strategy available today for tuberculosis control.

**Objectives :** To find out patients knowledge and opinion about DOTS programme of Nepal.

**Methods :** The prospective study was conducted in tuberculosis patients attending DOTS programme in Nepal. Questionnaires are used to collect patient knowledge and opinion.

**Results :** Tuberculosis was most (73%) commonly found in economically active age group (21-50 years old). The incidence of tuberculosis was found higher in male than in female, most of them were married (55%). Tuberculosis cases were commonly found in rural areas 59%, most of them were illiterate 27% and farmers 23.6% respectively. Majority of patients (72%) family size was large 5-7 persons. Knowledge about DOTS programme, majority of the patients (58.3%) answered correctly. The patient's opinion for improving DOTS programme of Nepal, most of them (26.6%) suggested to educate the TB patients and their family members about tuberculosis (method of transmission, dose and side effects of medicine, suitable method for disposal of sputum and other materials and what are the consequences, if drug doses are not completed), 20% of the respondents were of the view that the medicine for tuberculosis should be made available in each and every health care units, 17.6% suggested that according to patients problem drug should be allowed to bring home for one month, 10% suggested to improve behavior of health care workers, 7.3% suggested government should provide free balance diet along with free medicine, 5% suggested make more publicity and 13.3% of patients had no suggestion they thought it was satisfactory.

**Conclusion :** To improve the efficacy of DOTS programme, along with free medicine and directly observed treatment, Tuberculosis control authority should design health education programme for patients, family members and community people such as mode of transmission, preventive methods of tuberculosis and consequences of incomplete treatment.

**Key words :** DOTS, TB, Knowledge

## INTRODUCTION

Directly Observed Treatment Short-course (DOTS) is a TB control strategy pioneered by the International Union Against TB and Lung Disease (IULTD) and

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recommended by World Health Organization (WHO). The WHO advises that all TB patients should have at least the first two months of their therapy observed (and preferably the whole of it observed): this means an independent observer watching tuberculosis patients swallow their anti-TB therapy. The independent observer is often not a healthcare worker and may be a shopkeeper or a tribal elder or similar senior person within that society. DOTS is used with intermittent dosing (thrice weekly or 2HREZ/4HR<sub>3</sub>). Twice weekly dosing is effective (A 62-dose, 6 month therapy for

pulmonary and extra-pulmonary tuberculosis), but not recommended, because there is no margin for error (accidentally omitting one dose per week results in once weekly dosing, which is ineffective). There are five key elements that are considered essential for the implementation of the DOTS strategy. These are: 1. Government commitment to sustained TB control. 2. Sputum smear microscopy to detect the infectious cases among those people attending health care facilities with symptoms of pulmonary TB, most importantly cough of three weeks' duration or more. 3. Standardized short course anti-TB treatment for at least all sputum smear positive pulmonary TB cases, with direct observation of treatment for at least the initial two months. 4. Regular, uninterrupted supply of anti-TB drugs and diagnostics, and 5. Monitoring and accountability system for programme supervision and evaluation of treatment outcome for each patient diagnosed<sup>1</sup>.

The review of National Tuberculosis Programme (NTP) of Nepal was carried out jointly by Nepal Government and World Health Organization in 1994. The review team was found the case finding result of 30% and the cure rate of only 40%. The review team recommended Nepal Government to change the NTP strategy to achieve better result. DOTS strategy was adopted in Nepal by approval of 5-years development plan in 1995. Impressive achievements have been made since then. The NTP has rapidly expanded the DOTS coverage from 1.7% in 1996 to 100% by July 2003. In fact, by July 2001, the DOTS strategy has been expanded to all the districts of Nepal. By mid July 2006 the number of DOTS centers reached 560 treatment centers with 2,795 sub centers, established and integrated with general health services throughout the country. Now almost all diagnosed TB patients are getting treatment under DOTS strategy with more than 85% treatment success rate (now 88%)<sup>2</sup>.

## METHODS

The present prospective study was carried out in tuberculosis patients who attended Directly Observed

Treatment Short Course Programme in, Kathmandu Medical College Sinamangal Kathmandu and German Nepal Tuberculosis Project Kalimati, Nepal during 2006 to 2007. The study was conducted based on questionnaires included 300 diagnosed cases of pulmonary tuberculosis. A structured questionnaire prepared in English and translated into Nepali language was the tool for data collection. The research objectives and methods explained to the patients, and verbal consent obtained from them before the data were collected. The selection criteria of patients were based on random sampling. Open ended self administered questionnaires was given to the tuberculosis patients and requested to fill the questionnaires to collect their knowledge and opinion and those who are illiterate were taken interview. The questionnaire consisted of two sections. Section one, dealing with patient background characteristics (age, sex, marital status, family size, education, occupation and urban rural distribution). Section two, dealing with patients knowledge and opinion about DOTS programme of Nepal. Data was analyzed by EPI-Info version 3.3.2, document version 8.08 updated Sept 2005 and presented by means of tables and diagrams.

## RESULTS

A total 300 tuberculosis patients were included in this study. Tuberculosis was most (73%) commonly found in economically active age group (21-50 years old) shown in figure 1. Tuberculosis was found higher in males than females, most of them were married (55%), living in rural areas (59%) and 72% tuberculosis patients family have 5-7 family members were shown in table 1. Majority of patients are illiterate (27%) and farmers (23.6%) were shown in figure 2 and 3 respectively.

It is obvious from the data compiled from the questionnaires that majority (58.3%) of the respondents were aware about DOTS programme and answered correctly were shown in table 2. The patients were asked to give their opinion for

improving DOTS programme of Nepal. Majority of the respondents suggested to educate TB patients and their family members about tuberculosis (methods

of transmission, dose and side effects of medicine, suitable method for disposable of sputum and other materials and what are the consequences if drug doses are not completed) shown in table 3.

Table 1. Socio-demographic characters of TB patients		
Gender wise distribution of patients	Males	Females
	64%	36%
Marital status of patients	Married	Unmarried
	55%	45%
Urban and rural distribution of patients	Urban	Rural
	41%	59%
Family size of patients	Family members (2-4)	Family members (5-7)
	28%	72%

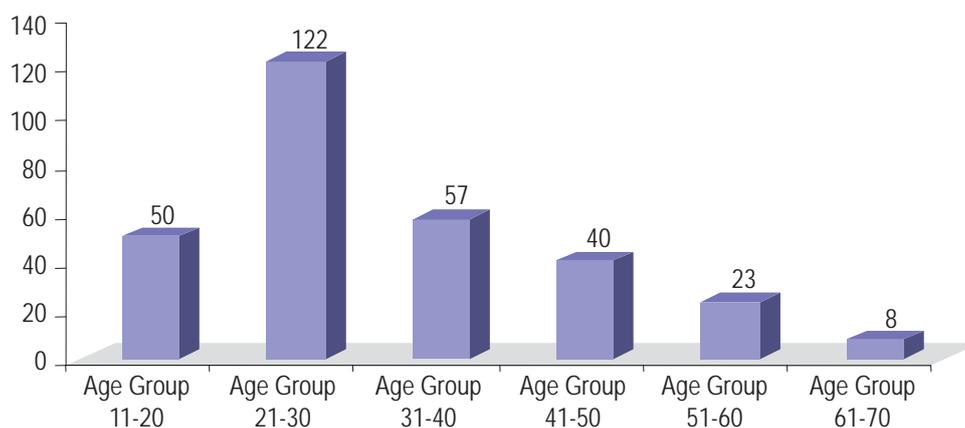


Figure 1: Age wise distribution of patients

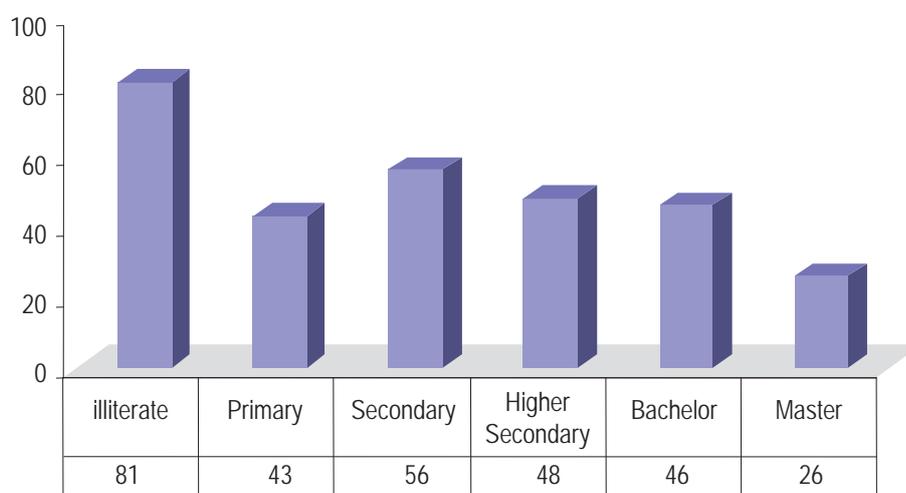


Figure 2: Educational qualification of patients

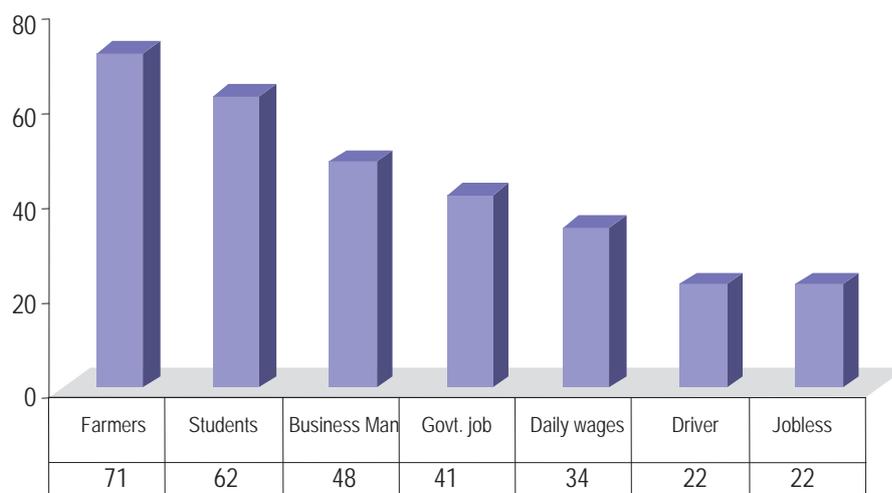


Figure 3: Occupation wise distribution of patients

Table 2: TB patient's knowledge about DOTS programme			
Knowledge about DOTS programme	Patients answer	Frequency	Percentage
Known	Patients should swallow TB drugs under direct observation of health worker or social worker	175	58.3%
Partially known	Method of tuberculosis treatment.	30	10%
	Patients get free TB medicine.	20	6.6%
Don't know	Don't know	75	25%

Table 3: Patients opinion for improving DOTS programme of Nepal		
Patients opinions	Frequency	Percentage
Educate TB patients and their family members about tuberculosis (methods of transmission, dose and side effects of medicine, suitable method for disposal of sputum and other materials and what are the consequences, if drug doses are not completed).	80	26.6%
TB medicine should be available at each health care unit.	60	20.0%
According to patients problem (those who are coming from far distance) drug should be allowed to bring home for one month.	53	17.6%
Improve behavior of health care workers.	30	10%
Government should provide free balance diet along with free medicine.	22	7.3%
Make more publicity.	15	5%
No suggestion, they thought it was satisfactory.	40	13.3%

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## DISCUSSION

Tuberculosis is a social disease with medical aspects. It has also been described as a barometer of social welfare. The social factors include many non-medical factors such as poor quality of life, poor housing, and overcrowding, population explosion, under-nutrition, lack of education, large families, early marriages, lack of awareness of causes of illness, etc. All these factors are interrelated and contributed to the occurrence and spread of tuberculosis<sup>3</sup>. Drug resistance is caused by inadequate treatment and poor tuberculosis control programmes. The most common reasons for the development of resistance are a) Incorrect prescription, b) Irregular supply of drugs, c) Non compliance of treatment, and d) Lack of supervision and follow up. Directly observed treatment is necessary to ensure that people take TB medicines correctly. Unsupervised treatment commonly results in mistakes in taking medicines. Various studies have demonstrated that about 30% of people do not take medicines as prescribed. Common mistakes include missing doses of medicines, selective avoidance of some medicines and dividing doses inappropriately. The basic principle of DOTS is therefore to assist patients to help them adhere to their treatment. Without DOTS, the cure rate in TB patients is usually less than 60% and often much lower. With DOTS, it is possible to achieve cure rates in excess of 90%<sup>4</sup>.

Nearly two thirds (64%) of the patients are males as a case of high incidence which is in agreement with (65%) the study conducted by Bam (2003)<sup>5</sup>. In almost all areas where the TB is the public health problem, the incidence of TB among woman is less than man. Gender is not merely the biological difference but the differences between men and women in their roles, behaviors, expectations and opportunities, within a social cultural and economic context<sup>6</sup>. More than half (55%) of the respondents were married. Patients either married or unmarried or even divorced do not want to be labeled as TB patient due to the social stigma in developing countries. Most of people try to hide their disease. In the present study majority 59%

of the respondents were living in rural area. Rural inhabitants do not have the same level of access to social services, such as health and education facilities and infrastructure as their urban counterpart.

The finding of this study shows that majority of the respondents (58.3%) were knew about DOTS programme, out of that 20% respondent were well educated. TB can be regarded as a symptom of poverty caused by the unequal distribution of resources globally. However, poverty within a society is not distributed equally among its social classes, and among the two sexes. Estimate show that 70% of the world's poor are women<sup>6</sup>. If the patients have good education, they can understand good impact of regular treatment and bad impact of irregular treatment. But who are illiterate, they are simple and innocent but difficult to convince for regular treatment using DOTS. Therefore education plays the vital role in TB treatment.

The result found that most of the respondents were farmers (27.5%) followed by students (24%) and business man (17%). The results are in agreement with the study of Subedi et al. (2004)<sup>7</sup> reporting farm work (21.7%), students (18.3%), and business man (7.5%). TB is a disease found mostly in poor socioeconomic and underprivileged groups. Thus, the disease usually occurs in areas with overcrowded populations such as slums, recreational facilities, refugee camps, and shelters for the homeless, moreover, people whose work may expose them to TB, such as health care workers, are also at higher risk of TB infection and TB disease. Most of the TB patients belong to poor especially in developing countries. They have to work for their every day life. Therefore patients are engaged in different kinds of occupations. In developing countries most of the TB patients are closely associated with farming and labouring. So it is claimed that occupation affects the TB patients to take daily dose medicines using DOTS.

Patients opinion regarding DOTS programme of Nepal majority of them (26%) suggested to

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educate TB patients and their family members about tuberculosis such as method of transmission, dose and side effects of medicine, suitable method for disposal of sputum and other materials and what are the consequences, if drug doses are not completed. This study showed that perception about the tuberculosis has been changed positively with the intervention of chemotherapy. Information and communication is the main source of knowledge. For the tuberculosis patient's knowledge on the cause of disease, transmission of disease, diagnosis method, treatment and duration of treatment, side effects of drugs and benefits of DOTS are essential. If the patient has poor knowledge about these subjects, the treatment compliance rate could be poor. As the result, multi drug resistance and mortality rate will be increased. DOTS is the most effective strategy available today for tuberculosis control<sup>4</sup>. It has been suggested that DOTS works better in certain situation/countries, perhaps not at all in others, depending on local conditions and the level of public administration<sup>8</sup>. Directly observed treatment is an important element in the internationally recommended policy package for TB control. It ensures that a TB patient's takes the right anti-tuberculosis drugs, in the right doses, at the right intervals. Implementation of DOT depends on the setting, facilities, resources and environment. Therefore there must be flexibility in applying directly observed treatment, with adaptation in different districts and countries.

In this study 10% of respondents suggested improve behavior of health care workers. Health care workers role is vital to control tuberculosis. TB patients fully depend on their advice. Their minor mistake or careless creates major problems. Health workers should teach TB patients simple measures how to decrease the risk of transmitting TB. These include covering the mouth with the hand when coughing, dose and side effects of medicine, suitable method for dispose of sputum using sputum pots with lids and what is the consequence if drug doses are not completed. When examining TB patients ask them to turn their head to one side. This is to avoid the patient

coughing directly at the health worker.

7.3% of respondents suggested government should provide free balance diet along with free medicine. TB is a disease found mostly in poor socioeconomic and underprivileged groups. In Nepal about 40% of people are under the poverty line<sup>9</sup>. The urban poor are increasing day by day. Most of the TB cases come from the poor society. People cannot afford the travel costs and for other things from their earnings. Migrants are particularly vulnerable to a wide range of communicable infection such as tuberculosis and HIV. They often encounter considerable difficulties in accessing health care and adhering to prescribed treatment regimens. TB control programmes thus face the problems of providing accessible care for migrants with TB and ensuring that patients can complete the treatment. Many migrant groups exist: permanent, temporary and seasonal: voluntary, forced and trafficked; legal and illegal; and internal and international. Migration is predominantly due to economic reasons<sup>4</sup>.

## CONCLUSION

Tuberculosis treatment programme DOTS provide free of medicines, and ensures that a TB patients takes the right anti-tuberculosis drugs, in the right doses, at the right intervals. This study revealed that majority of patients suggested to educate TB patients and their family members about tuberculosis, such as method of transmission, dose and side effects of medicine, suitable method for disposal of sputum and other materials and what are the result of incomplete treatment. It will help to reduce the transmission of disease and prevent drug resistant cases and improve the efficacy of DOTS programme.

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