Attitude and Awareness of DOT Providers about TB in Tuberculosis Unit Patiala

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Abstract

Introduction: The Revised National Tuberculosis Control Program (RNTCP), based on the DOTS strategy, began as a pilot in 1993 and was launched as a National Program in 1997. The entire country was covered under DOTS by 24\textsuperscript{th} March 2006. DOT providers are primarily responsible for the success of the programme at the field level by giving a VIP status to the patient in the programme. So the present study was conducted to know the attitude, beliefs and awareness of DOT providers regarding Tuberculosis. Material and Methods: A cross sectional study was conducted among the DOT providers of Tuberculosis Unit Patiala from July to September 2008. A pre-tested questionnaire was used to collect the relevant information from all the DOT providers. The questionnaire consisted of questions regarding their awareness and attitude about Tuberculosis, RNTCP and DOTS. Results: The study revealed that the majority of them i.e. 52% were in age group of 31-40 years. Forty two (84%) DOT providers were trained. All the DOT providers knew that tuberculosis is a curable disease. Only 78% of the DOT providers knew that sputum examination is the first line investigation to diagnose TB. Source of latest information about tuberculosis to DOT providers were health officials (78%), books (22%), seminars (10%), media (10%). Knowledge about treatment schedule between trained & untrained DOT Providers was found to be Highly Significant (p<.01). 40% of DOT Providers had fear of contracting the disease, no DOT provider worked for incentives, 74% said that treatment of TB patient should be kept confidential. 32% said that TB is a social stigma. Conclusions: After assessing the knowledge and attitude of DOT providers various gaps were found. So training to DOT providers should be imparted before they start giving DOTS therapy. Reorientation courses should be organized periodically to update the DOT providers regarding TB disease and Treatment. Constant monitoring and supervision is required for proper implementation of DOTS.

Keywords: DOTS, DOT Provider, RNTCP

Introduction

Though India is the second-most populous country in the world one fourth of the global incident TB cases occur in India annually. In 2012, out of the estimated global annual incidence of 8.6 million TB cases, 2.3 million were estimated to have occurred in India. There is 42% reduction in TB mortality rate by 2012 as compared to 1990 level. Similarly there is 51% reduction in TB prevalence rate by 2012 as compared to 1990 level (1).

India had a national Tuberculosis programme (NTP) in operation since 1962. After initial success, programme didn’t attain the
achievements that it promised. Through it only 1/3rd of total patients receiving treatment used to complete the treatment (2).

The Revised National Tuberculosis Control Program (RNTCP), based on the DOTS strategy, began as a pilot in 1993 and was launched as a National Program in 1997. The entire country was covered under DOTS by 24th March 2006 (3). In DOTS, an observer (health worker or a trained community volunteer who is not a family member) watches and supports the patients taking drugs. It is this DOT provider who ensures that the patient takes right drugs in right doses at right interval for right duration. DOT providers should be accessible, acceptable and accountable (4).

The information and education provided by the health care worker and the subsequent relationship of the TB client and their provider is an essential component in the successful treatment of the disease (5). Accurate health educational efforts should not overstate or over dramatize TB, as this could reinforce stigma and denial (6). More importance should be given to treatment adherence under the current TB control program. Heavy financial burdens, lack of social support, adverse drug reactions and personal factors are associated with non-adherence. Direct observation and regular home visits by health workers appear to reduce the risk of non-adherence. More patient-centered interventions and greater attention to structural barriers are needed to improve treatment adherence (7).

DOT training needs to be imparted to the treatment providers and health personnel of both public as well as private sectors through perusal of training strategies for individual categories of trainees. Existing training limitations need to be resolved. Key training players have played a vital role in initiating the DOTS training process all over country and need to sustain the efforts. Both training and research complement each other and need encouragement for the effective TB control (8).

DOT providers play an important role in success of RNTCP. So the present study was conducted to know:
1. The attitude of the DOT Providers and their beliefs regarding the tuberculosis.
2. The knowledge about tuberculosis among the DOT Providers.
3. The relation between training status of DOT providers and various aspects of TB treatment.

Material and methods
A cross sectional study was conducted in Tuberculosis Unit Patiala from July to September 2008. There are 25 Government DOT centres in T.U. Patiala & there were 52 DOT providers in these centres including pharmacists, nurses, MPHWF, class IV, treatment organizer & radiographer. Out of 52 DOT providers, 50 gave consent for study. A pre-tested questionnaire was used to collect the relevant information from all the DOT providers. The questionnaire consisted of questions regarding their awareness and attitude about Tuberculosis, RNTCP and DOTS. The data collected from all the DOT providers was compiled and analyzed using SPSS 16.0 version.

Results
The present study comprises of sample of 50 DOT providers working in the Government DOT centres of Tuberculosis Unit Patiala. The awareness of DOT providers regarding tuberculosis, Revised National Tuberculosis Control Programme (RNTCP) and Directly Observed Treatment Short course (DOTS) was noted. Information regarding their attitude and beliefs towards tuberculosis was also collected. Out of 50 DOT providers 37 (74%) were females and 13 (26%) were males. The mean age of the DOT providers was 39.98 years with
Table 1: Profile of DOT providers

<table>
<thead>
<tr>
<th>Profile of DOT providers</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Female</td>
<td>37</td>
<td>74</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>31-40</td>
<td>26</td>
<td>52</td>
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<td>41-50</td>
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<td>51-60</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPHWF</td>
<td>21</td>
<td>42</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Nurse</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Class IV</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>T/t Organizer</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Radiographer</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Experience under RNTCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>1-3</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>4-6</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>7-9</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Training Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trained</td>
<td>42</td>
<td>84</td>
</tr>
<tr>
<td>Not trained</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Duration of training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 days</td>
<td>41</td>
<td>82</td>
</tr>
<tr>
<td>2 weeks</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 2: Relation of knowledge about various aspects of TB treatment with the training

<table>
<thead>
<tr>
<th>Training Status of DOT provider</th>
<th>Knowledge about Treatment Schedule</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Trained</td>
<td>41</td>
<td>1</td>
</tr>
<tr>
<td>Untrained</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>4</td>
</tr>
</tbody>
</table>

Chi-square- 6.49 (With Yates correction) P < 0.01 (highly significant)

<table>
<thead>
<tr>
<th>Training Status of DOT provider</th>
<th>Knowledge about sputum samples for follow up</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Trained</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>Untrained</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>15</td>
</tr>
</tbody>
</table>

Chi-square – 11.91 (With Yates correction) P < 0.01 (highly significant)

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Knowledge about way of sputum sample collection for follow up

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trained</td>
<td>32</td>
<td>10</td>
<td>42</td>
</tr>
<tr>
<td>Untrained</td>
<td>1</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>17</td>
<td>50</td>
</tr>
</tbody>
</table>

Chi-square – 9.48 (With Yates correction)  P < 0.01 (significant)

standard deviation of 6.09 years. The minimum age of the DOT providers was 25 years and maximum age was 52 years. Majority of them i.e. 52% were in age group of 31-40 years. 44 (88%) of DOT providers were in age group of 31-50 yrs. Maximum DOT providers were MPHWF (42%) while 15 (30%) were pharmacists, 5(10%) were nurses, 7 (14%) were class IV, 1 (2%) was radiographer and 1 (2%) was treatment organizer.

Forty two (84%) DOT providers were trained. Out of 42 trained DOT providers 42% had training from DTO and 40% had training from MOTC. One of the DOT providers had training from NTI Bangalore. Regarding the duration of training, 41 (82%) had training session of two days. One of the DOT providers had training for 2 weeks from National Tuberculosis institute Bangalore.

It was noted that 25 (50%) DOT providers had experience ranging from 4-6 years. Four (8%) had experience of less than 1 year. Ten (20%) and 11 (22%) were having experience of 1-3 years and 7-9 years respectively.

All the DOT providers knew that tuberculosis is a curable disease. All DOT providers knew that TB spread by droplets but simultaneously 8 (16%) DOT providers said that it can spread from mother to child and they comprised 4 pharmacists and 4 MPHWF. Four (8%) DOT providers i.e., 2 pharmacists, 1 MPHWF & 1 class IV said that it can spread via feco-oral route. Four (8%) DOT providers i.e., 1 pharmacist, 2 MPHWF & 1 class IV said that blood route can spread infection while 2 (4%) DOT provider (1 MPHWF & 1 class IV) said it can spread through skin to skin contact. All the DOT providers knew the most important symptom of TB i.e. cough with expectoration and majority (78%) knew about the other symptoms of TB.

48 (96%) DOT provider, said that tuberculosis is more common in lower socio-economic status, while 2 (4%) said that it commonly affects middle class. Only 78% of the DOT providers knew that sputum examination is the first line investigation to diagnose TB. Source of latest information about tuberculosis to DOT providers were health officials (78%), books (22%), seminars (10%), media (10%).

Forty six (92%) of the DOT providers knew that drugs in Intensive Phase are given in thrice weekly doses. While 100% knew that in Continuation Phase treatment is given daily (including pyridoxine). Knowledge about treatment schedule between trained & untrained DOT Providers was found to be Highly Significant (p<.01).

All the DOT providers (100%) used to weigh patient before starting treatment. Forty two (84%) DOT providers considered a contact case if child is <6yr old. 33 (66%) knew and educated the patient about change in urine colour on taking Rifampicin.
39 (78%) of DOT providers knew about the side effects like nausea and vomiting. Thirty three (66%) knew that jaundice is the side effect of ATT. Twenty five (50%), 13 (26%), 12 (24%) and 9 (18%) knew the side effects like itching, vertigo, joint pains and visual disturbance respectively. The most common reason told by DOT providers for default action of the patient was toxicity of drugs (52%) followed by improvement in symptoms (44%). Other reasons for default were change of address (24%), deterioration (12%) and affordability (8%).

40% of DOT Providers had fear of contracting the disease, no DOT provider worked for incentives, 74% said that treatment of TB patient should be kept confidential. 32% said that TB is a social stigma. All the DOT providers knew that tuberculosis is a curable disease. Almost similar results were reported in a study done in New Delhi (9). All DOT providers knew that TB spread by droplets. Similarly a study conducted among General Practitioners in Northern Areas of Pakistan it was found that according to 77 respondents (87.5%), TB was a droplet infection. (10) 48 (96%) DOT provider, said that tuberculosis is more common in lower socio-economic status, while 2 (4%) said that it commonly affects middle class. Similar results were found in a study conducted in Vietnam in 1996. (11) Only 78% of the DOT providers knew that sputum examination is the first line investigation to diagnose TB. Similarly in a study done among DOT providers at Chennai, Chest X-ray was quoted by 81% while sputum examination was given by 65% as investigations to be done for tuberculosis (12).

Health education given by DOT providers on various aspects of TB were: regarding regular treatment (98%), for taking good diet (94%), proper disposal of sputum (92%), covering of mouth while coughing (94%), personal hygiene (90%), cessation of alcohol and smoking (74%).

Discussino

The study comprised of 50 DOT providers in TU Patiala. Out of 50 DOT providers 37 (74%) were females and 13 (26%) were males. The mean age of the DOT providers was 39.98 years with standard deviation of 6.09 years. Maximum DOT providers were MPHWF (42%) because they are the most easily available health care workers at any government health facility to provide DOTS therapy.

The study shows that majority of the DOT providers (84%) are trained under RNTCP. Out of trained DOT providers 41 (82%) had training session of two days. One of the DOT providers had training for 2 weeks & he was a treatment organizer who got training from National Tuberculosis institute Bangalore.

All the DOT providers were having work experience under RNTCP. All the DOT providers knew that tuberculosis is a curable disease. Almost similar results were reported in a study done in New Delhi (9). All DOT providers knew that TB spread by droplets. Similarly a study conducted among General Practitioners in Northern Areas of Pakistan it was found that according to 77 respondents (87.5%), TB was a droplet infection. (10) 48 (96%) DOT provider, said that tuberculosis is more common in lower socio-economic status, while 2 (4%) said that it commonly affects middle class. Similar results were found in a study conducted in Vietnam in 1996. (11) Only 78% of the DOT providers knew that sputum examination is the first line investigation to diagnose TB. Similarly in a study done among DOT providers at Chennai, Chest X-ray was quoted by 81% while sputum examination was given by 65% as investigations to be done for tuberculosis (12).

In our study the most common source of latest information about TB was health official (78%). This could be because DOT providers in this study are in government DOT centres so they are frequently visited by the health officials and all of them are paramedics so they are not aware of the latest updates of journals and not attending the conferences.

Forty six (92%) of the DOT providers knew that drugs in Intensive Phase are given in thrice weekly doses. While 100% knew that in Continuation Phase treatment is given daily (including pyridoxine). Knowledge about
treatment schedule between trained & untrained DOT Providers was found to be Highly Significant (p<.01). Balambal also found in his study that 78 (80%) out of 97 DOT providers knew the treatment rhythm, intermittent during phase-I and daily during phase-II. (13)

All the DOT providers (100%) used to weigh patient before starting treatment. The knowledge about weight of patient above which additional dose of Rifampicin is needed was present in majority i.e. 84% of DOT providers. Forty two (84%) DOT providers considered a contact case if child is <6yr old. Thirty three DOT providers (66%) knew and educated the patient about change in urine colour on taking Rifampicin.

The most common reason told by DOT providers for default action of the patient was toxicity of drugs (52%) followed by improvement in symptoms (44%). Other reasons for default were change of address (24%), deterioration (12%) and affordability (8%). Similarly Pandit & Choudhary observed that majority of patients on DOT stopped treatment because of toxicity of drugs. The other reasons were feeling better during treatment and lack of knowledge about various aspects of TB and its treatment (14).

40% of DOT Providers had fear of contracting the disease, no DOT provider worked for incentives, 74% said that treatment of TB patient should be kept confidential. 32% said that TB is a social stigma. According to 42% TB patient should be isolated and according to 68% TB patient should use separate utensils. 92% said that TB patient should eat high protein diet. 92% said that the patients taking treatment respect them. Only 22% said that they had difficulty in provision of DOTS. These findings are consistent with the findings of study done by Balambal (2001) that none of the DOT providers worked for compensation. He also found that 72% feel that confidentiality in treatment is needed and only 32% of DOT providers confronted with problems like haemoptysis or breathlessness. (13)

The health education given by DOT providers on various aspects of TB were: regarding regular treatment (98%), for taking good diet (94%), proper disposal of sputum (92%), covering of mouth while coughing (94%), personal hygiene (90%), cessation of alcohol and smoking (74%). Similarly in a study done in New Delhi it was found that 85% of DOT providers proposed coverage of mouth during coughing and sneezing (9).

Conclusions: After assessing the knowledge and attitude of DOT providers various gaps were found. The knowledge and attitude of DOT providers about TB disease and treatment is an important component in disease control. There is a need to impart the training to DOT providers before they start giving DOTS therapy. Reorientation courses should be organized periodically to update the knowledge of DOT providers regarding the TB disease, its diagnosis, treatment and follow up of patients. Constant monitoring and supervision is required by trained staff in Tuberculosis Unit.

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References
1. TB India 2014, RNTCP Status Report, Central TB Division Government of India New Delhi. Available at: (}

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