ADHERENCE OF THE NTP TO DOTS RECOMMENDED DEFAULTERS TRACING MECHANISM IN KHYBER PAKHTUNKHWA, PAKISTAN

Afridi NK[1], Fatima S[2], Khan S[3], Thapa B[4]

[1, 4] SAARC TB and HIV/AIDS Centre, Kathmandu
[2] Khyber Teaching Hospital, Peshawar
[3] Federal Government Medical Center, Peshawar

ABSTRACT

Introduction: Tuberculosis is still a major public health problem worldwide. Pakistan is one of the few countries with extremely high tuberculosis (TB) incidence and ranks sixth among the 22 high TB burden countries. World Health Organization (WHO) and International Union Against Tuberculosis and Lung Diseases (IUATLD) advocate the use of DOTS strategy to control tuberculosis. The study aimed to determine the adherence of DOTS facilitators and treatment supporters to the defaulter tracing mechanisms in Khyber Pakhtunkhwa.

Methodology: A Cross Sectional study was conducted in five districts Khyber Pakhtunkhwa. A total of 200 participants were included in the study of which 150 were DOTS facilitators and 50 were treatment supporters. A pre-tested structured questionnaire was administered to the participants. Five randomly districts of Khyber Pakhtunkhwa were selected out of the total of 24 districts and from each district 10 health facilities were then chosen. The DOTS facilitator and treatment supporters attached to these health facilities were interviewed. Two Focus Group Discussions were also held from a group of defaulted patients.

Results: The study showed that 90% of the health facilities did not have desk guides and 82% of the treatment supporters did not receive training in DOTS strategy. The reasons of defaulting mentioned by DOTS defaulters in the Focus Group Discussion were lack of defaulter tracing mechanism that approach them and health education regarding the hazards of treatment interruption.

Conclusion: The study is very significant as it highlights the deficiencies in implementation of DOTS tracing mechanism. The findings of the study could be of help to national as well as provincial tuberculosis programme. The main recommendation is to provide training to treatment supporters in DOTS strategy and to update guidelines for defaulter tracing.

Key words: Tuberculosis, Pakistan, Cross-sectional study, World Health Organization.

INTRODUCTION

World Health Organization (WHO) and International Union Against Tuberculosis and Lung Diseases (IUATLD) advocate the use of DOTS strategy to control tuberculosis.[1,2] DOTS strategy is made up of five operational components: political commitment, diagnosis and follow up through sputum microscopy, regular un-interrupted supply of drugs, accurate cohort recording and analysis, and use of standardized short course drug regimen including direct observation of treatment by people responsible to the health services. The direct observation of treatment component is intended to address patient's non-compliance. DOTS is one of the simplest strategies to help cure the tuberculosis patients.[3]

Correspondence:
Dr. Naseem Khan Afridi
Epidemiologist
SAARC TB and HIV/AIDS Centre
Thimi, Bhaktapur, Nepal
Tel: 00977-1-6632601 (O)
E-mail: naseemkafridi@hotmail.com

Pakistan is one of the few countries with extremely high tuberculosis (TB) incidence and ranks sixth among the 22 high TB burden countries[4] and contributes 43% of the TB cases in the Eastern Mediterranean Region. Although national TB programme in Pakistan has made noticeable progress during the last few years the treatment success and case detection rates are far below the global targets of 85% treatment success and 70% case detection rates.[5] A defaulter rate of approximately 12% is a challenge for the national programme interventions.[6] The Khyber Pakthunkhwa Province of Pakistan with an estimated population of 20 million lies in the northwestern part of Pakistan bordering Afghanistan. The estimated number of all forms tuberculosis was 329 per 100,000 population in the year 2004 and the estimated incidence of sputum smear positive is 81/ 100,000 population. [7]

National Tuberculosis Control Programme has developed guidelines for retrieval of absent/ defaulted patient; i.e., if patient (or his supporter/ family menber) fails to turn up within seven days or more of his/her scheduled visit to collect medicine. DOTS Facilitator must identify (in time) the delay, and arrange for retrieval of the absentee (patient) through one or more of the ways: 1. Coordinating with the community health worker in the area. 2. Home visiting by a staff member of treatment center, where feasible. 3. Writing letter to patient, where deemed suitable and found feasible. 4. Other feasible way, as deemed suitable under local circumstances.[8] Many studies were conducted that determined the causes of default from defaulters end while there is dearth of studies from care providers end so it became essential to conduct a study regarding adherence of care providers to DOTS defaulter strategy.

The study was designed to determine the extent of adherence of DOTS facilitators and treatment supporters to the defaulter tracing mechanisms in Khyber Pakhtunkhwa and to give recommendations. The study would help the provincial TB control programme in framing their policies and practices with regard to DOTS defaulting mechanism, which in turn would reduce the defaulter rates.

METHODOLOGY

A cross sectional study was carried out from March to July 2005 in five randomly selected districts Khyber Pakhtunkhwa out of the total 24 districts namely, Peshawar, Mardan, Nowshera, Bannu and Mansehra. The total population of these five districts was 6182097. In each of these districts 10 health facilities were randomly selected (total n=50 facilities). Assuming that the frequency of non-adherence of DOTS facilitators & treatment supporters to the retrieval mechanism was 2% and the maximum allowed error of 0.1%. Therefore the least reliable sample size was 200. The sample size calculated for was 200 participants. The study subjects consisted of 50 DOTS Facilitators and 150 treatment supporters who were attached to TB patients under DOTS (Total n=200 subjects). DOTS facilitators were medical officers, dispensers, medical technicians, lady health visitors while treatment supporters were lady health workers, volunteers and staff working in health facilities. DOTS facilitator usually keeps the TB registers updated while the treatment supporters have treatment support cards of the patient under treatment/supervision.

Within each health center one DOTS facilitator and three to four treatment supporters were interviewed. In case a health center was closed or the concerned staff was not present then the next health center in the list was visited and this health center was again visited. If this health center was again found to be closed then a new health center was selected randomly from the remaining health centers. Informed consent was taken from each of the participants before conducting the interview.

A pre-coded questionnaire was developed in English to obtain information regarding the adherence of NTP to DOTS defaulters tracing mechanism in Khyber Pakhtunkhwa. The questionnaire was translated into Urdu, and then back into English. The study was pre-tested in five health centers of district Peshawar.

The questionnaire included the following variables related to DOTS Facilitator: gender, education level, his/her designation, duration of service, training in DOTS strategy, duration of working as DOTS facilitator, availability of desk guide in Urdu, and their knowledge, practices and recommendations regarding DOTS defaulter tracing mechanism.

The variables related to treatment supporter were: his/her designation, education level, duration of

service, duration of working as treatment supporter, training in DOTS strategy, and their knowledge, practices and recommendations regarding DOTS defaulter tracing mechanism. Before conducting the interviews informed consent was sought from the participants. Two focus group discussions were also held with the traced defaulters in order to elucidate the reasons of defaulting. Each of the FGD held consisted of eight participants. The groups members participated were homogenous. Only those participants were included who were adults and defaulted for more than two months.

Data Analysis

To minimize the chances of error data were double entered using EPIINFO 6.04d[9] computer software package. Data were analyzed using software package SPSS[10] (Statistical Package for Social Sciences version 10.0). Simple descriptive statistics were applied. Distributions of categorical variables were investigated and percentages and frequencies were calculated. Data collected from the FGDs were also analyzed. Questions regarding default were formulated before the FGD were held. Questions were open-ended, simple, unbiased and nonthreatening. The participants were recruited with the help of district TB officer. The FGD was recorded in a tape recorder while at same time a person was hired who took notes of the discussion. A mediator was also recruited who initiated the FGD and guided the discussion focused on default. The mediator was neutral in FGD and did not appreciate or showed displeasure over the responses. Each FGD session lasted for about an hour. The issues that were discussed were why they defaulted, any one from health facility tried to retrieve them, duration of their treatment, follow up visits, supervision by treatment supporters, side effects of anti-TB medicines, financial charges involved in TB treatment, health education regarding anti-TB treatment, benefits involved in completing the treatment and hazards involved in stopping the treatment and travel to health facility.

RESULTS

A total of 200 participants were interviewed, 50 DOTS facilitators and 150 treatment supporters in 50 health centers of 5 randomly selected districts of Khyber Pakhtunkhwa. Eighty four percent DOTS facilitators were males while 88% of treatment supporters were females. Among DOTS facilitators, 44% were male medical technicians followed by medical officers (24%), while majority of the treatment supporters (83%) were lady health workers. Eighty two percent of the treatment supporters did not receive training in DOTS strategy while 84% of the DOTS facilitators had received training in DOTS (Table 1).

Table 1. Characteristics of DOTS facilitators and treatment supporters in Khyber Pakhtunkhwa

Characteristics	DOTS Facilitators (n = 50) n (%)	Treatment supporters (n = 150) n (%)	Total (n = 200) n (%)
Gender			
Male	42 (84)	18 (12)	60 (30)
Female	08 (16)	132 (88)	140 (70)
Educational level			
Primary	00 (00)	19 (12.7)	19 (9.5)
Matriculation	10 (20)	84 (56)	94 (47)
Intermediate	14 (28)	28 (18.7)	42 (21)
Graduate	18 (36)	07 (4.7)	25 (12.5)
Post-graduate	08 (16)	04 (2.7)	12 (06)
Other (religious)	00 (00)	08 (5.4)	08 (04)
Designation			
Medical officer	12 (24)	00 (00)	12(06)
Medical technician (male)	22 (44)	00 (00)	22(11)
Medical technician (female)	04 (08)	04 (2.7)	08(04)
Lady health visitor	03 (06)	02 (1.3)	05(2.5)
Lady health worker	00 (00)	125 (83.3)	125(62.5)
Dispenser	09 (18)	00 (00)	09(4.5)
Ward orderly	00 (00)	02 (1.3)	02(01)
Community volunteer	00 (00)	13 (8.7)	13(6.5)
Other (shopkeeper)	00 (00)	04 (2.7)	04(02)
Received DOTS training			
Yes	42 (84)	27 (18)	69 (34.5)
No	08 (16)	123 (82)	131 (65.5)
Working in the health facility (years)			
< 1 year	15 (30)	02 (01)	17 (09)
1 – 10 years	32 (64)	127 (94)	159 (86)
> 10 years	03(06)	06 (04)	09 (05)

As shown in Table 2, fifty percent of the DOTS facilitators responded that treatment supporters gave them information regarding DOTS defaulters, while 99% of the treatment supporters said they gave information on DOTS defaulters to DOTS facilitators. The difficulties that were pointed out by DOTS facilitators in obtaining anti-tuberculosis medicines were mainly transport problem (33%) and those by treatment supporters was absence of concerned staff (35%).

Table 2. Adherence to the defaulter tracing mechanism by DOTS facilitators and treatment supporters

Variables	DOTS Facilitators n (%)	Treatment supporters n (%)	Total n (%)
Information given to facilitators regarding DOTS defaulters by treatment supporters			
Yes	25 (50)	148 (99)	173 (86.5)
No	25 (50)	02 (01)	27 (13.5)
Meeting between DOTS facilitator & Treatment supporter			
Less than 4 weeks	14 (28)	113 (75)	127 (63.5)
After 4 weeks	24 (48)	23 (15)	47 (23.5)
After more than 4 weeks	12 (24)	14 (10)	26 (13)
Retrieving an absent patient during initial phase of treatment (in days)			
≤ 7 days	42 (84)	145 (97)	187 (93.5)
> 7 days	08 (16)	05 (03)	13 (6.5)
Retrieving an absent patient during continuation phase of treatment (in days)			
≤ 7 days	23 (46)	142 (95)	165 (82.5)
> 7 days	27 (54)	08 (05)	35 (17.5)
Difficulties in obtaining anti-tuberculosis medicines			
Yes	12 (24)	20 (13)	32 (16)
No	38 (76)	130 (87)	168 (84)
Difficulties in obtaining anti-tuberculosis medicine			
Shortage of medicine	03 (25)	04 (20)	07 (22)
Concerned staff absent	02 (17)	07 (35)	09 (28)
Transport problem	04 (33)	01 (05)	05 (16)
Packaging of medicine	01 (08)	01 (05)	02 (06)
Unsatisfactory behavior	00 (00)	02 (10)	02 (06)
No response	02 (17)	05 (25)	07 (22)

Table 3 depicted that 74% of the treatment supporters responded that they were working/ attached to the health facility for a period of 1 – 5 years. Regarding a knowledge question that who kept the treatment support card, 53% responded that it was with the patient while 38% responded that treatment supporter kept it. Sixty-nine percent of the treatment supporters responded that they themselves filled treatment support card while it was observed that 79% of the treatment support cards were not properly filled.

Table 3. Performance of treatment supporters regarding the defaulter tracing mechanism

Variables	**n**	**(%)**
Working as treatment supporter		
< 1 year	34	23
1 – 5 years	109	74
> 5 years	04	03
Treatment supporter visit to patient home for giving anti-TB medicine		
Yes	132	88
No	18	12
Keeping of treatment support card		
With treatment supporter	57	38
With patient	80	53
Inside health facility	07	05
Don't know	05	03
No response	01	01
Do you fill treatment support card		
Yes	104	69
No	46	31
Treatment support card properly filled		
Yes	31	21
No	119	79
Cooperation of under treatment TB patients		
Yes	149	99
No	01	01
Cooperation of health facility staff		
Yes	147	98
No	03	02

Table 4 showed that 98% the facilitators and 99% of treatment supporters responded that they were not given any incentive to trace DOTS defaulters. Regarding measures that would be adopted to trace DOTS defaulters 56% of the facilitators and 98% of treatment supporters responded by visiting the patient home while among DOTS facilitators 24% didn't know any measure. The recommendations given by DOTS facilitators and treatment supporters

for tracing DOTS defaulters were mainly to visit the defaulter patient home (14% and 29% of facilitators and treatment supporters, respectively), and to provide/strengthen health education (04% and 33% of the facilitators and treatment supporters, respectively). 4% of the DOTS facilitators and less than 1% of the treatment supporters were of the opinion that they would write a letter to the patients who interrupted.

Table 4. Defaulter tracing mechanism practiced by DOTS facilitators and treatment supporters and their recommendations to improve it

Variables	DOTS Facilitators n (%)	Treatment supporters n (%)	Total n (%)
Incentives given to trace DOTS defaulters			
Yes	01 (02)	02 (01)	03 (1.5)
No	49 (98)	148 (99)	197 (98.5)
Measures that would be adopted to trace a defaulter patient given by NTP			
Visit patient home	28 (56)	147 (98)	175 (87.5)
Trough locality elders	02 (04)	01 (0.7)	03 (1.5)
Through LHW	04 (08)	01 (0.7)	05(2.5)
Through writing letter	02 (04)	01 (0.7)	03 (1.5)
Through health facility staff	02 (04)	00 (00)	02 (01)
Don't know	12 (24)	00 (00)	12 (06)
Recommendations given for tracing DOTS defaulters			
Visiting patient home	07 (14)	43 (29)	50 (25)
Inquiry from neighbors	01 (02)	04 (03)	05 (03)
Involving LHW	07 (14)	08 (05)	15 (08)
Patient must be of catchment area	01 (02)	00 (00)	01 (01)
Patient NIC	06 (12)	01 (01)	07 (04)
Through locality elders	05 (10)	04 (03)	09 (05)
Health education	02 (04)	50 (33)	52 (26)
Special staff to trace defaulters	05 (10)	04 (03)	09 (05)
Behavior/personal involvement of staff	05 (10)	10 (07)	15 (08)
Free test/ free medicine	03 (06)	05 (03)	08 (04)
Involving other health staff of facility	02 (04)	05 (04)	07 (04)
Responsible household member	01 (02)	01 (01)	02 (01)
Provision of transport	02 (04)	05 (03)	07 (04)
Incentives/credit to staff	02 (04)	01 (01)	03 (02)
Don't know	01 (02)	03 (02)	04 (02)
No response	00 (00)	06 (04)	06 (03)

A great majority of health centers i.e., 90% didn't have desk guide booklets present in health centers. About 34% of the facilitators responded that they were running OPD and maintaining medicine store along side DOTS work which pointed towards workload. Ninety-six percent of the DOTS facilitators responded that they themselves checked TB 01 cards and the same percentage of cards were properly filled. Twenty-six percent of the facilitators responded that they would declare a patient defaulter after he interrupted the treatment for more than two months.

Two focus group discussions were held one in Peshawar and the other in Mardan.

The main reasons for defaulting were that anti-tuberculosis medicines were stopped because of their side effects. No body from health facility approached them after they defaulted on treatment and there was lack of health education regarding the hazards of treatment interruption, the other reasons being financial constraints and lack of knowledge regarding tuberculosis treatment.

DISCUSSION

The study reported the sub-optimal adherence of heath staff in various health facilities of Khyber Pakhtunkhwa to DOTS defaulter tracing mechanism developed by National Tuberculosis Control Programme (NTP). Although National Tuberculosis Control Programme has developed guidelines for retrieval of absent patient and these guidelines are not elaborative, and needs updating and revision. Apart from developing comprehensive plan/guidelines how to trace DOTS defaulters other issues related to DOTS must be addressed. And these are training of all those involved in DOTS strategy. Refresher training for those who had already received DOTS training. Our study shows that a large number of treatment supporters (82%) did not receive training in DOTS strategy. This lack of training affects the performance of treatment supporters regarding supervision of treatment of TB patients and tracing of DOTS defaulters. It was evident from the comments of the defaulted patients in the Focus Group Discussion that nobody from the health facility contacted them

when they defaulted. So here lack of proper training can compromise the performance and that resulted in a poor relation between patients and health care facility staff.[11] Training in DOTS strategy should not be limited to those working in public sector but it should also include those working in private sector and treating TB patients. A study conducted in Pakistan showed that almost 98% of the private practitioners didn't take any action if a patient on anti-tuberculosis treatment didn't turn up i.e., defaulted on treatment.[12]

Knowledge of DOTS facilitators and treatment supporters was adequate regarding retrieving absent patient who was on anti-TB treatment and their responses were in conformity to NTP guidelines.

In our study, the results showed that more than 80% of the treatment supporters went to the patient home to give them anti-tuberculosis medicines and a study conducted in Iraq also showed that home visits by trained personnel improves patient compliance regarding DOTS.[13]

One of the significant recommendations given was that health education be imparted to TB patients to minimize their default. And studies conducted have shown that health education imparted to patients[14] and mothers have improved compliance with treatment among tuberculosis patients and children positive for tuberculin.[15] The second important recommendation given was visiting patient home who defaulted on treatment. The measures, which they would adopt to trace a defaulted patient were also of significance majority of the DOTS facilitators and treatment supporter would opt for visiting a defaulted patient home and simple measures such as reminder letters sent to patients who defaulted on treatment were efficacious, even among illiterate patients.[16]

If a comparison is made between DOTS Facilitators and treatment supporter regarding proper filling of TB cards it was observed that 96% of DOTS Facilitators properly filled TB 01 cards while 79% of treatment supporters failed to fill treatment supporter cards properly and this again pointed out that to the dire need of DOTS training to treatment supporters. And again it became evident that absence of training in DOTS strategy to Lady Health Workers (LHWs) resulted in lack of their skill and capacity development.

This is again emphasized that role of LHW is not only significant in tracing DOTS defaulters but also in their treatment, as a study conducted in Pakistan found that cure rate was high in that group of patients which were under the supervision of LHW versus those under supervision of health facility or under no ones supervision.[17]

It was of interest to note that a great majority of the health facilities did not have desk guide. The desk guide has guidelines on how to trace a defaulted patient although not in detail. And not having the desk guide showed poor adherence to DOTS strategy.

The comments that emerged from focus group discussion were that no body from health facility staff approached them when the patients defaulted, lack of health education from the health care provider side, financial constraints and not having the knowledge regarding benefits of treatment and on side effects of antituberculosis medicines These views were also expressed by defaulters from other tudies.[11,8,19,20] This emphasized that there was lack of coordination in DOTS defaulter tracing mechanism. There is no proper monitoring of patients under DOTS by treatment supporters.

The main recommendations that came out of the study were review and development of comprehensive guidelines for tracing the defaulted patients, training of LHWs in DOTS strategy, provision of desk guide to health facilities and health education to patients under DOTS. Proper coordination between LHWs and other health facility staff is essential.

One of the significant recommendations that were derived from the findings of this study LHWs are in dire need of training in DOTS strategy.

CONCLUSION

This study concludes that DOTS defaulter tracing mechanism implementation is sub optimal. Further technical support is needed in this area. The treatment supporters specially LHWs need training in DOTS strategy.

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