



## **KNOWLEDGE, ATTITUDES AND COMPLIANCE TOWARDS DIRECTLY OBSERVED TREATMENT SHORT COURSE AMONG PULMONARY TUBERCULOSIS PATIENTS ATTENDING THE CHEST CLINIC AT THE, DISTRICT GENERAL HOSPITAL IN, KALUTARA**

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### **INTRODUCTION**

Tuberculosis (TB) is a communicable disease that is considered to be a major cause of ill health, as well as one of the top 10 reasons and the leading cause of death from a single infectious agent (Global Tuberculosis Report, 2020). The WHO (2020) states that TB is caused by the bacillus *Mycobacterium tuberculosis*, which is spread when TB infected patients expel TB bacteria into the air by coughing. Usually, the disease typically affects the lungs (pulmonary TB). Directly Observed Therapy Short-course (DOTS) is one component of wider WHO strategies to prevent PTB. The strategies to control have considerably improved the quality of diagnosis and treatment outcomes globally, and the most important component of DOTS is to ensure that patient's adhere to treatment by giving every dose of medication under direct observation (Gopi et al., 2006). The core idea of DOTS is for treatment supervisors to watch patients while they swallow their medicine to re-emphasise its important to the patient, his/her family and the health-care worker. The main purpose of this study is to examine knowledge, attitudes and compliance towards Directly Observed Treatment Short-course (DOTS) among pulmonary TB patients who visit the chest clinic at the, District General Hospital in, Kalutara.

### **METHODOLOGY**

A quantitative descriptive cross-sectional design was conducted on a purposive sample of 105 pulmonary tuberculosis patients. A self-administered questionnaire was provided to PTB patients and voluntary participation was encouraged. The raw data was edited for completeness and clarity, while data from closed-ended questions were categorised and grouped. The study variables were coded, and the data was entered and analysed on Statistical Package for Social Scientists (SPSS) version 25.0.

### **RESULTS AND DISCUSSION**

The age of the respondents ranged from 15-83 years with the mean age of 48.41years (IQR 37.5-59.5). The majority of the female respondents (16 patients comprising 51.6% of the study group) were in the 31-45 years of age range whereas 27 (84.4%) of males were in the 46-60 years of age. Among the 105 PTB patients surveyed, the majority were male (68 patients comprising 64.8% of the sample). The majority of respondents were married (78, 74.3%) while 25.8% of respondents were either single, divorced or widowed. Secondary or higher level of education was attained by 75 (74.4%) of the sample. Half of the respondents (53, 50.5%) did not have a monthly income and the majority of those without an income (52.8%) were female. A considerable amount of the respondents (67.6%) had low income (<Rs.30,000.00 per month). The total number of respondents included those diagnosed as having smear positive pulmonary TB new cases (68, 64.8%), smear negative pulmonary TB new cases (9, 8.6%), re-treatment cases (10, 9.5%) and other cases (18, 17.1%).



**Table 1**  
*Baseline Characteristics of participants*

<b>Variables</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Gender		
Male	68	64.8
Female	37	35.2
Age (years)		
15 – 30	17	16.2
31 – 45	31	29.5
46 – 60	32	30.5
61 – 75	22	21.0
76 - 100	3	2.9
Marital status		
Single	21	20.0
Married	78	74.3
Widow	3	2.9
Divorced	3	2.9
Level of education		
No formal education	11	10.5
Up to Grade 5	10	9.5
Up to O/L	45	42.9
Up to A/L	30	28.6
Degree level	3	2.9
Any other	6	5.7
Employment status		
Yes	52	49.5
No	53	50.5
Monthly income (Rs.)		
<5000	15	14.3
5100 – 10000	8	7.6
11000 – 20000	18	17.1
21000 – 30000	30	28.6
31000 – 40000	20	19.0
41000 – 50000	4	3.8
>51000	10	9.5
Method of diagnosis		
Smear positive new cases	68	64.8
Smear negative new case	9	8.6
Re-treatment	10	9.5
Other	18	17.1

**Knowledge of participants on DOTS**

Patients’-knowledge was assessed by asking eight questions and applying a scoring system that was generated to assess the level of knowledge (Very good=76-100, Good=56-75, Moderate=40-55 and Poor=<39). The majority (63%) of patients had adequate knowledge about PTB and its treatment. Only 19% of patients had knowledge about PTB and DOTS in the age group 46-60 years. In addition, of those patients who had education up to O/L and beyond, 52.3% had adequate knowledge about the disease and treatment.



**Table 2**  
*Knowledge on DOTS among participants*

Variable	Knowledge			
	Very Good (N%)	Good (N%)	Moderate (N%)	Poor (N%)
Age (years)				
15 – 30	8.6	4.8	1.0	1.9
31 – 45	6.7	11.4	4.8	6.7
46 – 60	5.7	13.3	3.8	7.6
61 – 75	3.8	6.7	2.9	7.6
76 - 100	0.0	1.0	1.0	1.0
Gender				
Female	12.4	11.4	3.8	7.6
Male	12.4	25.7	9.5	17.1
Level of education				
No formal education	2.9	1.9	1.0	4.8
Up to Grade 5	1.0	3.8	3.8	1.0
Up to O/L	9.5	13.3	5.7	14.3
Up to A/L	7.6	17.1	1.0	2.9
Degree level	1.9	0.0	0.0	1.0
Any other	1.9	1.0	1.9	1.0
Employment status				
Yes	14.3	17.1	6.7	11.4
No	10.5	20.0	6.7	13.3

**Attitude of participants towards DOTS**

This study indicates that 47.6% of patients had felt ashamed and isolated when they were diagnosed with TB while only 23.8% disagreed with having had such feelings. The majority of the respondents (74.3%) expressed fear that their family members would become infected with the disease whereas 60% of patients had been aware that TB is a curable disease at the time of their diagnosis while the rest disagreed with this or had no idea about it (Table 3).

**Table 3**  
*Attitudes of the study participants on PTB*

Statement	Agree	Disagree	No idea
Shamed and isolated	47.6%	23.8%	28.6%
Fear that my family will get PTB	74.3%	11.5%	14.3%
Sad for myself and cried	52.4%	26.6%	21%
Without worries because I know that TB is treatable & curable	60.0%	12.4%	27.6%

This study found that 82.8% of patients were willing to undergo DOTS even though they did not show symptoms. More than half of patients (53.3%) relied on relatives' support to remind them of follow up treatment. A similar percentage of participants (53.3%) were keen to take advice before traveling a long journey away from home during the treatment period. Moreover, 62% of respondents reported side effects of drugs to DOT providers (Table 4).



**Table 4**  
*Attitudes towards DOTS among participants*

Statement	Agree	Disagree	No idea
To continue the treatment despite not having symptoms	82.8%	6.7%	10.5%
To rely on relatives support to remind of follow up treatment	53.3%	14.3%	32.4%
Receive advice before traveling for long periods for treatment	53.3%	5.7%	41.0%
To report medication side effects to the DOTS provider	62.8%	6.7%	30.5%
Anyhow complete the treatment course	83.8%	2.9%	13.3%

**Compliance of participants towards DOTS**

The higher number of respondents (68.6%) had received their treatment under the supervision of either a health care worker or family member while 31.4% of participants had received treatment alone without any supervision except on the first day of the treatment course. The most common cause for interruption of treatment (43.8%) is feeling better (Table 5).

**Table 5**  
*Compliance of participants towards DOTS*

Statement	Frequency	Percentage (%)
<b>01. How do you take your DOTS treatment?</b>		
Supervised by health-care worker at the chest clinic	48	45.7
Supervised by my relative at home	11	10.5
Supervised by an extensional health worker at my home	13	12.4
Takes at home alone, unsupervised by anyone	33	31.4
<b>02. How did you manage the side effects of the drugs?</b>		
Continue the treatment despite the side effects	20	19.0
Side effects disappeared without intervention	06	5.7
Reported side effect to the health-care worker and followed instructions	69	65.7
Stopped taking the prescribed medicines	04	3.8
Take the medicines at convenient time	06	5.7
<b>03. Have you ever wanted to stop treatment?</b>		
Yes	07	6.7
No	98	93.3
<b>04. Have you ever defaulted treatment?</b>		
Yes	10	9.5
No	95	90.5
<b>05. Reasons (if any) for treatment interruption?</b>		
Feeling better	46	43.8
Forgets to take the medicines	15	14.3
Could not afford the travel cost	04	3.8
Not enough support from family members	02	1.9
Unbearable side effects of drugs	16	15.2
Did not know the consequences of treatment interruption	14	13.3
Nobody emphasised to me the importance of regular treatment	08	7.6
<b>06. Why do you regularly visit the clinic to receive treatment?</b>		
It is important to be cured of the disease	84	80.0
Due to feeling unhealthy	01	1.0
Encouragement of family members	09	8.6
Encouragement of health care workers	11	10.5



The findings of the present study shows that the level of knowledge about DOTS was moderate to poor. This finding is strongly supported by studies conducted in Zambia on the knowledge about TB treatment, which showed that 49% had an average level of knowledge about TB while 17% demonstrated a high level of knowledge (Mweemba et al., 2008). Christopher et al. (2010) stated that being diagnosed with TB can create the fear of isolation and discrimination. These finding re-emphasised the importance of adhering to the DOT policy to improve the uninterrupted treatment programme.

### CONCLUSIONS/RECOMMENDATIONS

The majority of respondents had adequate knowledge of DOTS whereas still a quarter of them had poor knowledge across all age groups. A considerable number of respondents had negative attitudes towards PTB and DOTS. Health education programmes and community awareness programmes should be conducted to eradicate such negative attitudes among patients as well as from society. This study indicated that, the compliance of the respondents towards DOTS is high. It also revealed an important aspect that while knowledge is not a direct determinant of compliance, attitudes largely effected compliance with DOTS. Therefore, it is vital to find ways of improving patients' and individuals' attitudes to improve compliance. Community-based TB treatment under direct observed therapy has been the only effective way to reduce transmission and development of drug resistant tuberculosis up to now. Therefore, by identifying patients who are likely to default, health education could be efficiently directed to maximise patients' compliance.

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