

Research Article

Health-care Practices of Patients Registered at Selected Directly Observed Treatment, Short-Course Centers in U.T. Chandigarh: An Exploratory Study

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ABSTRACT

Aim: The study was carried out to explore the health-care practices of patients registered at selected directly observed treatment, short-course (DOTS) centers in U.T. Chandigarh. **Materials and Methods:** An exploratory study was conducted on 58 patients suffering from pulmonary tuberculosis registered at three selected DOTS centers in U.T. Chandigarh. Information related to socio-demographic profile and health-care practices was gathered using an interview schedule and observation checklist. The data were analyzed with the help of SPSS. **Results:** All the patients were aware of covering their mouth while coughing, talking, and sneezing but only 72.4% were practicing it. Less than two-third of patients (72.4%) was disposing their sputum directly in flush. None of the patients used a disinfectant for the disposal of sputum, 80% of the patients received dietary information from health-care staff. Most of the subjects (98.3%) were adherent to the DOTS treatment regimen and knew that DOTS is beneficial. The patients were receiving information regarding treatment compliance and diet from the health-care staff. **Conclusion:** The study concluded that maximum patients were practicing cough hygiene but in some aspects such as sputum disposal and dietary habits, knowledge of the patients should be improved for better health-care practices.

Keywords: Directly observed treatment, short-course, Health-care, Practices

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Introduction

Tuberculosis (TB) remains a worldwide public health problem. It is estimated that only 5–10% of the total TB

infected cases will develop clinical disease during their lifetime. In high burden countries, the annual risk for TB infection is estimated to be 0.5–32%. Globally, it is estimated that about 10% multidrug resistance TB cases have extensively drug resistant TB.^[1]

According to the WHO factsheet updated on October 2020, TB is one of the greatest killer globally which is caused by a single infectious agent (second only to HIV/AIDS). Low- and middle-income countries account for more than 95% of TB deaths.^[2] Acquired drug resistance remains high in many developing countries, particularly in Asia. To control TB, directly observed treatment short course (DOTS) remains central to the public health approach.^[3]

Burden of TB is highest in India, accounting for more than 25% of the world's incidence cases.^[4] Lot of awareness has been created about TB under Revised National TB Control

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Programme. Studies related to awareness of TB and treatment seeking behavior have been done in various part of India.^[5] Although TB is a curable and preventable disease, still, it is global health problem because lack of awareness among the people regarding its infectivity and health-care practices making it difficult to control it malnutrition is also a predisposing factor for TB. There are social factors which contribute in acquiring TB such as poor quality of life and poor housing.^[6]

The data from the previous studies showed that despite having knowledge regarding the disease, people still lack awareness of health-care practices that should be followed to prevent its transmission.^[6-10]

Materials and Methods

The study was conducted on patients suffering from TB who were registered at selected DOTS centers (PGIMER, Dhanas and DMC) in U.T. Chandigarh.

Study design

The study design was exploratory in nature. Ethical approval from Institute Ethics Committee was taken. Permission from state TB Officer was also taken for conduction of the study. Written informed consent was taken from individual patients.

Inclusion criteria

Study included those patients who were suffering from pulmonary TB and were willing to participate in the study while attending DOTS centers in U.T. Chandigarh were included in the study.

Exclusion criteria

Study excluded those patients who were suffering from extra pulmonary TB were excluded from the study.

Study design

This was an exploratory study. Total enumeration technique was used to select the patients. Interview schedule and observation checklist were designed to collect data from patients. Interview schedule consisted of three sections: Section A was socio-demographic background, Section B included health history of the patient, and Section C comprised semi-structured questionnaire.

Statistical analysis

Data were analyzed using descriptive statistical methods, including percentage, mean, and median. The findings were interpreted and presented in the form of tables.

Results

Table 1 depicts that out of 58 subjects, 41% of the subjects were in the age group of 15–30 years. Among them, 55.2% of the subjects were males and 44.8% were females. Majority of the subjects (87.9%) were Hindus, 69% of the subjects were married, and 53.4% of the subjects belonged to nuclear families. Majority of the subjects (81.0%) were living with their families. Most of the subjects (63.8%) had 7–12 members in their families.

Table 2 reveals that out of 58 subjects, 89.7% of the subjects were residing in their own houses and all of the subjects had Pucca houses. Majority of the subjects (84.5%) had 1–6 rooms. Majority of the subjects (91.4%) had separate kitchens in their houses.

Table 3 depicts that 8.6% of the subjects were illiterate, 36.2% had done post high school diploma. More than one-fourth of the subjects (32.8%) were unemployed.

Table 4 reveals that 55.2% of the subjects were non vegetarians and 43.1% were vegetarians. Based on body mass index (BMI), 62.0% of the subjects were underweight. About 81% of the subjects had no addictions, 12% of the

Table 1: Socio-demographic profile of the subjects (N=58)

Variables	n (%)
Age (years)	
Mean±SD=37.94±14.89 Range=18–72	
15–30	24 (41.4)
31–45	16 (27.6)
46–60	12 (20.7)
61–75	06(10.3)
Sex	
Male	32 (55.2)
Female	26 (44.8)
Religion	
Hindu	51 (87.9)
Muslim	02 (03.4)
Sikh	05 (08.6)
Marital status	
Married	40 (69.0)
Unmarried	16 (27.6)
Widow/widower	02 (03.4)
Family	
Nuclear	31 (53.4)
Joint	26 (44.8)
Extended	01 (01.7)
Number of family members	
Mean±SD=5.75±2.19 Range=2–12	
1–6	21 (36.2)
7–12	37 (63.8)
Number of children in family	
Mean±SD=2.35±1.05 Range=1–5	
0–2	35 (60.3)
3–5	02 (03.4)
Presently	
Living with family	47(81.0)
Living alone	11(19.0)

Table 2: Habitat profile of the subjects (N=58)

Variables	n (%)
House	
Own	52 (89.7)
Rented	06 (10.3)
Type of house	
Pucca	58 (100.0)
Number of rooms	
Mean±SD=3.10±2.13 Range=1–12	
1–6	49 (84.5)
7–12	09 (15.5)
Separate kitchen	
Yes	53 (91.4)
No	05 (08.6)
Ventilation	
Adequate	48 (82.8)
Inadequate	10 (17.2)
Water supply	
Tap	58 (100.0)
Latrine	
Flush	58 (100.0)
Electricity	
Yes	58 (100.0)
Drainage	
Open	01 (01.7)
Closed	57 (98.3)

subjects were smokers, 5% of the subjects were alcoholics, and only 2% subjects were tobacco chewers.

Table 5 depicts that majority of the subjects (94.8%) had no significant contact history. About 69.0% of the subjects had 1–4 months duration of illness. About 75.9% of the subjects were taking treatment from <1 to 4 months. DOTS category 1 was received by 79.3% of the subjects and category 2 were received by 20.7% of the subjects. Diabetes as comorbidity was found in only 12.1% of the subjects.

Table 6 depicts that out of 58 subjects, 75.8% did not experience any side effects associated with DOTS. Out of 14 subjects, 24.1% subjects experienced some side effects out of which nausea and dizziness was experienced by all the subjects.

Table 7 shows that all the subjects were routinely visiting DOTS center and had undergone routine sputum examination. Majority of the subjects (98.3%) did not skip medications. Majority of the subjects (98.3%) considered that DOTS is beneficial and its reason for more than half of them (58.6%) was full recovery ensured by DOTS. About 96.6% subjects told that they will not quit taking medications on relief from symptoms.

Table 8 depicts that all the subjects covered their mouth while coughing, sneezing, and talking. More than half of the subjects (56.9%) washed their hands after coughing and sneezing. Out of total subjects, 51.7% of the subjects covered their mouth using a clean cloth, 34.5% of the subjects used handkerchief, and 13.8% of the subjects used a mask. Less than half of the subjects (48.3%) washed and dried their cloth

Table 3: Socio-economic variables of the subjects (N=58)

Variables	n (%)
Education	
Illiterate	05 (08.6)
Primary school certificate	08 (13.8)
Middle school certificate	08 (13.8)
High school certificate	10 (17.2)
Intermediate or post high school diploma	21 (36.2)
Graduate or postgraduate	06 (10.3)
Occupation	
Unemployed	19 (32.8)
Unskilled worker	05 (08.6)
Semiskilled worker	04 (06.9)
Skilled worker	10 (17.2)
Clerical/shop owner/farmer	01 (01.7)
Semi-professional	02 (03.4)
Professional	03 (05.2)
House wife (n=26)	14 (53.8)
Per capita income	
Mean±SD=2563.4±1622.9 Range=800–7500	
<1000	06 (10.3)
1001–2000	23 (39.7)
2001–3000	16 (27.6)
3001–5000	07 (12.0)
>5000	08 (13.6)
Family status	
Upper lower	07 (12.1)
Lower middle	47 (81.0)
Upper middle	04 (06.9)

Table 4: Dietary, biophysical profile, and Substance Abuse among the subjects (N=58)

Variables	n (%)
Dietary habits	
Vegetarian	25 (43.1)
Non-vegetarian	32 (55.2)
Eggetarian	01 (01.7)
BMI (kg/m ²)	
<18.5 (underweight)	36 (62.0)
18.5–24.9 (normal)	15 (26.0)
25–29.9 (overweight)	06 (10.3)
>30 (obese)	01 (01.7)
Substance Abuse	
Smoking	07 (12.1)
Alcohol	03 (5.2)
Tobacco chewing	01 (1.7)
No addiction	47 (81.0)

BMI: Body mass index

or handkerchief separately, 34.5% of the subjects washed them with other cloths and 17.2% of the subjects threw them away after use. About 72.4% of the subjects disposed their sputum directly in flush. Table 9 depicts that sputum was disposed in open places by 27.6% of the subjects. None of the subjects disinfected the sputum before its disposal.

Table 10 depicts that 66.5% of the subjects had a separate room in their houses. Adequate ventilation in the room was

Table 5: Contact history, course of illness, and treatment among the subjects (N=58)

Variables	n (%)
Contact history	
Nothing significant	55 (94.8)
Significant	03 (05.2)
Duration of illness	
1-4 months	40 (69.0)
4-8 months	18 (31.0)
Duration of treatment	
<1-4	44 (75.9)
5-8	14 (24.1)
Category of DOTS	
Cat1	46 (79.3)
Cat2	12 (20.7)
Phase of DOTS	
Intensive	30 (51.7)
Continuation	28 (48.3)
Comorbidities	
Diabetes	07 (12.1)
None	51 (87.9)

DOTS: Directly observed treatment short course

Table 6: DOTS associated side effects among the subjects (N=58)

Variables	n (%)
Side effects	
No	44 (75.8)
Yes	14 (24.1)
If yes, then n=14	
Nausea	14 (100.0)
Vomiting	02 (14.28)
Anorexia	10 (71.42)
Dizziness	14 (100.0)

DOTS: Directly observed treatment short course

Table 7: Treatment compliance among the subjects (N=58)

Variables	n (%)
Follow up to DOTS center	58 (100.0)
Routine sputum examination	58 (100.0)
Skip medication in between	
Yes	01 (01.7)
No	57 (98.3)
DOTS is beneficial	
Yes	57 (98.3)
Reason:	
Ensure full recovery	34 (58.6)
Feeling better after starting treatment	23 (39.7)
DOTS is not beneficial (reason):	
Not sure of full recovery	01 (01.7)
Quit medication on relief from symptoms	
Yes	02 (03.4)
No	56 (96.6)

DOTS: Directly observed treatment short course

reported by 55.2% of the subjects. Most of the subjects (84.5%) covered their mouth in crowded places.

Table 8: Cough hygiene practices among subjects (N=58)

Variables	n (%)
Covers mouth while coughing, sneezing and talking	58 (100.0)
Wash hands after coughing and sneezing	33 (56.9)
Covers mouth using:	
Clean cloth	30 (51.7)
Handkerchief	20 (34.5)
Mask	08 (13.8)
Handling of cloth/ handkerchief /mask	
Wash and dry separately	28 (48.3)
Wash with other clothes	20 (34.5)
Throw away	10 (17.2)

Table 9: Sputum disposal practices among the subjects (N=58)

Variables	n (%)
Disposal of sputum:	
Open places	16 (27.6)
Flush	42 (72.4)
Use of disinfectant	—

Table 10: Airborne precautions among the subjects (N=58)

Variables	n (%)
Separate room:	
Yes	38 (66.5)
No	20 (34.5)
Room (adequate ventilation)	
Yes	32 (55.2)
No	26 (44.8)
Covers mouth in crowded places	
Yes	49 (84.5)
No	09 (15.5)

Table 11: Dietary information from health-care staff to the subjects (N=58)

Variables	n (%)
Received dietary information:	
Yes	47 (80.0)
No	11 (19.0)
Type of food to be taken:	
High protein diet	40 (69.0)
More fruits and vegetables	04 (06.9)
Less spicy food	02 (03.4)
No information	12 (20.7)
Liquids:	
Juices	24 (41.4)
No information	34 (58.6)

Table 11 shows that out of 58 subjects, 80.0% of the subjects received dietary information from the health-care staff. Information pertaining to high protein diet was received by 69.0% of the subjects from the health-care staff. More than half of the subjects (58.6%) did not receive information regarding increasing the intake of liquids.

Table 12 depicts that out of 58 patients, 72.4% patients were actually covering their mouth while coughing, sneezing, and

Table 12: Health-care practices as observed among the subjects (N=58)

Variables	n (%)
Covers mouth while coughing, sneezing, and talking	42 (72.4)
Did not cover mouth while coughing, sneezing, and talking	16 (27.6)
Covers mouth using:	
Clean cloth	22 (37.9)
Mask	05 (08.7)
Handkerchief	15 (25.9)
Personal hygiene	
Maintained	56 (96.6)
Not maintained	02 (03.4)

talking. Out of these subjects, 37.9% of the subjects were using a cloth to cover their mouth. Majority of the subjects (96.6%) had maintained their personal hygiene.

Discussion

The present study was conducted on the patients suffering from pulmonary TB registered at selected DOTS centers. This study was conducted to explore the health-care practices of the patients.

The present study revealed that out of 58 subjects, 52 (89.6%) subjects were in the age group of 15–60 years. Males composed of 55.2% of the total sample. These findings are consistent with the study conducted by Shukla (2013).^[8] which revealed that 79% were in the age group of 16–55 years and 62% of the total sample was males.

In the present study, 91.4% subjects were literate, 8.6% subjects were illiterate, 43.1% subjects were employed, and 56.9% subjects were unemployed. These findings are supported by the study conducted by Aras (2013),^[7] as the result showed that 22.9% subjects were illiterate and 77.1% were literate, 69.6% were employed, and 30.4% were unemployed.

The findings of the present study showed that 19% of the subjects were substance users and out of them, 12% were smokers, 5% were alcoholics, and 2% were tobacco chewers. These findings are supported by a manuscript published by Deiss *et al.* (2011).^[11] on TB and drug use. The results revealed that drug use confers additional risk for TB.

Another finding in the present study revealed that 12.1% of the subjects were diabetic. This finding is consistent with the study conducted by Raghuraman *et al.* (2011)^[12] which revealed that 29% subjects were diabetic.

In the present study, 24.1% of the subjects reported occurrence of adverse drug reactions (ADRs). This finding is supported by the study conducted by Chhetri *et al.* (2005)^[13] as it revealed that 54.7% of the subjects reported occurrence of ADRs.

As revealed by the present study, all the subjects were adherent to their treatment schedules. The findings of the study conducted by Krona *et al.* (2004)^[14] revealed that 39.8% of the subjects did not adhere to their treatment schedules.

A study conducted by Chinnakali *et al.* (2013)^[6] revealed that 51% subjects were aware that a handkerchief or a towel

should be used while coughing. In the present study, all the subjects were aware that mouth should be covered while coughing, sneezing, and talking.

The findings of the current study showed that 72.4% subjects disposed their sputum directly in flush. A study conducted by Shukla *et al.* (2013)^[8] revealed that 49% of the subjects were following safe sputum disposal methods.

A study conducted by Bulage *et al.* (2014)^[15] showed that the subjects were not receiving adequate information about TB from healthcare workers. In the present study, 80% of the subjects received dietary information from health-care staff.

The findings of the present study would be useful for health-care staff to help the patients suffering from pulmonary TB in terms of health-care practices.

Conclusion

Almost all the patients were compliant to drug therapy and were regularly visiting the DOTS center as per the fixed schedule. The subjects also reported that they consider DOTS therapy as beneficial for them. The study concluded that maximum patients were practicing cough hygiene but in some aspects such as sputum disposal and dietary habits, knowledge of the patients should be improved for better health-care practices.

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