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A Study to Assess the Knowledge and Attitude regarding Anti-tuberculosis Treatment (ATT) among Tuberculosis Patients Visiting Selected Hospital of Ludhiana, Punjab

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Abstract:
TB is one of the most significant cause of worldwide health hazards which leads to mortality and morbidity. One of the major problems of treating tuberculosis treatment is that the patients who are once being successfully treated can relapse and major reason behind this is insufficient treatment. Adherence towards TB treatment is challenging because the treatment is long and side-effects are quite evident and sometimes patients show non-compliance due to poor knowledge and unfavourable attitude. A quantitative research approach & non experimental descriptive research design was used to assess knowledge and attitude regarding anti-tuberculosis treatment (ATT) among tuberculosis patients. It was conducted on 100 tuberculosis patients selected through purposive sampling at DOTS centre of DMC & Hospital, Ludhiana. The data was collected using structured questionnaire to assess knowledge and structured likert scale to assess attitude regarding ATT. For analysis and interpretation of data, descriptive and inferential statistics were used. Majority (66%) of the tuberculosis patients had average level of knowledge regarding ATT whereas 31% were with good level and only 3% were with poor knowledge level. Majority of the tuberculosis patients (78%) had favourable attitude and 22% had unfavourable attitude regarding ATT. There is a positive correlation between knowledge and attitude regarding ATT among tuberculosis patients (r=0.46;p=0.05). Association of knowledge was found statistically significant with marital status (p=0.037). Statistically significant association of attitude was found with family history of tuberculosis (p=0.050) and counselling attended regarding ATT (p=0.045). The present study concluded that most of the tuberculosis were having average level of knowledge and favourable attitude regarding ATT. There was a significant positive correlation between knowledge and attitude which indicates increase in the knowledge regarding ATT improves the attitude related to that.

Keywords: Knowledge, Attitude, Anti-tuberculosis Treatment (ATT), Tuberculosis patients.

INTRODUCTION:

TB is one of the most significant cause of worldwide health hazards which leads to mortality and morbidity. One among the three persons across the globe depicting 2-3 billion people are known to be infected with Mycobacterium Tuberculosis, out of which 5-15% have probability to develop active TB

disease during their life. Over the past 10 years, major progression has been made for tackling TB with most of the TB targets set as part of the Millennium Development Goals having been fulfilled[1]. Tuberculosis being the global challenge needs more improved tools to tackle TB globally. According to the global TB report of 2020, India holds about one-quarter of world's TB burden[2]. Although considerable advances in compulsory notification of all TB cases is done, still India needs to collaborate national health programmes with general health services, and perform national drug resistance surveillance and many other achievements to decrease the cases of TB. Research is the basis for medical breakthroughs. Hence, it is imperative to strengthen research based on newer drugs, fixed drug combinations and newer regimes[3]. An inevitable factor of high-quality tuberculosis care is the start of anti-tuberculosis treatment based on results of WHO approved microbiological diagnostics. Microbiological investigation of TB is important because it allows patients to be diagnosed correctly, is important[4]. A large number of patients are not fully treated for TB, even in areas where free medication are available. Inadequate treatment leads to prolonged period of infection, drug resistance, increased mortality and morbidity. Immediate initiation and compliance to national TB treatment standards are necessary for effective therapy[5].

MATERIAL AND METHODS:

A descriptive research design was adopted to conduct the study in DOTS centre of DMC & Hospital, Ludhiana, Punjab on 100 tuberculosis patients who visited DOTS centre from 26th February, 2024 to 16th March, 2024. Study was conducted on tuberculosis patients receiving ATT using purposive sampling technique. Tuberculosis patients who were receiving ATT from at least 2 months and aged 18 years and above were included in the study excluding the patients who were not willing to participate in the study. Permission was taken from the institutional ethics committee of DMC & Hospital to conduct the study. Criteria for selecting the setting was availability of subjects, feasibility of conducting the study, familiarity of the investigator with the setting, expected cooperation and administration approval for conducting the study. Data was obtained regarding socio-demographic profile, clinical profile, knowledge and attitude regarding ATT. A structured questionnaire was used to assess the knowledge regarding ATT among tuberculosis patients receiving ATT. It consists of 20 questions which includes general questions (1-7), period of treatment (8-11), side-effects and complications (12-16), precautions (17-20) related to tuberculosis and ATT. Structured likert scale was used to assess attitude regarding ATT among tuberculosis patients, with 20 statements. There were 9 positive statements and 11 negative statements. The responses of patients were noted down by the investigator using structured interview method. The collected data was coded in excel sheet and analyzed according to the objectives of the study. Descriptive and inferential statistics was used with the level of significance 0.05.

RESULTS:

Table 1a: Frequency and percentage distribution of tuberculosis patients as per the socio-demographic variables

N=100

Socio-demographic variables	*f* (%)
Age (in years)*	
18-27	28
28-37	18

38-47	16
48-57	21
≥58	17
Gender	
Male	55
Female	45
Marital status	
Married	69
Un-married	25
Divorce/separated	03
Widow/widower	03
Religion	
Sikh	16
Hindu	80
Others	04
Habitat	
Rural	06
Urban	94

** Mean age (in years) ±S.D=41.1±17.18*

Table 1a depicts that highest percentage (28%) of tuberculosis patients were in the age group of 18-27 years. More than half (55%) of the tuberculosis patients were male. Majority of the tuberculosis patients (69%) were married. Majority of the patients were Hindu (80%). Majority of the subjects (94%) were residing in urban area.

Table 1b: Frequency and percentage distribution of tuberculosis patients as per the socio-demographic variables
N=100

Socio-demographic variables	***f* (%)**
Dietary pattern	
Vegetarian	51
Non-vegetarian	40
Eggetarian	09
Living status	
With family	96
Alone	04
Type of family	
Joint	38
Nuclear	62
Educational status	
Illiterate	24
Primary	45
Secondary	21

Graduation or above	10
Working status	
Working	40
Not working	60
Occupation (n=40)	
Professional	07 (17.5)
Skilled	11 (27.5)
Business	05 (12.5)
Labour	16 (40.0)
Agriculture	01 (02.5)
Socio-economic status (According to Kuppuswamy socio economy scale 2023)	
Upper middle	5
Lower middle	50
Upper lower class	40
Lower class	5

Table 1b shows that more than half of the subjects (51%) were vegetarian. Majority of the subjects (96%) were living with their family. Most of the patients (62%) belong to nuclear families. As per educational status maximum number of subjects (45%) were educated up to primary. As per working status, 60% patients were not working. Half of the patients (50%) belong to lower middle class family,

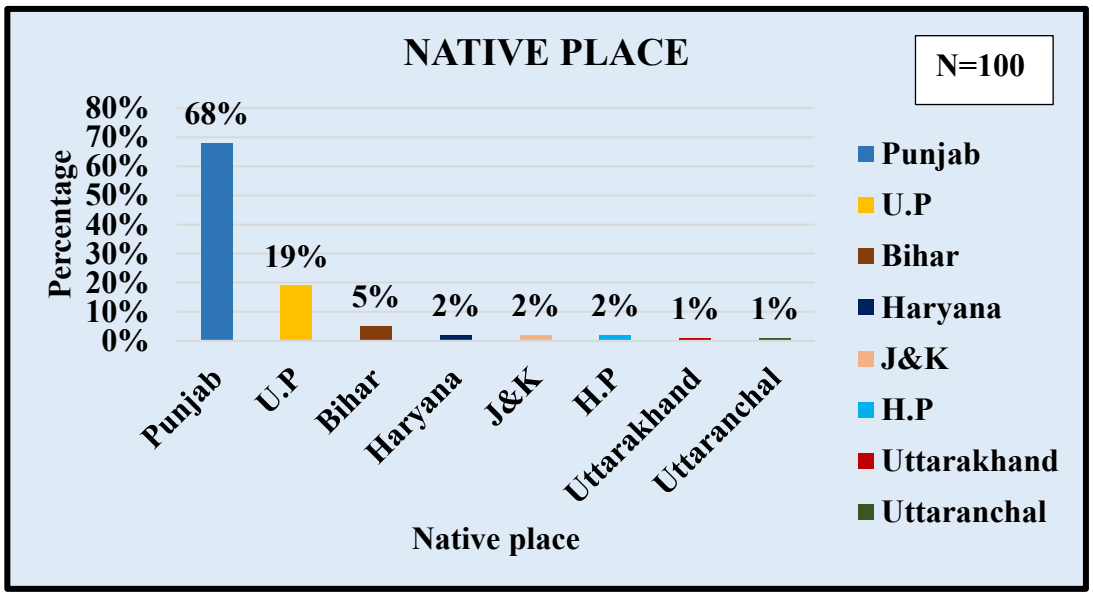

Figure 1: Percentage distribution of tuberculosis patients as per native place

Figure 1 illustrates that 68% patients belong to Punjab and remaining 32% belong to other states.

Table 2 : Frequency and percentage distribution of tuberculosis patients as per their clinical profile
N=100

Clinical Profile	*f* (%)
Disease Category	
Pulmonary	72
Extra-pulmonary	28
Extra-pulmonary T.B (n=28)	
Tuberculosis lymphadenitis	05 (17.9)
Pott's spine	04 (14.3)
Tuberculous meningitis	02 (07.1)
Pleural tuberculosis	10 (35.7)
Abdominal tuberculosis	07 (25.0)
Duration of illness (months)	
2-3	41
3-4	15
4-5	07
5-6	24
≥6	13
Duration of ATT (months)	
2-3*	45
3-4	12
4-5	09
5-6	30
≥6	04
Any co-morbidity	
Yes	33
No	67
Comorbid diseases (n=33)#	
Diabetes Mellitus	22 (66.6)
Hypertension	09 (27.2)
Hypo-tension	1 (3.0)
COPD	1 (3.0)
CKD	1 (3.0)
Arthritis	1 (3.0)
CAD	2 (6.0)
Epilepsy	1 (3.0)
Counselling regarding ATT	
Yes	54
No	46
Counselling done by(n=54)	
Asha worker	47 (87.0)
Doctor	05 (09.3)

Nurse	02 (03.7)
Treatment category	
New case	82
Previously treated case	18

#Multiple responses

** Due to delay in starting ATT*

Table 2 depicts the distribution of tuberculosis patients as per their clinical profile.

Maximum patients (72%) were with pulmonary tuberculosis and the remaining 28% were with extra-pulmonary tuberculosis. As per the duration of illness, 41% were having illness from last 2 to 3 months. As per the duration of ATT, most of the patients (45%) were on treatment from last 2 to 3 months. As per the co-morbidity, two-third of the patients (67%) were not having any co-morbidity. Among the 100 tuberculosis patients, more than half of the patients (54%) had attended counselling regarding ATT. Among the 54 patients, 47(87%) patients were given counselling by ASHA workers. 82% patients were new cases taking ATT.

Table 3: Frequency and percentage distribution of tuberculosis patients as per level of knowledge regarding ATT

N=100

Sr. No.	Level of knowledge	Score Range	*f* (%)	Mean±S.D	Mean (%)
1.	Good	14-20	31	15.12±1.25	75.6%
2.	Average	07-13	66	11.27±1.75	56.3%
3.	Poor	00-06	03	5.00±1.00	25.0%

Overall Mean score =12.28± 2.70

Minimum score=00

Maximum score=20

Table 3 exhibits two-third (66%) of the patients had average level of knowledge with mean score of 11.27±1.75, 31% had good knowledge with mean score of 15.12±1.25, and only 3% had poor knowledge regarding ATT with mean score of 5.00±1.00. The overall mean knowledge score regarding ATT was found to be 12.28±2.70 among tuberculosis patients.

So, it can be concluded that majority of tuberculosis patients had average knowledge regarding ATT.

Table 4: Frequency and percentage distribution of tuberculosis patients as per their attitude regarding ATT

N=100

Sr. No.	Attitude	Score Range	*f* (%)	Mean±S.D	Mean (%)
1.	Favourable	41-60	78	46.50±3.55	77.5%
2.	Unfavourable	20-40	22	34.13±4.84	56.8%

Overall mean score=43.78±6.42

Minimum score=20

Maximum score=60

Table 4 shows majority of the tuberculosis patients (78%) had favourable attitude regarding ATT with mean attitude score of 46.50±3.55 and 22 % patients had unfavourable attitude with mean attitude score of 34.13±4.84. The overall mean attitude score was found to be 45.00±6.42 among tuberculosis patients. So, it can be concluded that majority of tuberculosis patients had favourable attitude towards ATT.

Table 5: Relationship between knowledge and attitude regarding ATT among tuberculosis patients

N=100

VARIABLES	MEAN±S.D	MEAN%	r value
Knowledge	12.28± 2.70	61.4%	r=0.46
Attitude	43.78± 6.42	72.9%	p=0.05*

** Significant p≤0.05*

Knowledge: *Minimum score: 00*

: Maximum score: 20

Attitude: *Minimum score: 20*

Maximum score: 60

Table 5 represents the mean knowledge score regarding ATT among tuberculosis patients was 12.28± 2.70 (61.4%) and mean attitude score was 43.78± 6.42 (72.9%). There was a positive correlation found between knowledge and attitude regarding ATT among the patients (r=0.46; p=0.05). It shows that the attitude regarding ATT depends on the knowledge.

Association of knowledge regarding ATT among tuberculosis patients with their socio-demographic variables

Knowledge regarding ATT among tuberculosis patients is associated with their marital status (p=0.037). And no association was found with any other socio-demographic variables (i.e. age, gender, dietary pattern, living status, working status, educational status, religion, habitat, native place, socio-economic status.

Association of attitude regarding ATT with the clinical profile of tuberculosis patients

There was significant association of attitude regarding ATT among tuberculosis patients with family history of tuberculosis and counselling received or attended regarding ATT (p≤0.05).

DISCUSSION:

The present study reveals that among 100 tuberculosis patients, majority (66%) had average level of knowledge (11.27±1.75;56.3%) regarding ATT whereas 31% were with good level (15.12±1.25;75.6%) and only 3% were with poor knowledge level (5.00±1.00;25%). Moreover, knowledge regarding precautions (73.5%) and general aspects (61.5%) of ATT was higher among them as compared to side-effects and complications (58%) and period of treatment (53.2%). Majority of the tuberculosis patients (78%) had favourable attitude (46.50±3.55;77.5%) and 22% had unfavourable attitude (34.13±4.84;56.8%) regarding ATT.

Similar findings were found in a study conducted by **Amare W, Sinaga TM, Dessie G, Malik T (2022)** to assess knowledge, attitude and practices of tuberculosis patients towards DOTS regimen in Ethiopia.

Findings showed that almost one-third (31.3%) of the patients had low level of knowledge and 68.7% had high level of knowledge regarding DOTS. On the other hand, 49 (32.7%) patients had low level of attitude and 101 (68.7%) patients had high level of attitude.

Relationship between knowledge and attitude regarding ATT among tuberculosis patients:

In the present study, a positive correlation (r=0.46) between knowledge and attitude regarding ATT was found among tuberculosis patients (p=0.05). Hence, higher the knowledge, more will be the attitude regarding ATT.

A similar study was conducted by **Kalane N (2020)** on knowledge and attitude regarding DOTS therapy among 30 DOTS providers. Results show that there was significant correlation between knowledge and attitude among DOTS providers regarding DOTS therapy (p=0.017).

Association of knowledge and attitude regarding ATT among tuberculosis patients with their selected socio-demographic variables:

In the present study, there was a significant association of knowledge regarding ATT with marital status of tuberculosis patients found (p=0.037). There was no association of attitude regarding ATT with socio-demographic variables was found (p>0.05).

A similar study conducted by **Halemani K, Tiwari N, Mall PK, Nishad PK, Rawat S, Yadav N (2019)** to assess knowledge and attitude regarding DOTS therapy among the tuberculosis patients at selected DOTS centre shows that there is no association between the knowledge scores with selected socio-demographic variables like age, gender, religion, marital status, educational status, employment, types of family, monthly income, duration of diagnosis.

Conclusion

The present study concluded that most of the tuberculosis were having average level of knowledge and favourable attitude regarding ATT. There was a significant positive correlation between knowledge and attitude which indicates increase in the knowledge regarding ATT improves the attitude related to that. The knowledge regarding ATT was associated with marital status and the attitude regarding ATT was associated with family history of tuberculosis and counselling attended.

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