ISSN- 0301-1216
Indian J. Prev. Soc. Med. Vol. 57, No.3, 2026

Determinants of Adherence to DOTS Therapy in drug-Sensitive Tuberculosis: A Cross-Sectional Study from NITRD, New Delhi

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ABSTRACT

Background: Tuberculosis (TB) remains a major global health concern, with India bearing the highest burden. Despite the proven efficacy of the Directly Observed Treatment Short-Course (DOTS) strategy, non-compliance continues to hinder treatment success and threatens TB elimination targets. **Aim:** To assess the compliance of drug-sensitive TB (DS-TB) patients with DOTS therapy at NITRD, New Delhi, and to identify socio-demographic, behavioural, and health system factors influencing adherence. **Methods:** A descriptive survey design was used, involving 350 DS-TB patients in the continuation phase of DOTS therapy at selected NITRD-affiliated DOTS and microscopy centres. Data were collected through record review, structured interviews, a knowledge questionnaire, and an attitude scale. Descriptive statistics summarised participant characteristics and compliance rates, while Chi-square and Pearson's correlation tests examined associations and relationships. **Results:** Full compliance was observed in 91.71% of patients, partial compliance in 6.57%, and non-compliance in 1.72%. Compliance was significantly associated with age, education, occupation, and monthly family income ($p<0.05$), but not with marital status or co-morbidities. Higher knowledge scores were correlated with more positive attitudes towards DOTS therapy ($r = 0.58$, $p<0.05$). Common facilitators of adherence included self-motivation, family support, and proximity to DOTS centres, while barriers included medication side effects, economic hardship, and long travel distances. **Conclusion:** High compliance rates indicate effective programme delivery; however, targeted interventions addressing socio-economic and logistical barriers, alongside continuous patient education, are essential to sustain adherence and meet TB elimination goals.

Keywords: Tuberculosis, DOTS, Compliance, Adherence, Knowledge, Attitude, Socio-demographic factors, NITRD, India.

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Citation: Shareph N, Rajkumar S. Geetha, Khayam K Umer, Gupta P. Determinants of Adherence to DOTS Therapy in drug-Sensitive Tuberculosis: A Cross-Sectional Study from NITRD, New Delhi. Indian J Prev Soc Med, 2026; 57 (3): **270-281**. **DOI:** https://doi.org/10.67212/ijpsm.v57i3.273

Sequence of Article: **Submission: 27.06.2026** **Accepted: 08.09.2026** **Published: 30.09.2026**

Prior Publication: Nil; Source of Funding: Nil; Conflicts of Interest: None, Article # 867/1341

Introduction

Tuberculosis (TB) remains a formidable public health challenge globally, despite the identification of *Mycobacterium tuberculosis* as its causative organism over a century ago[1]. TB primarily affects the lungs (pulmonary TB), although it can also involve other organs (extra-pulmonary TB). Transmission occurs predominantly via airborne droplets expelled when an infected individual coughs, sneezes, or speaks. The disease disproportionately affects populations in low- and middle-income countries and is closely linked with socio-economic determinants such as poverty, malnutrition, overcrowding, and limited access to healthcare[2].

The World Health Organization (WHO) estimates that approximately one-quarter of the global population is infected with latent TB, representing a significant reservoir for potential active disease[3]. In 2022 alone, an estimated 10.6 million new TB cases were reported worldwide, corresponding to an incidence of 133 cases per 100,000 population, and TB was responsible for 1.3 million deaths among HIV-negative individuals, with an additional 167,000 deaths among HIV-positive patients[2]. The disease burden is not uniformly distributed; the WHO South-East Asia region accounts for the largest proportion (46%), followed by Africa (23%) and the Western Pacific (18%)[2].

TB in India: Epidemiological Context: India remains the highest TB-burden country, contributing approximately 27% of global cases in 2022[2]. In the same year, India recorded a historic peak in case notifications, with 2.42 million incident cases (172 per 100,000 populations) reported, representing a 13% increase from 2021.[4] Despite these achievements in surveillance, TB continues to claim a substantial number of lives and imposes significant socio-economic costs. The India TB Report 2023 indicates that 95.5% of notified patients initiated treatment, yet disparities persist between states; Delhi reported the highest case notification rate (546 per 100,000), whereas Kerala reported the lowest (67 per 100,000)[4].

The national response to TB has evolved over the decades. Following the limitations of the erstwhile National TB Programme, the Revised National Tuberculosis Control Programme (RNTCP) was launched in 1997, introducing the WHO-recommended Directly Observed Treatment Short-Course (DOTS) strategy[5]. In 2020, RNTCP was rebranded as the National Tuberculosis Elimination Programme (NTEP) to align with the goal of eliminating TB in India by 2025, five years ahead of the Sustainable Development Goal (SDG) target of 2030[6].

The DOTS Strategy and Its Relevance: The DOTS strategy, endorsed by WHO in 1994, rests on five core components:

1. Government commitment to sustained TB control activities.
2. Case detection by sputum smear microscopy among symptomatic patients.
3. Standardised short-course chemotherapy for all confirmed sputum-positive cases, with direct observation of treatment during the intensive phase.
4. Uninterrupted supply of high-quality anti-TB drugs.
5. A standardised recording and reporting system for programmatic evaluation[7].

Globally, DOTS has demonstrated cure rates of up to 95% under programmatic conditions[7]. In India, DOTS implementation under RNTCP and now NTEP has saved an estimated 7.75 million lives between 1997 and 2016, with nearly half of this impact attributable to reduced TB transmission[8]. However, non-compliance with DOTS therapy remains a persistent obstacle, threatening individual treatment outcomes and undermining public health gains[9].

***The Challenge of Non-Compliance*:** Treatment non-compliance in TB is a multifactorial phenomenon influenced by patient-related, socio-economic, healthcare system, and medication-related factors. Patients may interrupt therapy due to symptomatic improvement, adverse drug reactions, socio-economic constraints, stigma, or geographical barriers to accessing DOTS centres[10-12]. Evidence from multiple studies in India reveals that non-adherence rates vary between 10% and 20%, with urban centres reporting significant challenges linked to migratory populations, informal labour, and substance use[13,14].

The consequences of incomplete adherence are severe. Non-compliance increases the risk of treatment failure, relapse, continued transmission, and the development of multidrug-resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB), both of which require longer, more toxic, and more expensive regimens[15]. The WHO has identified treatment adherence as a critical determinant of TB control success and a central pillar of the End TB Strategy[16].

Global and National Elimination Goals: The Sustainable Development Goal (SDG) 3.3 and the WHO End TB Strategy target a 90% reduction in TB-related deaths and an 80% reduction in TB incidence by 2030 compared to 2015 levels[17]. India's National Strategic Plan (NSP) for TB Elimination (2017–2025) aims for even more ambitious milestones, including universal drug susceptibility testing, expansion of molecular diagnostic capacity, integration of novel drugs such as bedaquiline and delamanid, and enhanced patient support mechanisms like the Ni-kshay Poshan Yojana (nutritional support scheme) [6].

Yet, achieving these goals requires addressing the persistent issue of non-compliance, especially among drug-sensitive TB patients in high-burden urban areas such as New Delhi. Understanding the interplay of socio-demographic, behavioural, and structural factors that influence adherence is essential for tailoring interventions that enhance patient retention in care, reduce default rates, and ultimately contribute to TB elimination.

Aim: To assess the factors affecting compliance of DOTS therapy among the Drug Sensitive Tuberculosis patients at DOTS centres under National Institute of Tuberculosis and Respiratory Diseases (NITRD) New Delhi."

Objectives of the Study

1. To assess the compliance of DOTS therapy among the drug sensitive TB patients.
2. To seek the association of compliance with selected factors.
    - Socio-demographic factors
    - Knowledge
    - Attitude
3. To seek the relationship between knowledge and attitude regarding DOTS therapy.

Materials and Methods

***Study Design and Approach*:** This study adopted a descriptive survey design within a quantitative research approach to assess the factors affecting compliance with Directly Observed Treatment Short-Course (DOTS) therapy among drug-sensitive tuberculosis (DS-TB) patients. A survey method was deemed appropriate as it enables systematic collection of data on compliance behaviours and associated factors from a defined population at a specific point in time[18].

***Study Setting*:** The research was conducted at DOTS and microscopy centres operating under the supervision of the National Institute of Tuberculosis and Respiratory Diseases (NITRD), New Delhi, India. The selected centres were: Mehrauli DOTS Centre, NITRD DOTS Room, Tigri DOTS Clinic, Khanpur DOTS Clinic, Chattarpur DOTS Centre, Beri-Sarai DOTS Centre, Jonapur DOTS Centre, Fatehpur-Beri DOTS Centre, Safdarjung OPD DOTS Centre. These sites were chosen based on the availability of eligible patients, logistical feasibility, and the anticipated cooperation of health staff during data collection.

***Study Population*:** The study population comprised adult DS-TB patients (new or relapse cases) in the continuation phase of DOTS therapy, registered at the selected centres during the data collection period.

Inclusion Criteria

- Patients aged ≥18 years.
- Patients diagnosed with pulmonary or extrapulmonary DS-TB.
- Registered at DOTS centres under NITRD.
- Currently in the continuation phase of DOTS therapy.
- Able to understand Hindi or English.
- Provided informed consent to participate.

Exclusion Criteria

- Patients in the intensive phase of DOTS therapy.
- Patients aged <18 years.
- Patients unwilling or unable to participate.
- Patients not available during the study period.

Sample Size and Sampling Technique: The sample size was calculated using Cochran's formula based on a TB prevalence of 68% for Delhi as reported by Chauhan et al.[30] At a 5% margin of error and 95% confidence interval, the required sample size was 334. To account for potential non-response, 350 patients were recruited.

A non-probability purposive sampling method was used to select participants, given the need to include individuals meeting specific inclusion criteria within the study period[18].

Study Variables

Independent Variables

- **Socio-demographic factors:** Age, gender, marital status, education, occupation, monthly family income.
- **Compliance factors:** Self-motivation, socio-economic status, geographical access, healthcare-related factors.
- **Non-compliance factors:** Personal, socio-economic, medication-related, healthcare-related factors.
- **Knowledge** regarding DOTS therapy.
- **Attitude** towards DOTS therapy.

Dependent Variable

- **Compliance with DOTS therapy** (categorised as full compliance, partial compliance, or non-compliance).

***Data Collection Tools and Techniques*:** Four structured tools were developed by the researcher after literature review, expert validation, and pilot testing:

1. **Structured Compliance Proforma** – for record review of patient attendance and categorisation of compliance status.
2. **Structured Interview Schedule** –
    - ***Section A*:** Socio-demographic profile.
    - ***Section B:*** Factors affecting compliance (separate formats for compliant and non-compliant patients).
3. **Structured Knowledge Interview Schedule** – to assess understanding of DOTS therapy.
4. **Attitude Scale** – to evaluate perceptions and attitudes towards DOTS therapy.

Data Analysis: Data were coded and entered a statistical software package for analysis. Descriptive statistics (frequency, percentage, mean, standard deviation) were used to summarise socio-demographic data and compliance rates. Chi-square tests were applied to assess associations between compliance status and selected variables. Pearson's correlation coefficient was used to examine relationships between knowledge and attitude scores. Statistical significance was set at $p< 0.05$.

Results

A total of 350 drug-sensitive tuberculosis (DS-TB) patients in the continuation phase of Directly Observed Treatment Short-Course (DOTS) therapy participated in the study. All participants met the inclusion criteria.

The socio-demographic distribution showed a balanced representation across age groups; with the majority in the 18-25-year range 168 (48%). Males constituted 177 (51%) of the sample, while females accounted for 173 (49%). Regarding marital status, 165 (47%) were married, 161 (46%) unmarried, and 23 (7%) widowed or divorced. Educational attainment varied from no formal education 70(20%) to graduation and above 53 (15%). Occupations included 87 (24.86%) were mostly homemaker, Monthly family income ranged from less than ₹12444 to more than ₹249043.Most (41.71%) of TB patients having family income per month was ₹<12444 and 34.29% had between ₹12445 - 37324

Compliance Status with DOTS Therapy: Based on the structured compliance proforma and attendance records:

- **Full compliance** was observed in 91.71% (*n* = 321) of patients.
- **Partial compliance** was noted in 6.57% (*n* = 23).
- **Non-compliance** was identified in 1.72% (*n* = 6).

Data reveals the majority (91.71%) of TB patients had fully compliant with DOTS therapy whereas 6.57% had partial compliance and only 1.71% were not compliant with DOTS therapy.

The data given in Table-1 that majority of the drug sensitive TB patients (66.6%) had average knowledge regarding the DOTS therapy, 23.1% had good knowledge whereas 10.3% had poor knowledge regarding the DOTS therapy.

Table-1: Frequency and percentage distribution of drug sensitive TB patients according to their knowledge score regarding DOTS therapy

Knowledge category	Range of score	No.	%
Good knowledge	15-20	81	23.1
Average knowledge	8-14	233	66.6
Poor knowledge	0-7	36	10.3
Total		**350**	**100.0**
Maximum Score =20			

The data given in **Table-2** shows that most of the drug sensitive TB patients (48.3%) had favourable attitude regarding the DOTS therapy, 45.4% had satisfactory attitude whereas 6.3% had unfavourable attitude. The data shows the most of the drug sensitive TB patients had favourable attitude and satisfactory attitude towards the DOTS therapy. Hence most drug sensitive TB patients had favourable attitude regarding the DOTS therapy.

Table-2: Frequency and percentage distribution of drug sensitive TB patients according to their attitude score regarding DOTS therapy

Attitude category	Range of score	No.	%
Favourable attitude	61- 80	169	48.3
Satisfactory attitude	41- 60	159	45.4
Unfavourable attitude	21- 40	22	6.3
Poor attitude	0 - 20	-	-
Total		**350**	**100.0**
Maximum Score = 80			

The data shows that computed chi-square value between compliance status and the selected variables age, gender and education. According to the data given in the above table the computed chi square value of all the variables such as age (23.36), gender (7.2) and education (30.88) were found to be statistically significant at 0.05 level of significance **(Table-3)**.

Table-3: Chi-square values showing association between compliance status with selected variables in term of age, gender, and education

Variables		Compliance level			χ^2 value
		Full	Partial	None	
Age (in years)	18-25	158	8	2	23.36*
	26-33	53	2	-	
	34-41	35	5	4	
	42-49	33	2	-	
	50 & above	42	6	-	
Gender	Male	157	14	6	7.20*
	Female	164	9	-	
Education	No formal Education	59	11	-	30.88*
	Primary School	43	4	3	
	Middle School	46	4	3	
	High School	49	-	-	
	Intermediate	72	3	-	
	Graduate	39	1	-	
	Post graduate	13	-	-	

Significant at 0.05 level

Table-4: Chi-square values showing association between compliance status with selected variables in term of occupation, monthly family income and marital status.

Variables		Compliance level			χ^2 value
		Full	Partial	None	
Occupation	Home maker	82	5	-	42.97*
	Unemployed	21	2	4	
	Currently Not Working	62	8	-	
	Self employed	29	2	1	
	Private employed	45	6	1	
	Government employed	2	-	-	
	Student	80	-	-	
Monthly Family Income	< 12444	128	15	3	24.6*
	12445 - 37324	113	6	1	
	37325 - 62272	56	1	-	
	62273 - 93380	10	-	2	
	93381 - 124488	13	1	-	
	124489-249043	1	-	-	
Marital Status	Unmarried	149	8	4	2.81**
	Married	150	13	2	
	Divorced	7	1	-	
	Widowed	14	1	-	
	Separated	1	-	-	

*0.05 = Significant level; ** = Not Significant.

The data shows that computed chi-square value between compliance status and the selected variables occupation, monthly family income and marital status. According to the data given in the above table the computed chi square value of the variables such as occupation (42.97) and monthly family income (24.60) were found to be statistically significant at 0.05 level of significance except marital status (2.81) that was not found to be statistically significant at 0.05 level of significance **(Table-4).**

Table-5: Chi-square values showing association between compliance status with variables in terms of total completion of DOTS therapy, personal habits and co-morbidity.

Variables		Compliance level			$\chi 2$ value
		Full	Partial	None	
Total Completion of DOTS therapy	4 months	139	6	4	16.35*
	5 months	81	14	1	
	6 months	46	2	1	
	7 months	37	1	-	
	8 months	18	-	-	
Personal Habits	None	221	7	2	31.93*
	Alcohol	9	3	-	
	Smoking tobacco	10	1	-	
	Smokeless Tobacco	13	3	2	
	Alcohol +Smoking tobacco	35	5	2	
	Smoking tobacco + Smokeless tobacco	6	1	-	
	Alcohol +Smoking tobacco +Smokeless tobacco	27	3	-	
Comorbidity	None	243	16	3	13.61**
	Diabetes	31	1	2	
	Hypertension	13	4	-	
	HIV	-	-	-	
	Asthma	3	-	-	
	COPD	1	-		
	Diabetes + Hypertension	30	2	1	

*0.05 = Significant level; ** = Not Significant.

The data shows that computed chi-square value between compliance status and the selected variables total completion of DOTS therapy, personal habit and presence of any other comorbidity. According to the data given in the above table the computed chi square value of the variables such as total completion of DOTS therapy (16.35) and personal habit (31.93) were found to be statistically significant at 0.05 level of significance except comorbidity (13.61) that was not found to be statistically significant at 0.05 level of significance except marital status (2.81) and presence of any other comorbidity (13.61) **(Table-5).**

Hence, it indicates that compliance status of drug sensitive TB patients regarding DOTS therapy was affected by these all variables except marital status and presence of any other comorbidity.

Table-6: Chi-square value showing association between compliance status with knowledge score of drug sensitive TB patients regarding DOTS therapy.

Knowledge Score	Compliance Status			χ^2 value
	Full	Partial	None	
Good	80	1	0	43.33*
Average	215	17	1	
Poor	26	5	5	

*Significant at 0.05 level, df (4), $\chi^2 = 43.33$

The data shows the computed chi square value (43.33) between compliance status and knowledge score among drug sensitive TB patients regarding DOTS therapy. According to the data given in above table, it can be seen the computed chi-square value (43.33) between compliance status and knowledge scores were found statically Significant at 0.05 level of significance. Hence, compliance status was influenced by their knowledge (**Table-6).**

Table-7: Chi-square value showing association between compliance status with attitude score of drug sensitive TB patients regarding DOTS therapy.

Attitude Score	Compliance Status			χ^2 value
	Full	Partial	None	
Favourable	161	8	0	65.55*
Satisfactory	146	12	1	
Unfavourable	14	3	5	

*Significant at 0.05 level, df (4), $\chi^2 = 65.55$

The data shows the computed chi square value (65.55) between compliance status and attitude score among drug sensitive TB patients regarding DOTS therapy. According to the data given in above table, it can be seen the computed chi square value (65.55) between compliance status and attitude scores were found statically significant at 0.05 level of significance **(Table-7)**.

Hence, compliance status of drug sensitive TB patients was influenced by their high attitude score and compliance status were found higher among them.

Table-8: Karl Pearson coefficient of correlation between knowledge score and attitude score of drug sensitive TB patients regarding DOTS therapy.

Variables	Mean ± SD	"r" value
Knowledge score	11.96 ± 3.50	0.58*
Attitude score	58.65 ± 10.97	

* Significant at the 0.05 level

Type of relationship was moderately positive relationship: The data presented in the **Table-8** shows a moderately positive correlation between the knowledge scores and the attitude scores (r=0.58) of the drug sensitive TB patients regarding DOTS therapy which is found to be statistically significant at 0.05 level of significance. Hence it indicates that, higher the level of knowledge, more the favorable attitude of the drug sensitive TB patients towards DOTS therapy.

Discussion

Findings related to demographic characteristics: The present study showed (48%) of the TB patients were from 18-25 years age group. This result is like a study by *Zhu, M. et al.*2018; found that age groups with the greatest percentage of the TB cases were high in younger, accounting for 36.9%.[19] The similar finding seen in another study done by *Kathryn J. Snow et al*.2018; found that the highest numbers in 20 to 24 years old.[20]

The present study showed (50.57%) of the TB patients were male. The present study was supported by *Humayun, M. et al.* 2022; found that sample was almost equally distributed based on gender i.e. Male (58.5%).[21] The present study was also supported by a study done by *Miandad, M. et al.* 2016; found that sample was equally distributed based on gender i.e. (49.83.2%) were women and (50.17%) were men.[22]

The present study showed Most (49.43%) of TB patients having below secondary level education. The present study was supported by a study done by *Miandad, M. et al.* 2016; found that most of samples (55%) were having less than below secondary school level education.[23]

The present study showed that most (24.86%) of the TB patients were homemaker. The present study was supported by a study done by *Sharma, P., Verma, M. et al.* 2019; titled 'Epidemiological profile of tuberculosis patients in Delhi, India: A retrospective data analysis from the DOTS center'. found that most (28.2%) of the TB patients were housewife.[24]

The present study showed that majority (41.71%) of TB patients having family income per month was Rs. <12444 and 34.29% had between Rs. 12445 - 37324. So total 76% of TB patients have family monthly income <37324. The present study was supported by a study done by *Chatterjee S. et al.* 2023; titled 'Journey of the tuberculosis patients in India from onset of symptom till one-year post-treatment' found that majority (85%) of TB patients have family monthly income < Rs. 33244($399).[25]

The present study showed that most (47.14%) of the TB patient were married and 46% were unmarried. The present study was supported by a study done by *Solanki, N. et al.* 2023; found that The majority of TB patients were married (63%).[26]

The present study showed that 9.71% of TB patients were have diabetes as comorbidity. The present study finding was supported by the study done by *Ragouraman, D. et al.* 2021; found that TB patients were have diabetes as comorbidity at 8.5%,10.6% and 8.9% in the year of 2016, 2017 and 2018 respectively.[27]

Findings related to compliance status of DOTS therapy among the drug sensitive TB patients

The present study showed majority (91.71%) of the TB patients were fully complaint with DOTS therapy. This finding is different to the finding of *C, H. et al.* 2022; stating that Compliance to DOTS strategy was 53.61%.[28] This finding is like the finding of a study conducted by *Upadhyay, S et al.* 2019; stating that majority of patients (95%) compliant with DOTS therapy.[29]

The present study showed only 1.71% of the TB patients were non-compliant to DOTS therapy. This finding is like the finding of *Liaqat Ali Chaudhry et al*. 2015 stated that 1.95% new TB patients was non-compliant to DOTS therapy.[30] Conversely finding in a study conducted by *Prasad pore(2020);* found that 61.4% were compliance patients and 38.6% were noncompliance patients.[31]

The present study showed (66.6%) of the TB patients had average knowledge and 10.3% had poor knowledge and 23.1% had good knowledge regarding DOTS therapy. These findings are similar to the finding of *Halemani K.al.* 2019; stating that 50% of TB patients had inadequate knowledge, 40% had moderate knowledge and 10% had adequate knowledge regarding DOTS therapy.[32] One more study conducted by *Mexina S J et al.* (2022) reveals that majority 40% study subjects had average knowledge,

31% had poor knowledge, 29% had good knowledge of tuberculosis and anti-tuberculosis treatment.[33] Another study done by *Rohit.* 2017; shows similar findings that majority 66% subjects having average knowledge, 7% having good & 26% having below average knowledge.[34]

The present study showed TB patients (48.3%) had favourable attitude regarding the DOTS therapy, 45.4% had satisfactory attitude whereas 6.3% had unfavourable attitude. The similar findings seen in a study of *Halemani K.al.* 2019; also stated that 3% of TB patients had poor attitude, 87% had moderate attitude and 10% had good attitude.[32]

One more study conducted by *Mexina S J et al.* (2022) reveals that 43% study subjects had neutral attitude, 32% had positive attitude, 25% had negative attitude towards DOTS therapy.[33]

Findings related to association between Compliance status of Drug sensitive TB patients regarding DOTS therapy with selected variables

The finding of the present study suggest that the Compliance status was influenced by important variables such as age, gender, education, occupation, monthly family income, total completion of DOTS therapy and personal habit. Similarly the study conducted by *Bea, S. et al.* (2021); found that compliance status was influenced by age, gender, comorbidities, comedications.[35] Similar finding was also find in a study done by *Nepal AK et al. (*2012); found that age and family income affect compliance but conversely, it also found sex, occupation and education was not affect compliance.[36]

In present study it was observed that there was significant association shows between compliance status and knowledge score among drug sensitive TB patients regarding DOTS therapy. These findings are similar to the finding of *Ziliwu* (2022); stating that there was a knowledge relationship to compliance 0.000<0.05. And there was a relationship of attitude towards compliance 0.000<0.05.[37]

In present study it was also observed that there was significant association between compliance status and attitude score among drug sensitive TB patients regarding DOTS therapy. This finding consistent with the result of the study *Sukartini, et al.* (2020), the results showed that knowledge with medication compliance showed a relationship with (p-value 0.000). Motivation with medication compliance showed a relationship of (p-value 0.000).[38]

Findings related to the relationship between knowledge score and attitude score of Drug sensitive TB patients regarding DOTS therapy

The present study showed moderately positive correlation between the knowledge scores and the attitude scores (r=0.58) of the drug sensitive TB patients regarding DOTS therapy which is found to be statistically significant at 0.05 level of significance. The similar findings seen in a study of *Kang SR etal.* (2016); stated that A slightly positive correlation was observed between the knowledge of tuberculosis and the attitudes toward tuberculosis.[39] This finding consistent with the result of the study *G. AG, et al.* (2018); stated that Positive attitude had a statistically significant association with higher socioeconomic class and with adequate knowledge.[40]

Conclusion

This study revealed that the majority (91.71%) of drug-sensitive tuberculosis patients at NITRD maintained full compliance with DOTS therapy. Compliance was significantly influenced by socio-demographic factors such as age, education, occupation, and income, as well as by patient knowledge and attitude. A positive correlation between knowledge and attitude underscores the value of targeted health education in fostering adherence. Although non-compliance was relatively low, its potential to cause treatment failure and drug resistance highlights the need for continuous patient counselling, social support, and removal of logistical barriers. Strengthening these areas will be essential for sustaining high adherence rates and achieving India's goal of TB elimination by 2025.

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