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FACTORS AFFECTING DOTS TREATMENT COMPLIANCE: AN ASSESSMENT AT RNTCP UNIT IN A MEDICAL COLLEGE

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ABSTRACT
Treatment non-adherence is critical challenge to successful tuberculosis control. Re-emergence of tuberculosis in parallel with HIV infection with drug resistant strains requires continued battle of control strategies. In present report treatment non-adherence among DOTS patients of RNTCP unit at Aurovindo Medical College Indore and apparent determinents of the same has been compiled and analysed. The scope for improving current care practices in general with particular concerns relating older and poor patients is elaborated by the findings, in respect to anti TB treatment adherence.

KEYWORDS: DOTS, RNTCP, Tuberculosis, Antitubercular drug treatment.

INTRODUCTION
Opportunity to information relating tuberculosis through interaction with care providers is integrated strategically in the DOTS (Directly observed treatment short course) concept.[1] There still remain specific life and social contexts of patients that may influence the success of DOTS. The disease tuberculosis is known to target low socioeconomic and less educated class in population more aggressively.[2] This also implies the risk of treatment non-adherence. Minor instances of treatment default are however capable of grossly undermining success of the revised national tuberculosis control programme (RNTCP).

Therapeutic compliance associates to knowledge of specific aspects of the disease among patients.[3] The accessibility aspects of early care directly pattern participation of the patient in his/her medical care.[4] In the present report, treatment compliance is investigated among 100 DOTS patients catered at the RNTCP unit in Aurovindo Medical College Indore (M.P).

METHOD
New adult (above 15 year) patients commencing TB treatment under DOTS strategy and completing initial 30 doses or more were incorporated in the study. Informed consent for using their medical information was obtained with assurance of anonymity. Data were collected without patient's names over one year through July 2013 to Aug 2014. Treatment cards were scrutinized for results of laboratory tests. Interview at initial inclusion was used to elicit all clinical, socio-demographic and disease specific information of individual cases. These

included information of familial, occupational, educational profiles as desirable.[5]

Knowledge of patient in respect to the anti tubercular therapy was subjectively rated as high, moderate or low. The ability to explain why multiple drugs need to be taken, their names, the expected duration to continuation of treatment, the signs of adverse drug effects and essential directives issued to follow through the course of therapy.

Significance of faith in healing capabilities of drugs and rational expectations from the chemotherapy in patterning desirable patient behaviours is known. Perception of curative promise of drug therapy by the patients was elicited and judged as favorable or unfavourable. These aspects differentially influence compliance to treatment, and hence examined.[6]

The role of health care providers in patient education and favorable behavioural change is also recognized. Accessibility and quality of interaction between patient and caregiver is assessed also for impact. Consistence of opportunity to direct interaction, proactive educating efforts of care giver is significant perspectives for treatment compliance.[3,7] and assessed for impact. The issue of physical convenience i.e. the accessibility by distance of DOTS delivery locus was examined for impact. Travelling time under or over 30 minute was used as differentiating parameter.

Treatment compliance was taken as breached (noncompliance), if the patient missed one or more medicines for consecutive 7 days. Evaluation for such compliance was done at 2 month and 3 month after

inclusion of the cases. Noncompliance at any or either occasion was enough to label the case.[8] The compliance profiles were contrasted with socio-demographic, knowledge and perception parameters. Association aspects are analysed using quantal (Chi Square) statistic.

OBSERVATIONS, ANALYSES AND DISCUSSION
64 of the studied 100 cases were found to be treatment compliant under the community based DOTS. Of the 36

noncompliant cases, 30 cases slipped to noncompliance in late 3 month enquiry, or continuation phase of TB chemotherapy. Adverse drug reactions of euphoria of recovery may be significant to such occurrence (4). The medicine intake of patient was missed proper entry in treatment card in most such cases. Such eclipse of compliance information must be checked as strategic to ensure compliance.[9]

Table 1: Demographic Charecteristics And Treatment Compliance Profile In Patients Of Dots

Characteristics	Compliant (n)	Non-compliant (n)	P value (CHI^2)
Age groups			**< 0.05**
15-34 yrs	27	12	
35-54 yrs	24	8	
55 & above	13	16	
Sex			
Male	40	24	
Female	24	12	
Marital status			
Single	16	11	
With Spouse	48	25	
Occupation			
Agriculture	25	10	
Other Laborers	18	10	
Private workers	6	5	
Govt. Employees	3	1	
Housewife/unemployed	12	10	
Education Level			
College Education	5	0	
Secondary School	25	11	
Primary School	19	11	
Illiterate	15	14	
Family Financial status			**< 0.05**
Lower middle class	30	24	
Upper middle class	27	11	
Affluent	7	1	

As depicted in above table, treatment compliance was better in younger patients. Financial status is also

significant determinant of treatment compliance, as also education to lesser extent.

Table 2: Patient Knowledge Profile of Disease and Treatment versus Compliance Rates

	Compliant (n)	Non-compliant (n)	P value (CHI^2)
Knowledge level			**< 0.05**
High	32	8	
Moderate	12	10	
Low	20	18	

The knowledge of disease and treatment was significantly associated with treatment compliance. Most patients were aware of symptoms, diagnostic methods as well as duration of treatment regimens. Half the patients

were not adequately cognizant of TB transmission and prevention and the consequence of irregular and incomplete treatment. Very few patients know about the side effects of specific medications.

Table 3: Patient Perception of the Anti TB Treatment and Compliance Profiles

	Compliant (n)	Non-compliant (n)	P value (CHI^2)
Perception			**< 0.01**
Favorable	46	20	
Unfavorable	18	16	

Low faith in therapy markedly undermines compliance in the tuberculosis patients.

Table 4: Quality Profile of Care and Compliance Rates To Anti Tb Treatment

Parameters	Compliant (n)	Non-compliant (n)	P value (CHI^2)
Consistent care giver Interaction			**< 0.01**
Yes	41	14	
No	23	22	
Proactive educating caregiver			**<0.05**
Yes	42	17	
No	22	19	
Travel time to receiving DOTS			**< 0.01**
< 30 min	49	16	
> 30 min	15	20	

Significant impact of the role of care giver and convenient access to treatment center is quite evident on DOTS treatment compliance.

The study emphasizes low financial profile as major socio-demographic factor impairing compliance to even the free treatment under DOTS, like in most chronic diseases.[10] Elderly patients need particular scrutiny for treatment adherence. The greater vulnerability to adverse drug effects[11] and need for greater convenience in receiving treatment are important to address. Old patients constitute significant large contingent of the TB victims.

Treatment non-adherence is a key determinant of undermining success of TB control programmes (12). Tuberculosis is the re-emergent killer with rise in multidrug resistant and Extreme Drug resistant strains (13). The modest observations in this study emphasize crucial role of care quality on part of the DOTS treatment supervisors (14). Their punctual availability and accessibility to patients; their proactive patient informing and educating activity both matter very significantly (15). Addressing the convenience aspect through close availability of service is vital to treatment adherence by older as well as poor working class patients (16). The time and money spent for receiving treatment puts much greater burden of opportunity costs upon such patients.

In brief, important quality care perspectives needing due address are brought to fore by this report, toward enhancing success of TB control programme.

Conflict of interest's statement
The author declares that there is no actual or potential conflict of interests.

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