

Original Article

ASSESSMENT OF EFFECTIVENESS OF TB POSTING DURING THE COMPULSORY ROTATORY RESIDENTIAL INTERNSHIP (CRRI) PROGRAMME

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Abstract : Research Question: What is the effectiveness of TB posting during the Compulsory Rotatory Residential Internship (CRRI) programme?

Objectives: To assess the effectiveness of TB posting during the CRRI programme. To find out the need of making Tuberculosis & Respiratory Diseases Department posting mandatory during CRRI Programme. **Study Design:** Cross Sectional study. **Study Duration:** 12 months i.e. 01st April 2009 till 31st March 2010 **Participants:** 90 students who joined the CRRI programme formed the study group. Out of these 90 interns only 57 (64%) of them joined their two months Compulsory Rotatory Internship in the Department of Community Medicine and these were posted in Tuberculosis & Respiratory Diseases Department for 15 days. **Methodology:** A pre-designed pre-tested self-administered questionnaire was administered to the participants on the first day and last day of their posting in Tuberculosis & Respiratory Diseases Department. The results were analysed by using suitable statistical package. **Results:** The mean pre-test score was 28 (49.6%) and the mean post-test score was 38 (61.5%). It was observed that there was a 27% improvement in the knowledge of the participants when the question about the year of launching of RNTCP programme in India was asked. A remarkable improvement (46%) was found in the difference between pre and post-test knowledge of the participants when the questions like “Who are the DOTS providers” and “What is the colour coding of boxes for different categories of patients” were asked. A significant difference in the knowledge was found in the pre and post-test assessment in reference to Tuberculosis and its National Programme.

Key Words: Compulsory Rotatory Residential Internship (CRRI), Tuberculosis

Introduction:

Compulsory Rotatory Residential Internship (CRRI) refers to one-year compulsory work in the hospital attached to the medical college or in any other approved hospital as allowed in some medical colleges (also known as Teaching Hospital), for a period of one year. This is required for the award of the Bachelor of Medicine and Surgery (MBBS) medical degree in India. (1)

Though medical education in India has been around for a long time, it has not fully kept pace with the changing disease patterns and advancement of science and technology. The goal of medical education should be to produce health personnel capable of managing common problems in realistic health care settings. Doctor to population ratio of one doctor for every 1676 population (or 59.7 physicians for 100,000 population) (2). Graduate medical curriculum is oriented towards training students to undertake the responsibilities of a physician contact who is capable of looking after the preventive, promotive, curative & rehabilitative aspect of medicine (1).

An Intern (also called an Internee or a CRRI) is posted in all the clinical departments of the hospital on a rotation basis. This gives him the basic clinical experience in all the disciplines of medicine and enables him to work as a General Physician.

The Medical Council of India (MCI) is an autonomous body which is responsible for the maintenance of overall standards of Medical Education of Allopathic system of Medicine in India. MCI also states that at the end Internship Training, the student should be able to diagnose clinical common disease conditions encountered in practice and make timely decision for referral to higher level; Demonstrate skills in monitoring of the National Health Programme and schemes, oriented to provide preventive and promotive health care services to the community. The MCI in its amendment notification No. MCI-34(41)/2008-Med./29527 dated 20th Oct 2008 under Clause 14(4) under the heading “Internship - Time Distribution” has made Elective posting of 15 days duration in the following subjects: Dermatology and Sexually Transmitted Diseases, Tuberculosis and Respiratory Diseases, Radio-Diagnosis, Forensic Medicine, Blood Bank, Psychiatry.

Keeping the above facts in view, a study was planned to assess the effectiveness of regular posting of Interns through Department of Community Medicine or compulsory posting under CRRI in the Department of Tuberculosis and Respiratory Diseases.

Material and Methods:

Study Design: Cross Sectional study.

Study Duration: 12 months i.e. 01st April 2009 till 31st March 2010

Participants:

90 students (out of 100) were able to pass in MBBS Final Professional Examination and joined the CRRI programme. Out of these 90 interns only 57 (64%) of them joined their two months Compulsory Rotatory Internship in Department of Community Medicine and through the Department of Community Medicine they were posted in Tuberculosis & Respiratory Diseases Department for 15 days. Therefore all these interns formed the sample size for this study.

Methodology:

A pre-designed pre-tested self-administered questionnaire consisting of 30 items having a mix of close ended as well as open ended questions, problem based exercise, short definitions, full forms of abbreviations etc was administered to the interns on the first day of their posting in Tuberculosis & Respiratory Diseases. The questions covered mode of transmission, diagnostic criteria, treatment regimens, short course chemotherapy including DOTS, etc. These questionnaires were filled up by the interns under the supervision of the investigators. The interns were not permitted to discuss the questions among themselves. The same questionnaire was administered to these interns on the last day of their posting in Tuberculosis & Respiratory Diseases Department. The results were analysed by using suitable statistical test by SPSS (Version 20) and Microsoft Excel (2010) software.

Results:

A total of 57 (64%) interns were posted in Tuberculosis & Respiratory Diseases Department. It was observed that there was a 27% improvement in the knowledge of the participants when the question about the year of launching of RNTCP programme in India was asked. A remarkable improvement (46%) was found in the difference between pre and post-test knowledge of the participants when the questions like “Who are the DOTS providers” and “What is the colour coding of boxes for different categories of patients” were asked.

Whereas a decline by 20% in the knowledge of the participants was observed in the question “Do you give BCG injection to a HIV +ve new born” was observed. Surprisingly, when the question “No of sputum specimens required under DOTS for screening of Pulmonary TB?” was asked a decline of 7% in the knowledge of participants was seen in post-test analysis. This may probably be due to confusion between the 03 or

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Knowledge Assessment Questions						
Q No	Question	PRE TEST (n= 57)		POST TEST (n= 57)		Improvement
		No	%	No	%	
1	When was the RNTCP program started in India?	30	53	46	80	27
2	When was the DOTS strategy introduced under RNTCP?	0	0	0	0	0
3	XDR-TB stands for...?	23	40	42	73	33
4	VCCTC stands for...?	23	40	46	80	40
5	Who are DOTS providers?	27	47	53	93	46
6	What is the colour coding of boxes for different categories of patients?	27	47	53	93	46
7	In which immune disease TB is commonest co infection?	46	80	49	87	7
8	Enlist one common side effect of the following ATT drugs?	23	40	46	80	40
9	Method for sputum collection for AFB staining?	42	73	49	87	14
10	Diagnostic criteria of pulmonary TB as per DOTS strategy?	46	80	53	93	13
11	What is the present coverage of RNTCP in India?	11	20	23	40	20
12	DOTS stands for...?	46	80	57	100	20
13	ICTC stands for...?	30	53	34	60	7
14	Do you give BCG injection to a HIV +ve new born?	30	53	19	33	-20
15	Have you ever seen the paediatrics ATT boxes?	11	20	4	7	-13

Skill Assessment Questions						
Q No	Question	PRE TEST (n= 57)		POST TEST (n= 57)		Improvement
		No	%	No	No	
1	How to ensure that patient have taken ATT under DOTS?	34	60	42	93	33
2	Have you ever examined a patient of TB & categorized with the help of algorithm?	19	33	24	53	20
3	PBE: A 48 years old chronic smoker male coal mine worker came to your OPD with complain of productive cough from last 3 week with occasional history of black streaks in morning sputum, his sputum for AFB is -ve but on X ray chest there is a cavity in right upper lobe of lung. How will you manage such case?	0	0	8	15	15
4	What is the method of safe disposal of sputum in hospital and at Home?	4	7	36	80	73
5	Have you ever visited DOTS centre? (If Yes please specify)	27	47	42	93	46

02 sputums required for screening of Pulmonary Tuberculosis as the policy for considering 02 sputum for screening of Tuberculosis was launched in 2009.

The mean pre-test score was 28 (49.6%) and the mean post-test score was 38 (61.5%). The most significant change (73%) was for “What is the method of safe disposal of sputum in hospital and at Home?”

None of the participants could correctly solve the Problem Based Exercise (PBE) in the pre-test though (8%) were able to tell the correct regimen as per the patient category under RNTCP guidelines in post-test assessment.

An increase was found in the knowledge and skills of Interns after 15 days of posting in Tuberculosis & Respiratory Diseases Department and the same was found to be highly significant by applying Wilcoxon Matched-Pairs Signed-Ranks Test ($W+ = 277$, $W- = 23$, $N = 24$, $p <= 0.0003012$).

Discussion

Very few studies have been conducted on interns depicting the pre and post analysis results in relation to their posting in Tuberculosis & Respiratory Diseases Department.

In the current study the mean pre-test knowledge score was 28 (49.6%) and the mean post-test knowledge score was 38 (61.5%). Studies performed in other parts of the world showed students and physicians knowledge ranging from 38% to 85%. (3,4,5,6,7,8,9). Though the assessment tool used may be different in different studies but the key core knowledge components might be same in all.

In our study, 73% of the interns were aware of the diagnostic criteria of Pulmonary TB as sputum examination, while 65.9% correctly chose sputum examination for AFB as the single most confirmatory test for diagnosing Pulmonary TB (10). In another study conducted in Pakistan only 38% considered sputum smear as the best test for diagnosis of

Pulmonary TB (3). 6.3% of interns had knowledge regarding AFB sputum microscopy as a monitoring tool for diagnosis of Pulmonary Tuberculosis (11).

In the present study, 80% of the study participants were aware of the acronym DOTS. In another study almost none of the respondents knew the meaning of the acronym DOTS in reference to Tuberculosis (11) whereas among medical interns of Pakistan it was found to be 18% (3). In current study the correct meaning of XDR - TB was stated by 40% initially which grew upto 73% after the TB & Chest Diseases Dept posting. Though in Sub Saharan Africa none of the medical interns were able to tell the meaning or definition of XDR – TB (12).

In a study among a north Indian urban community only 2.3% knew that TB was caused by a germ. Only 12.6% knew that the duration of treatment was six to eight months, and 1.7% knew about the preventive role of Bacillus Calmette-Guerin (BCG) (13). In another study the core message regarding symptoms, diagnosis, treatment center, and free treatment was recalled correctly by 14.3, 44.5, 65.4, and 89.2%, respectively (14). There was an overall increase in knowledge, between 18 and 58%, in various fields, at the end of two years (15).

There was a statistically significant change in the level of knowledge in domains such as diagnosis and treatment of tuberculosis, which indicated that the empowerment of students could guide the community on treatment aspects. (16)

However, a mere 4.2% study subjects were aware of all modes of transmission. (10)

We found that few interns indicated sputum smear microscopy for diagnosis of TB or as a follow-up test. Sputum microscopy has a high specificity and low rate of false negatives. It is considered to be the most efficient method for diagnosis of pulmonary TB, and is advocated under the DOTS strategy worldwide. Interns in Pakistan and India were somewhat better informed about sputum smear microscopy (3).

Conclusion

The present study has revealed that the Knowledge & Skill of interns with regards to Tuberculosis was not very much upto the mark before their 15 days posting in the Tuberculosis & Respiratory Diseases Department as shown by the Pre-test results whereas it significantly increased after their posting in this Department ($p \leq 0.0003012$). These findings prove that the Tuberculosis & Respiratory Diseases Department posting of interns has a lot of relevance in the CRRI training programme. This posting should be made compulsory (instead of optional) for all the interns so that they do not miss out on the latest practical aspects of Tuberculosis management & prevention, which (Tuberculosis) is an important public health problem in our country. In the present study though the sample size was small but the emphasis was just to highlight the flaws in current CRRI training programme & to recommend more meaningful training as per objectives of MCI training programme. Elective postings imparting training related to National health priority viz. tuberculosis, malaria instead can be covered compulsorily through interns posting in Community Medicine or General Medicine department and assessed at the end of their posting.

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