

USE OF JIG SAW TECHNIQUE IN SENSITIZING MEDICAL RESIDENTS ABOUT REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME OF INDIA

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ABSTRACT:

Objective: Interactive lectures have been shown to promote deep learning which allows better understanding, retention and recall of knowledge as well as its application. Jig saw technique has long been used as a cooperative and collaborative learning strategy in all levels of education. It is one of the engagement triggers in which base groups with a small number four or five students are set up. This study is planned to assess an effect of Jig Saw Technique on the knowledge of medical residents regarding Revised National Tuberculosis Control Programme of India. **Material and Methods:** A cross sectional study was conducted among 40 postgraduate students where Pre and Post test was conducted on same day. An intervention in the form of Jig Saw Technique was administered. Data was entered into Office Excel Sheet and analysed by using 'Paired t test'. **Results:** 'Jig Saw Technique' did help in improving the knowledge of study participants and difference was observed to be statistically significant. ($t = 12.82$, $p < 0.001$). **Conclusion:** Simple interactive teaching methodology like Jig saw Technique can make significant gain in knowledge of medical residents pertaining tuberculosis and RNTCP programme of India.

Key words: Jig saw technique, medical residents, RNTCP.

INTRODUCTION

There have been burgeoning developments and changes in medical education. The information and communication technology has revolutionized the teaching and learning (1). Various teaching methodologies have been developed to facilitate active involvement of students.

Lectures are being criticized for being one way passage of information, their educational value can be enhanced by making them interactive. (1) Interactive lectures have been shown to promote deep learning which allows better understanding, retention and recall of knowledge as well as its application. (1).

It was found that the use of interactive lectures led to a statistically significant improvement in student academic performance as compared to traditional lecture approach. (2) Chilwant K.S. also reported that structured interactive session is better lecture format as compared to didactic lectures. (3)

Jig saw technique has long been used as a cooperative and collaborative learning strategy in all levels of education. It is one of the engagement triggers in which base groups with a small number four or five students are set up. Each group member is assigned some unique material to learn and then teach to his group members. (4) This technique involves breaking subject matter into pieces, giving one piece each to a group of students and then challenging them to combine the pieces and come out meaningful information. (1)

The present study was an attempt to assess an effect of Jig saw technique on knowledge of postgraduate medical students about RNTCP programme of India.

OBJECTIVE

To assess the effect of Jig Saw Technique on knowledge of postgraduate medical students regarding RNTCP Programme of India.

MATERIAL AND METHODS

Participants

A cross sectional study was conducted among 40 postgraduate students. All were first and second year postgraduate students enrolled for various

disciplines of Bharati Vidyapeeth University Medical College and Hospital, Pune.

Material and Procedures

RNTCP Sensitization Programme was organized as a routine scheduled academic activity of Institute in collaboration with City Tuberculosis Cell, Pune Municipal Corporation, Pune. Faculty members, who had received training from National Tuberculosis Institute (NTI), Bangalore, were appointed as facilitators for this programme. Informed Consent was obtained from participants after explaining the purpose of study and also anonymity of participants was guaranteed.

A pretested self administered structured questionnaire was distributed to all 40 participants. They were asked to complete questionnaire in 20 minutes under strict supervision. All The topics that were taught to participants by use of Jig saw technique were Introduction of RNTCP programme (History, goal and objectives), Organizational structure, DOTS (concept, categories), recent changes in RNTCP guidelines (notification of TB, no. of sputum samples for diagnosis, Nikshay software etc), TB-HIV coordination (CPT prophylaxis, treatment guidelines, intensified TB case finding etc), MDR and XDR TB (definition, diagnosis and treatment details etc.)

Participants were given 'Orientation Session' about application of Jig saw technique. Participants were divided into 5 Jig saw groups with 8 students in each group. One participant from each group was identified as a leader for smooth functioning of group. Each participant in

each group was assigned specific one segment of RNTCP programme and it was ensured that participants had direct access only to their own segment.

All groups were given 20 minutes to read their respective segment. It was followed by formation of temporary 'Expert Groups' by having one student from each jig saw group join other student assigned to same segment. Participants in these expert groups were given another 30 minutes to discuss and refine their main points of segment. The participants then went back to their initial group to present their findings to the other members of the group. Entire activity was conducted with close supervision of the facilitators. The facilitators then evaluated the knowledge of participants by asking questions on same topic. At the end of programme, the same questionnaire was distributed to all participants and responses were collected.

RESULTS

A total 40 medical residents participated in the study with a dropout rate of 5%.

There were 22(57.89%) male and 16 (42.10%) female students with age bracket of 25 to 28 years. First year residents constituted 20 (52.63%) and 18 (47.36%) were of second year. Of 38 residents, 14(36.84%) were from Medicine and 14(36.84%) were from Obstetrics and Gynaecology Department.

Three (7.89%) residents participated from Surgery and Orthopaedics department each. Two (5.26%) residents each were from Ophthalmology and Anaesthesia department each.

Table 1 shows that teaching innovation like 'Jig Saw Technique' did help in improving the

knowledge of study participants and difference was observed to be statistically significant. (t = 12.82, p < 0.001).

Table 1: Mean marks of study participants

| | Mean marks (out of 20) | S.D. | t value | P value |
|-----------|------------------------|------|---------|---------|
| Pre-test | 6.13 | 2.13 | 12.82 | < 0.001 |
| Post-test | 12.10 | 2.10 | | |

DISCUSSION

RNTCP is considered as one of the largest and most important national health programme of India with aim to reduce the chain of transmission of tuberculosis until it ceases to be public health problem. There is strong need for residents from all disciplines to understand basic aspects of this programme like diagnostic and referral strategies, treatment services, communication services etc. Considering this fact, present study was conducted to sensitize residents about RNTCP with innovative teaching methodology i.e. Jig saw Technique.

One of the primary advantages of the Jigsaw Method and most other cooperative learning strategies is that they tend to eliminate competition in the classroom and increase the cooperation among the students (5). Jacobs also stated that it is necessary for students to see each other as collaborators and not as competitors (6)

Jig Saw method was also found to be effective in teaching medical students about medical aspects (7). Laksmi R (8) also reported usefulness of this method in educating nursing students in Oman. However, present study may be the first study

which demonstrated the use of Jig saw Technique in educating postgraduate medical students pertaining RNTCP programme of India.

Table 2: Category of questions with Correct Response (n =38)

| Sr.No | Question | Correct Response | No of participants with correct response in pre-test (%) | No of participants with correct response in post-test (%) |
|-------|---|---|--|---|
| 1 | Full form of RNTCP | Revised National Tuberculosis Control Programme | 14(36.84) | 30 (78.94) |
| 2 | TB is notifiable disease | True | 16 (17.72) | 19 (50) |
| 3 | If the patient has cough of 2 weeks (rather than 3 weeks),sputum examination should be done for diagnosis of TB | True | 18 (47.36) | 22 (57.89) |
| 4 | HIV positive patient having cough of 2 days is also Pulmonary TB suspect | True | 13 (34.21) | 19 (50) |
| 5 | Number of sputum samples collected for examination under RNTCP are | Two | 10 (26.31) | 17 (44.73) |
| 6 | Number of minimum positive sputum samples required for diagnosis of smear positive TB | One | 08 (21.05) | 22 (57.89) |
| 7 | DMC stands for | Designated Microscopy Center | 05 (13.15) | 21 (55.26) |
| 8 | Intermittent regimen for DOTS is less effective than daily regimen | False | 06 (15.78) | 16 (42.10) |
| 9 | Category III is removed from DOTS | True | 07 (18.42) | 20 (52.63) |
| 10 | Under RNTCP,DOTS can be given by family member | False | 08 (21.05) | 25 (65.78) |
| 11 | MDR-TB definition | TB bacilli are resistant to Isoniazide and Rifampicin | 16 (42.10) | 28 (73.68) |
| 12 | XDR-TB definition | MDR-TB + resistance | 17 (44.73) | 32 (84.21) |

| | | | | |
|----|--|---|------------|------------|
| | | to Fluroquinolones + resistance to second line injectable drugs | | |
| 13 | Category IV is treatment for | MDR-TB | 05 (13.15) | 22 (57.89) |
| 14 | Recommended regimen for MDR-TB | Daily | 11 (28.94) | 29 (76.31) |
| 15 | In MDR-TB treatment regimen, minimum continuation phase is for | 18 months | 07 (18.42) | 25 (65.78) |
| 16 | CPT means | Cotrimoxazole Preventive Therapy | 02 (5.26) | 17 (44.73) |
| 17 | Total duration of MDR – TB treatment | 24 months | 11 (28.94) | 23 (60.52) |
| 18 | As per RNTCP, serodiagnostic tests are not recommended for diagnosis of TB | True | 11 (28.94) | 21 (55.26) |
| 19 | Under RNTCP, guidelines for XDR-TB treatment with Cat V regimen have been formulated | True | 10 (26.31) | 17 (44.73) |
| 20 | Under RNTCP, there is provision of PG Dissertation/Thesis grant of | Rs 30000 | 19 (50) | 22 (57.89) |

Even though the post test score of participants was more, pre-test score indicates very poor knowledge of participants regarding certain aspects of tuberculosis like CPT, MDR-TB, organization structure of RNTCP, Intermittent regimen of DOTS etc.(Table 2).

It reiterates the need for sustained training of post graduate students for this crucial national health programme.

Traditional lecture method need to be replaced by various interactive teaching methodologies like Jig Saw Technique, Think –Pair- Share method, Explain to New Comer Method, Brainstorming exercises etc in order to create strong learning environment among students.

CONCLUSION

The present study revealed inadequacies in the knowledge of tuberculosis amongst medical residents prior to application of Jig Saw technique. Simple interactive teaching methodology like Jig saw Technique can make significant gain in knowledge of medical residents pertaining tuberculosis and RNTCP programme of India.

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