Original Research Article

One-minute preceptor: A novel teaching method in teaching pulmonary neoplasm in radiology

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Abstract

Objective: The study was designed to observe the effectiveness of one minute preceptor in teaching radiology. **Materials and methods:** A total of forty students were included in the study after obtaining the written informed consent. The study participants were randomly assigned into two groups that is OMP and traditional teaching groups. Pretest was conducted before and OMP implemented to OMP group and traditional teaching was implemented to other group. A posttest was implemented. **Results:** Results are presented in table no 1 to 4. There was significant improvement in the pre-test and post test scores of MCQ and viva voce in the OMP group. There was significant improvement in the pre-test and post test scores of MCQ in the traditional teaching group. Pre-test and post test scores of viva voce was not significantly different in the traditional teaching group. Post-test scores of MCQ and viva voce in OMP and traditional teaching groups were significantly different. **Conclusion:** The present study provides further evidence for implementation of OMP in teaching radiology. The study highlights the need to continue further research in this area to recommend the implementation of the OMP in the curriculum.

Key Words: Radiology, Medical, Clinical teaching, One Minute Preceptor.

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INTRODUCTION

Radiology is the subject which uses the medical imaging techniques to diagnose and to manage several diseases. The imaging techniques includes X-ray radiography, ultrasound, computed tomography (CT), nuclear medicine including positron emission tomography (PET), and magnetic resonance imaging. Teaching radiology is one of the toughest tasks for clinical doctors as the subject is very vast and need multiple approaches to make one to understand. As radiology helps to diagnose the condition, the student must be expertise in interpretation of the images. In recent years, there was a drastic change in the medical education which made the teaching from active learning and learner centered. Though there are several methods for clinical teaching, one of the most accepted and reliable method is one-minute preceptor, which is abbreviated as OMP.[1-3] This method emphasizes on improvement of reasoning skills in clinical teaching. Though it is mainly developed for clinical teaching, it can also be applied for non-clinical teaching.[4] It comprises of five micro skills which motivates the critical thinking of the learners.[5]The study was designed to observe the effectiveness of one-minute preceptor in teaching radiology.

MATERIALS AND METHODS

Study design: Experimental study.

Study setting: The study was conducted at Department of Radiology, Vishwabharathi Medical College, Andhra Pradesh.

Study participants: A total of forty students were included in the study after obtaining the written informed consent. Healthy and willing participants within the age group of 20-26, with no prior experience about the OMP

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were included in the study. Unwilling participants were excluded from the study. The study participants were randomly assigned into two groups that is OMP and traditional teaching groups.

Study methodology: The topic selected was diagnosis of pulmonary neoplasm through x-ray. A pre-test was conducted prior. This test consists of MCQ questions on pulmonary neoplasm and viva. The maximum marks for MCQ was 20 and for viva voce was 10. The OMP group participants were subjected to the orientation program about the OMP. Then the OMP was implemented as mentioned in the literature. Traditional teaching was performed to the students in the traditional teaching group. Post test was conducted to observe the understanding of the students.

Ethical Considerations: The present study was approved by institutional ethical committee. Informed consent was obtained from all the participants.

Data analysis: The difference in the scores of pre and post test was obtained and analyzed by using SPSS 20.0 version. Student t test was applied to observe the significance of difference between the groups. P value less than 0.05 was considered as significant.

RESULTS

Results are presented in table no 1 to 4. There was significant improvement in the pre-test and post test scores of MCQ and viva voce in the OMP group (table 1). There was significant improvement in the pre-test and post test scores of MCQ in the traditional teaching group. Pre-test and post test scores of viva voce was not significantly different in the traditional teaching group (table 2).Pre-test scores of MCQ and viva voce in OMP and traditional teaching groups (table 3). Post-test scores of MCQ and viva voce in OMP and traditional teaching groups were significantly different (table 4).

Table 1: Pretest and post test scores of MCQ and viva voce in OMP group

Parameter	Pre-test	Post-test	P value
MCQ	12±0.67	17±0.45	<0.0001***
Viva voce	4±0.45	7±0.22	<0.0001***

Table 2: Pretest and post test scores of MCQ and viva voce in traditional teaching group.

Parameter	Pre-test	Post-test	P value
MCQ	10.87± 0.54	13.18± 0.61	0.0078**
Viva voce	3±2	4±1	0.0527

Table 3: Comparison of pre-test scores of MCQ and viva voce in OMP and traditional teaching groups

Parameter	Pre-test traditional	Pre-test OMP	P value
MCQ	10.87± 0.54	12±0.67	0.1970
Viva voce	3±2	4±0.45	0.6285

Table 4: Comparison of post-test scores of MCQ and viva voce in OMP and traditional teaching groups

Parameter	Post-test traditional	Post-test OMP	P value
MCQ	13.18± 0.61	17±0.45	<0.0001***
Viva voce	4±1	7±0.22	<0.0057**

DISCUSSION

In the field of medical education, there is a drastic change in the current era. Hence, it is the need of the time to consider change in the methodology of teaching in accordance to meet the needs of the students of present generation. In the traditional teaching, the student participation is less and it is called teacher centered as teacher only talks in the class and the students will just sit like a passive listeners.[7] OMP is one of the recent technique in the methodology of teaching medical sciences. Earlier studies proved the effectiveness of the OMP in teaching clinical subjects when compared with the traditional teaching.[7,8] Further OMP teaching is not limited to teaching in the clinical subjects but also in the basic sciences like anatomy and pathology as well.[9,10] The importance of the OMP is the micro skills which provokes the critical thinking skills of the students.[11] However, there were few studies which reported use of OMP in basic sciences are limited.[12,13] Though the effectiveness of the OMP was proved by multiple studies in the western countries, the number of studies in the Indian scenario was limited.[14] The present study was undertaken to observe the effectiveness of OMP in the field of radiology. There was a significant improvement in the performance of the students in the MCQ and the viva voce as well. Our study supports results of earlier studies in the implementation of the OMP in teaching the radiology as well along with other clinical subjects.

CONCLUSION

The present study provides further evidence for implementation of OMP in teaching radiology. The study highlights the need to continue further research in this area to recommend the implementation of the OMP in the curriculum.

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