

Introduction of Innovative Teaching of Clinical Anatomy by Demonstrating Clinical Anatomy Based Topics in Dissection Theatre for I Year MBBS Students

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ABSTRACT

Introduction: Multimedia learning has been demonstrated to be effective in medical education. The means to share teaching materials have grown considerably over the years, especially with the multitude of internet channels available to educators. The aim of this study to evaluate the effectiveness of video-demonstration and PowerPoint method of clinical based topics in dissection theatre for first year MBBS students.

Method: This interventional study was conducted among first year MBBS students of JSS University Mysore for a period of three months. A self-administered questionnaire was given to two groups of 40 each of Power point and Video demonstration method of teaching. Learning was assessed with written examinations and responses were linked to students performances in dissection theatre.

Results: Participants rated their responses on four point liker scale. Maximum scores was obtained for video demonstration method.

Conclusion: The present study confirms the overall positive impact of clinical videos on student learning of clinical Anatomy

Key words: Clinical anatomy, dissection, video demonstration; IMBBS Students

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“to capitalize on the ability of moving images to teach procedures requiring skilled techniques and specialized physical examination³. The present study aims to evaluate the effectiveness of video-demonstration and PowerPoint method of clinical based topics in dissection theatre for first year MBBS students

INTRODUCTION

Teaching of gross anatomy by traditional dissection remains a central element in most medical programs worldwide. However modern didactic concepts demand the integration of clinical content in preclinical settings. Accordingly, video demonstrations of clinical based topics have shown to improve learning of Clinical Anatomy and medical students appreciate the availability of such learning resources.¹ There have been challenges in medical schools to reform their curriculum on clinical skills as it requires a great deal of resources. As a response to this issue, e-learning has been adopted in Indian medical schools. Research shows that e-learning is effective in supporting clinical education. Students learn effectively from multimedia instructions, and they are of particular importance for medical education². Furthermore, educational videos afford us

MATERIAL AND METHOD

This interventional study was conducted with 80 volunteers of I year MBBS Students age ranging (17-20 yrs) in Department of Anatomy, JSS Medical college. Institutional ethical committee clearance was obtained to conduct this study. They were assigned into two groups of 40 each as video demonstration and PowerPoint method. All subjects were given pretest and posttest questionnaire of three different clinical based topics (shoulder joint, knee joint and inguinal canal & hernia). Subjects of video demonstration and PowerPoint methods were asked to perform dissection of particular topics Learning was assessed with written examinations and responses were linked to students performances in dissection theatre.



Image 1: Dissection theatre in Department of Anatomy, JSS Medical College



Image 2: showing power point demonstration



Image 3: showing dissection of concerned topics of participant students

STATISTICAL ANALYSIS

The data was analyzed using SPSS version 22. Initially descriptive statistics like Mean, SD were calculated for pre and post tests of all three topics. Unpaired test was done to know the significance between two methods.

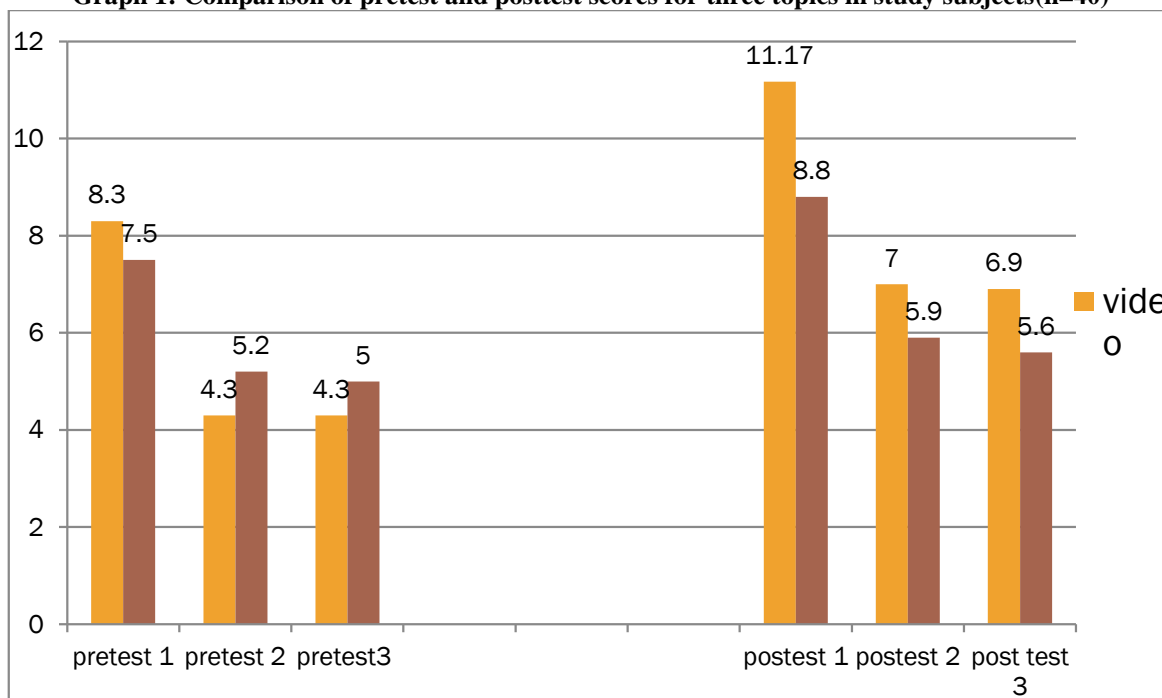
RESULTS

Among 80 students included in the study, majority 65 (81.2%) were in the age group of 18-19

years and there was equal number of Males and Females in each group.

In pre test there was no significant difference of scores between two intervention methods across all three topics. Whereas following intervention, there was significant difference in post test scores between Power point presentation group and video demonstration method groups across three topics under study. (Graph 1)

Graph 1: Comparison of pretest and posttest scores for three topics in study subjects(n=40)



Comparison of overall pre and post test scores in individual groups, it was observed that, there was significant increment in post test scores in both, Power point and video demonstration method groups, whereas there mean increment in scores was more among the students who had received video demonstration method. When we compared the post test scores between two methods, it was seen that, the mean score was significantly higher among the students who had received video demonstration compared to those who had received power point presentation.

Table 1: Paired sample t test of all the three topics.

Method	Mean	S D	p Value
Pretest video	5.64	2.52	0.000
Post test video	8.37	2.47	
Pretest ppt	5.95	2.32	0.001
Posttest ppt	6.80	2.48	

Mean of posttests were higher compared to pretests, p value showed significant difference in both the methods (n=40)

Table 2: Unpaired t test of two methods

Method	Mean	t value	p value
Power point	12.7	4.913	0.001
Video demonstration	13.97		

p value showed significant difference in posttest of video demonstration method (n=40)

Feedback from the participant students

- Participants rated their responses on four point liker scale ranging from 4 Excellent, 3 Very good, 2 Good, 1 Average.
- 28 students (70%) rated Excellent, 8 students (20%) opined Very good, 4 students opined as good for video demonstration
- 24 students (60%) 6 students (15%) rated Very good , 6 students(15%) rated Good and 4 students rated average(10%) for Power point method
- Maximum scores was obtained for video demonstration method

DISCUSSION

The present study showed higher mean values in posttests of both methods. unpaired t test showed significant difference in video demonstration method. Jang HW, Kim KJ studied the use of online clinical videos for clinical skills training for medical Students. A 30-items questionnaire was administered

to investigate student use and perceptions of OSCE videos. Year 3 and 4 students from 34 Korean medical schools who had access to OSCE videos participated in the online survey. Additionally, a semi-structured interview of a group of Year 3 medical students was conducted for an in-depth understanding of student experience with OSCE videos. The number of OSCE videos that the students viewed was moderately associated with their self-efficacy and preparedness for OSCE ($p < 0.05$). They confirmed the overall positive impact of OSCE videos on student learning of clinical Skills.¹

Barker SP studied comparison of video-disc demonstration and lecture demonstration method for physiotherapy students. Preprofessional physical therapy students were divided into three groups that received videodisc, lecture-demonstration, or no instruction. Learning was assessed with written examinations and performance analyses. The results showed that interactive videodisc instruction was as

valuable as lecture-demonstration in teaching a particular psychomotor skill.⁴

Khogali SE and others studied about integration of e learning resources into medical school curriculum, 96% of students rated e-learning resources as probably or definitely of value particularly interactive activities, video clips and self assessment exercises.⁵ Goemley GJ and others assessed undergraduate medical students about attitude and accessibility towards e-learning in basic skills education. A self administered questionnaire was developed and responses were linked to students performance in a skills OSCE. Students who displayed deep learning traits when using e-learning, performed better in clinical skills OSCE. Students rated e-learning just as highly as other traditional methods of clinical skills teaching and acknowledge its integration in a blended approach.⁶

As educational videos are being published in peer-reviewed journals and live streaming of surgical demonstrations are gaining popularity, there are increasing efforts to integrate interactive tools – i.e., social networking services - into such environments.⁷

CONCLUSION

Clinical videos are valuable tools in increasing the coherence between preclinical and clinical parts of medical education programs. Video demonstration can be effective method of communicating the concepts compared to PowerPoint method. It is recommended that best practices in making use of clinical videos in dissection theatre for clinical based topics should be implemented for I year MBBS students.

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CONFLICT OF INTEREST

The authors declare no conflict of interest concerning the materials or methods used in this study.

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