

Comparative study between effectiveness of video-assisted teaching program vs bedside demonstration of obstetric palpation as a teaching tool for medical students

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Abstract

Background: With increasing work load and increasing student: teacher ratio there is a need for new teaching learning methods to teach the students. So this study decided to evaluate the effectiveness of video assisted teaching as compared to bedside traditional teaching. could video assisted teaching be incorporated regularly in the new curriculum **Objectives:** To Compare the effectiveness of Video assisted teaching program versus traditional bed side demonstration program for teaching obstetrical palpation. To assess student perception about the use of video assisted teaching programme as a teaching tool **Study design:** quasi experimental study Study population- 6th semester obg students posted in obg department labor room **Method:** 60 students of sixth semester are divided into batches of 10 students i.e. 6 batches. All students are given a reference numbers. Each batch of 10 students are divided into two group of 5 each. 5 are taught obs palpation by video and 5 students are taught by bedside demonstration. Therefore the total number of intervention and assessment are six Comparison of skill scores of experimental group with control group will be done by mean, and independent sample 't' test. Perception of students to both the teaching methods is assessed using likert scale **Result:** scores were significantly better in video assisted group as compared to traditional bedside teaching. All students found the new method interesting **Conclusion:** Video assisted teaching can be adopted as a new teaching method for selected topics. . Moreover a blended teaching approach can be adopted by giving a bedside demonstration of core skill which shall be reinforced by the standardized video

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instructional process leave no choice to education but to review its practices and to make the major changes necessary for today's world. New methods and materials of instruction, new demands for different and increasing teaching skills are crowding in on every side.¹ With increasing work load and increasing student: teacher ratio there is a need for new teaching learning methods to teach the students.

OBJECTIVES

Compare the effectiveness of Video assisted teaching program versus traditional bed side demonstration program for teaching obstetrical palpation. To assess student perception about the use of video assisted teaching programme as a teaching tool

INTRODUCTION

Education is the first- line defence in the present-day world with all its revolutions. The expanding knowledge in many fields with its modifying effect on the curriculum and the advancing technologies with their effect on the

MATERIAL AND METHODS

Study design: The study was quasi-experimental design.

Study Setting: The study was conducted mount Zion medical college, adoor, in obs and gyn department demo room for experimental group i.e. video assisted teaching and antenatal ward for the control group i.e. bedside demonstration

Study population- 6th semester obg students posted in obg department labor room.

Sample size: 60 students posted on obg department labor room posting belonging to 6th semester.

Inclusion criteria: 6th semester students posted in obg department between March 2021 to May 2021.

Exclusion criteria: students not willing for giving consent for the study.

Study tools: validated video of obstetric palpation - OSCE Score sheet - Likert scale feedback form to study perception.

Study duration: March 2021 to May 2021.

Methodology: The study proposal had been put forward to IRB of the institution and clearance obtained 60 students of sixth semester are divided into batches of 10 students i.e. 6 batches.

All students are given a reference number Each batch of 10 students are divided into two group of 5 each. 5 are taught obs palpation by video and 5 students are taught by bedside demonstration. Therefore the total number of intervention and assessment are six It is a 20 min validated video by University of London, King’s College London Medical School for 5 of each batch Similarly bedside teaching is conducted for rest 5 of each batch. After each session students are assessed by OSCE immediately and after two week for recall capability with the help of score guide which was validated in the obstetrics and gynecology department All the teaching and assessment has been done by the same faculty A feedback is also obtained from the students of their view on video assisted teaching and bedside teaching using Likert scale in a form.

After the study there will be a crossover of the methods to avoid ethical issues

Data analysis: Comparison of skill scores of experimental group with control group will be done by mean, and independent sample ‘t’ test. The data will be presented in the form of tables Perception of students to both the teaching methods is assessed using likert scale.

RESULT

The results has been consolidated into tables.

Total 60 students were divided into experimental group(video assisted teaching) and control group (traditional bed side)

Table 1: Comparison between the effectiveness of video demonstration and clinical demonstration at the end of teaching by osce

Group	N	Mean	SD	T-value	P-value
Video demonstration	30	98.30	0.70	9.51	.001
Clinical demonstration	30	84.60	7.85		

Independent sample t test, p<0.05 considered as statistically significant

Table 1 shows the comparison of video assisted teaching and clinical demonstration by immediate assessment after the teaching program. The mean score of group who received video assisted teaching was 98.30±.70 and clinical demonstration was 84.60±7.85. The difference observed in the average scores between groups was highly statistically significant p=0.001; t value 9.51 (p<0.05).

Table 2: Comparison between the effectiveness of video assisted teaching program and clinical demonstration of the examination of the end of two weeks

Group	N	Mean	SD	T-value	P-value
Video demonstration	30	74.77	8.92	7.33	.001
Clinical demonstration	30	56.13	10.67		

Independent sample t test, p<0.05 considered as statistically significant

Table 2 shows the comparison between video assisted teaching program and clinical demonstration two weeks after the teaching program. The mean score of group who received video demonstration was 74.77±8.92 and clinical demonstration was 56.13±10.67. The difference observed in the average scores between groups was highly statistically significant p=0.001 t value 7.33(p<0.05).

Table 3: Comparison between immediate assessment and assessment after two weeks in video demonstration

Group	N	Mean	SD	T-value	P-value
Immediate assessment	30	84.60	7.85	11.13	.001
Assessment after 2 weeks	30	56.13	10.67		

Paired sample t test, p<0.05 considered as statistically significant

Table shows comparison of outcome of video demonstration immediately after the teaching programme and outcome after two weeks. The mean score obtained in the immediate assessment was 84.60 ± 7.85 and it reduced to 56.13 ± 10.67 after two weeks. It seems that the difference observed from immediate assessment to assessment after 2 weeks point was highly statistically significant ($P < 0.05$).

Table 4: Comparison between immediate assessment and assessment after two weeks for clinical demonstration group

Group	N	Mean	SD	T-value	P-value
Immediate assessment	30	98.30	.70	14.63	.001
Assessment after 2 weeks	30	94.77	8.92		

Paired sample t test, $p < 0.05$ considered as statistically significant

Table shows comparison of outcome of clinical demonstration immediately after the teaching programme and outcome after two weeks. The mean score obtained in the immediate assessment was 98.30 ± 0.70 and it reduced to 94.77 ± 8.92 after two weeks. It seems that the difference observed was highly statistically significant ($P < 0.05$).

Table 5: Likert scale of video assisted teaching of obs palpation

Serial number	Parameter	Strongly agree	Agree	neutral	disagree	Strongly disagree
1.	This session was interesting	13(43.3%)	17(56.7%)			
2.	Understood concepts	2(6.7%)	12(40%)	10(33.3%)	6(20%)	
3.	Doubts were clarified		3(10%)	5(16.7%)	15(50%)	7(23.3%)
4.	Useful in examination	8(26.7%)	13(43.3%)	5(16.7%)	4(13.3%)	
5.	All clinical skills should be taught like this		6(20%)	5(16.7%)	19(63.3%)	
6.	Helps to retain in memory	12(40%)	9(30%)	9(30%)		
7.	Overall this method was effective and beneficial to me	7(23.3%)	13(43.3%)	10(33.3%)		

Video assisted learning 100% of students agree that the session is interesting. 47% understood concepts. 73% disagreed that doubts were clarified. 67% students found it useful in exam. Only 20% agreed that all skills have to be taught like this. 70% agreed that this method helps in retaining memory. and 66% students opine that this is a very effective and beneficial method

Table 6: Likert scale- clinical demonstration of obs palpation at bed side

Serial number	Parameter	Strongly agree	Agree	neutral	disagree	Strongly disagree
1.	This session was interesting	10(33.3%)	19(63.3%)	1(3.3%)	0(0%)	0(0%)
2.	Understood concepts	14(46.7%)	16(53.3%)			
3.	Doubts were clarified	22(73.3%)	8(26.7%)			
4.	Useful in examination	14(46.7%)	16(53.3%)			
5.	All clinical skills should be taught like this	6(20%)	20(66.7%)	4(13.3%)		
6.	Helps to retain in memory	1(3.3%)	14(46.7%)	10(33.3%)	5(16.7%)	
7.	Overall this method was effective and beneficial to me	9(30%)	18(60%)	3(10%)		

96% students have found the bedside demonstration classes interesting. 100% students understood concepts, could clarify the doubts and found it useful in exams. 87% would like all skills to be taught like this. 17% found this method not useful for retaining in memory. 90% found this method effective and beneficial. After doing a cross over of both the methods after the study an opinion was taken again and all the 60 students (100%) voted for a blended method i.e. bedside followed by video assisted teaching program though it was not a part of the study.

DISCUSSION

This interventional study evaluated the effectiveness of the video demonstration as a teaching method for a core clinical skill i.e. obstetric palpation. Findings of our study show that students of traditional and video-assisted teaching groups performed well immediately after the the

teaching but the intervention was effective in increasing the psychomotor skills of students as evidenced by increased OSCE scores in the intervention group i.e. video assisted teaching group. Video demonstration can be a valuable tool for teaching procedural skills for undergraduate medical students as it provides an engaging learning experience, enhanced retention, and

reproducibility in learners. Similar to our findings, increased clinical skills outcome and satisfaction has been shown with video-based teaching by the following studies. Padmavathi R *et al.* study regarding Video demonstration as a teaching-learning method for a core clinical skill among undergraduate medical students also showed better performance in the video assisted teaching group.⁴ This is similar to my study. Hansen *et al.* have shown that video-based education helped students to learn and reproduce clinical skills better because of simultaneous processing of both auditory and visual information during video demonstrations⁶ Subhash *et al.* demonstrated that multimedia enhanced teaching activity using animated PPTs for physiology practical skills training was effective in increasing the knowledge and psychomotor skills among the learners⁷ similar to the perception of this study Atul *et al.* study showed that there was significant increase in scores after of video assisted learning intervention in all groups, p value is <0.001 The students gave a positive feedback about video assisted learning.¹ This is similar to my study. Jang and Kim *et al.* proved the positive impact of online OSCE videos in learning clinical skills among medical students, as participants felt that the video clips were rich learning resources.⁸ Scaria *et al.* shows that there was significant difference in the pre and post test knowledge scores within experimental i.e video assisted teaching group and control groups i.e traditional teaching for antenatal examination at 0.001 level of significance there was gain in knowledge in all areas in both the groups.⁹ However contrary to my study Roshini *et al.* showed that the post-test scores were not improved by the video assisted teaching as compared with the traditional method indicating that traditional demonstration has impact which is noninferior to video assisted teaching in improving the skill (p- 0.35028).¹⁰ Hilal *et al.* study of comparison of video demonstration versus hands-on training of medical students for vacuum delivery using objective structured assessment of technical skills also provide supportive data for effective clinical skill teaching using hands-on demonstrations over video-based training for “vacuum extraction on a pelvic model” i medical students¹¹ contrary to the findings of my study. In a cross over study, Ramlogan S, Raman V, Sweet J *et al.* compared the knowledge and skill attained by third-year dental

students in three clinical exercises in periodontology through video and live lecture Students preferred video and liked it to be integrated in the lecture rather than as a substitute for the lecture¹²

George *et al.* in his study Comparison of video demonstrations and bedside tutorials for teaching paediatric clinical skills to large groups of medical students in resource-constrained settings shows that **staff and students want video demonstrations to supplement rather than replace bedside teaching**¹³

Sarker *et al.* declared that for video lecture to be effective, they must be accepted and used by students. They must provide an enjoyable or at least satisfactory learning experience, be perceived by students as providing a time-efficient study resource and / or be perceived as improving understanding and grade performance. This is in compliance with the perception of my study¹⁴

The following limitation of the study are acknowledged–

Larger sample size could have been better
A third group with hybrid of both traditional and video teaching could be incorporated.
Various demographic variables could be included.

CONCLUSION

This paper tries to explore in depth the value of video itself for education purposes In Medical Education Video assisted learning is a strong tool and teachers should incorporate it to explain complex procedures and ideas to students. Clinical skill training, using video demonstration was found to be useful in developing basic clinical skill among medical undergraduates. Standard video-based materials for clinical skill demonstrations can help in teaching as well as during revision practices before examinations. This will ensure consistency, uniformity, and standardized approach to develop physical examination skills among undergraduate students. Whichever method is used for teaching but it is essential to emphasize the importance of performing each step as steps of procedure are important for skill development. Moreover a blended teaching approach can be adopted by giving a bedside demonstration of core skill which shall be reinforced by the standardized video.

Concept map

Intervention	Activity	Outcome
Effectiveness of Video-assisted Teaching Program versus bedside Demonstration of obstetrical palpation as a teaching tool for medical students	Synopsis IRB approval Intervention Statistics Analysis.	Publication Including the new TL method into the curriculum.

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