



TEACHING EPISIOTOMY TO THE INTERNS: A COMPARATIVE STUDY OF TWO METHODS

Obstetrics & Gynaecology

Dr Lola Ramachandran*

Professor, Dept of Obstetrics & Gynaecology, Jubilee Mission Medical College & RI, East Fort, Thrissur-680005. *Corresponding Author

Dr Deepthi K D Nair

Senior Resident, JMMCH & RI, Thrissur.

ABSTRACT

Background: Interns should be taught episiotomy suturing before starting their labour room posting in order to avoid the various complications associated with it. There are two methods which can be used, namely the sponge model method and the animated video method. This study attempts to find out which of these two is a better method. An attempt has also been made to find out the perceptions of the students regarding the two teaching methods.

Objectives: 1. To know whether episiotomy suturing taught using an animated video is better than one taught using a sponge model. 2. To know the perceptions of the students regarding the two methods.

Study Design: Prospective randomized interventional study

Methods: The consenting interns posted in the department of obstetrics & Gynecology were divided into two groups using a lottery method. Group A was shown how to suture an episiotomy using a sponge model. Group B was shown an animated video of episiotomy suturing. After that both groups were asked to perform an episiotomy suturing on a mannequin. This was observed by a faculty member using a checklist and marks awarded. Then the groups were interchanged and the process repeated. Finally the interns were given a feedback form to record their perceptions regarding the two methods on a five point Likert scale.

Results: The mean marks obtained by each group were compared by an unpaired 'T' test. Sponge model method was found to be superior.

KEYWORDS

Episiotomy repair, Undergraduate skill teaching, labour room skills

INTRODUCTION:

Traditionally interns were never taught episiotomy suturing before they entered their labour room posting. It was "see a few, assist one or two, perform one with assistance and then do it on your own with remote assistance from the postgraduate student on duty". This led to a few problems like an increase in the time taken by the beginner with the resultant increase in blood loss as well as an increase in the number of episiotomies which ended up with complications like hematomas or wound dehiscence. Sometimes evacuation of hematomas under general anaesthesia were required and sometimes packed cell transfusions too. In other words, maternal morbidity was certainly more when an undertrained intern is suturing an episiotomy especially in busy labour rooms.

So it would be better if the interns were taught the proper method of suturing before they started doing it. There are two methods which can be used. One method is showing them suturing on a sponge model. Another is to show them a video of the procedure. I wanted to compare these two methods to see which is better so that we can adopt it in our department.

Review of Literature:

E learning is presently being used extensively in all fields of medical education. Dhir et al in their article "E- Learning in Medical Education in India" published in 'Indian Paediatrics' concluded that E Learning is presently used widely in all fields of education and also in medical education¹. Their review introduced the concept of E-learning and discussed its need and scope in medical education in India. Experience shows that students and faculty are mostly in favour of adopting E-learning side by side with traditional learning and the advantages far outweigh the likely discomfort associated with adoption of the new method.

Anne Hermann-Werner et al² in their RCT "Best Practice Skills Lab Training VS...a "See one, Do one" approach in undergraduate medical education: an RCT on students' long term ability to perform procedural clinical skills concluded after a prospective randomized controlled trial to investigate whether in a simulated setting students trained according to a best practice model (BPSL) perform two skills of different complexity (nasogastric tube insertion, (NGT); intravenous cannulation, (IVC) better than students trained with a traditional "see one, do one" teaching approach (TRAD) at follow up of 3 or 6 months². They concluded that within a simulated setting BPSL is significantly more effective than TRAD for skills of different complexity assessed immediately after the training and at follow-up. The advantages of

BPSL training are seen especially in long term retention.

Fredrike Lund et al conducted a randomized controlled trial to investigate the effectiveness of IV cannulation skills lab training and its transfer to clinical practice and came to the conclusion that transfer of IV cannulation related skills acquired in a skills lab is superior to bedside teaching when rated by independent video raters by means of integrated procedural protocol Instrument & Binary Checklists³. They concluded that it enabled the students to perform IV cannulation more professionally on volunteer students acting as patients. Rated by patients, students' performance and patient- physician communication did not differ significantly between groups. Peter E Nielsen et al undertook a study to estimate the reliability and validity of an objective structured assessment of technical skills (OSATS) for midline episiotomy repair using a life-like anatomic model and concluded that episiotomy OSATs that used task specific and global checklists provide a reliable and valid method of assessing resident skills in an anatomic model and performance correlates with resident year level of training⁴.

Research Question:

Whether episiotomy taught using an animated video is better than using a sponge model to show the repair.

Objectives

1. To know whether episiotomy suturing taught using an animated video is better than one taught using a sponge model.
2. To know the perceptions of the interns regarding these teaching methods.

Methodology

Study Design: Prospective, randomized, interventional study.

IRB approval No: 02/21/IEC/JMMC & RI dated 05/01/2021

Sampling: The interns who were posted to the department of O & G and ready to give informed consent were divided into two groups by drawing lots.

Study Tools: 1. Informed consent form.

2. Animated video of episiotomy suturing
3. Sponge model of an episiotomy
4. OSCE Checklist
5. Feedback form.

Study Population:

Interns posted to the department of O & G from December 2020 to

September 2021. We get 15 interns every two months. Out of that 8 will be posted to the labor room and 7 will be posted in the wards for the first month and after that first month the groups will be interchanged. I intended to take the interns just before they start their labor room posting. Due to the lag due to Covid pandemic only 45 interns could be enrolled instead of the expected 60. Out of them one intern did not fill all the answers in the feedback form and had to be excluded. So we had only 44 interns in the study population.

Group 1 was shown an episiotomy repair using a sponge model. Group 2 were shown an animated video of an episiotomy repair. After that they were asked to perform an episiotomy repair on a mannequin. This was assessed using a checklist by an independent member of the faculty who did not know to which group the intern belonged. At the end, for ethical purposes, the groups were interchanged and the two methods were shown. Then a feedback form in the form of a Likert scale was given to the interns who had to complete and return it then and there. A total of 3 exposures only could be carried out. The results were then tabulated and analyzed using SPSS Version 21.

The Statistical Methods Used:

The results were analyzed using IBM SPSS version 25. Numerical variables were expressed as mean and standard deviation and categorical variables were expressed as frequency and percentage. To compare the statistical significance difference of mean values of the checklist marks between the two methods Mann Whitney U test was applied. To compare the checklist scores of the two groups - unpaired t test; Perception questionnaire with Likert's scale - expressed as percentages.

RESULTS

Coming to the characteristics of my subjects, as shown in Fig 1, 23(54.8%) were males and 19(45.2%) were females.

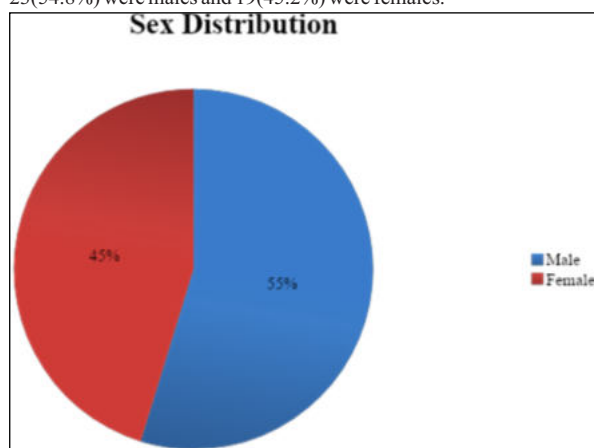


Figure 1 Sex Distribution of Study population

As shown in fig 2, 85.7% were exposed to suturing earlier when they were posted in General surgery. 38.1% claimed they had been exposed to episiotomy suturing earlier, probably during their internment period in the labor room. None had performed or sutured an episiotomy earlier.

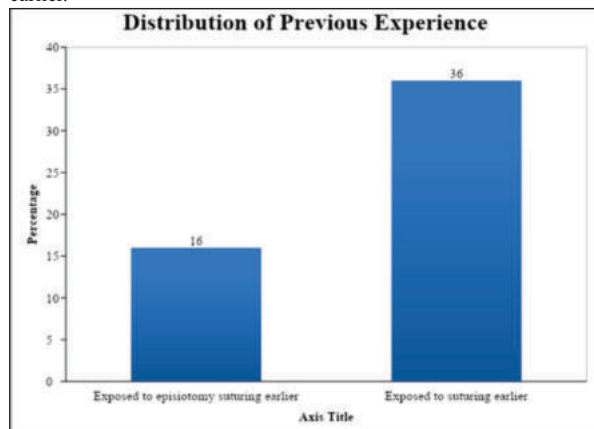


Fig 2 Distribution Of Previous Experience

Coming to the results of the assessment checklist which was used to assess the students' performance, the mean score was 4.71 and median score was 5 in the students who were taught using the sponge model method (Table 1). In the students who learnt from the video the mean score was 2.62 and the median score was 3. So the difference is statistically significant.

Table 1 Assessment Scores Obtained

Methods	N	Assessment Score			Mann Whitney U Value	p Value
		Mean	SD	Median (IQR)		
Sponge	21	4.71	0.72	5 (5-5)	30.50	<0.001
Video	21	2.62	0.97	2 (2-3)		

When we come to the perceptions of the students, as depicted in Table 2, 35.7% of the interns strongly agreed that learning on real patients will be good while 33.3% were of the strong opinion that learning on a mannequin will be good. Only 4.8% strongly felt that video will be good for learning while 23.8% felt strongly that the sponge model was good for learning. 16.7% strongly felt that both were not good for learning.

Table 2. Perceptions Of The Interns Regarding The Teaching Tools

	Strongly Agree n (%)	Agree n (%)	Unsure n (%)	Disagree n (%)	Strongly disagree n (%)	Total
Sponge model method good for learning	10 (23.8)	16 (38.1)	4 (9.5)	12 (28.6)	0 (0.0)	42
Learning from video is good	2 (4.8)	11 (26.2)	19 (45.2)	9 (21.4)	1 (2.4)	42
Both are not good	7 (16.7)	5 (11.9)	4 (9.5)	12 (28.6)	14 (33.3)	42
Learning on a mannequin will be good	14 (33.3)	12 (28.6)	2 (4.8)	7 (16.7)	7 (16.7)	42
Learning on real patients will be good	15 (35.7)	9 (21.4)	3 (7.1)	3 (7.1)	12 (28.6)	42

DISCUSSION:

In just a few years, e-learning has become part of the mainstream in medical education. While e-learning means many things to many people, at its heart it is concerned with the educational uses of technology⁵. There are three stages in the process of teaching and learning clinical skills: demonstration; practice; feedback.

Both task specific and global rating scales applied to a variety of gynecological procedures have demonstrated excellent validity and reliability in evaluating residents' surgical skills by using both blinded and unblinded examiners⁴.

In an earlier study conducted on nursing students, video clips were perceived as the most useful feature while online readings were viewed as the least useful⁵. This is in contrast to my study where the sponge model method was found to be more useful and perceived also as such by the students. The videos available on the internet were actually animated ones and not of the real procedure and that may be one reason why the interns did not find it very useful. Since only a small percentage 16.7% of students felt strongly that both the methods were not good, we can conclude that teaching of episiotomy repair with one of these methods will be useful before they actually start practicing on real patients.

Nevertheless, the included evidence from the highest quality studies, as well as from those of lower quality, indicate that non-networked computer based learning can be equivalent to, and perhaps even superior to, traditional learning in terms of knowledge and skills gained. Thus, computer based learning is likely to be a convenient and possibly also more cost effective alternative to traditional learning that could help increase the health-care workforce globally⁷. Our results suggest that offline eLearning is equivalent and possibly superior to traditional learning regarding knowledge, skills, attitudes and satisfaction. Although a robust conclusion cannot be drawn due to variable quality of the evidence, these results justify further investment into offline eLearning to address the global healthcare workforce shortage⁸. The current evidence base suggests that online eLearning is equivalent, possibly superior to traditional learning. These findings

present a potential incentive for policy makers to cautiously encourage its adoption, while respecting the heterogeneity among the studies⁹.

In diverse medical education contexts e-learning appears to be as effective as traditional instructor led methods. Students do not see e-learning as replacing traditional instructor led training but as a complement to it. So we should develop infrastructure to support e-learning like digital libraries. E- Learning also presents numerous research opportunities for the faculty.¹⁰

Skill training is an essential part of UG training according to NMC and Episiotomy suturing is one of the essentially certifiable skills. Skills can be taught by bedside demonstrations, at skill labs using simulated patients or mannequins or by video demonstrations. Many studies have used video based approaches to teach skills to students.

Limitations

One of the main drawbacks of this study is the small number of students that could be enrolled in the study. Also, a pretest to know their level of proficiency before teaching had not been conducted. The crossover was done only for ethical reasons and hence there is no assessment or analysis of that. A repeat OSPE with a checklist after a few days to see how much of the skill is retained would have given some more information but it could not be done because the students had already started seeing and assisting episiotomies by that time.

CONCLUSIONS:

The study concluded that the Sponge model method of skill training is a better method when it comes to teaching Episiotomy suturing skill to interns. It is very well accepted by students and saves time as well as effort. It is also very cost effective. Hence it can be concluded that this method should be part of skill lab training for undergraduates in obstetrics & Gynecology.

The indirect implication is that all medical colleges should be equipped with good skill labs. If one college cannot afford the high cost of setting up a well equipped skill lab 2 or 3 colleges together can set it up and maintain it so that all the students can reap the benefits of having a skill lab. NMC has directed all medical colleges to set up skill labs and use them for skill training in undergraduates.

ACKNOWLEDGEMENT

The authors acknowledge with gratitude all the guidance received from the mentors and facilitators at the Nodal Centre for Faculty Development, Govt Medical College, Kottayam in the preparation of this paper.

REFERENCES:

1. Dhir SK, Verma D, Batta M, Mishra D. E-learning in medical education in India. *Indian Pediatr.* 2017;54(10):871–7. .Herrmann-Werner A, Nikendei C, Keifenheim K, Bosse HM, Lund F, Wagner R, et al. "Best practice" skills lab training vs. a "see one, do one" approach in undergraduate medical education: an RCT on students' long-term ability to perform procedural clinical skills. *PLoS One.* 2013;8(9):e76354.
3. Lund F, Schultz J-H, Maatouk I, Krautter M, Möltner A, Werner A, et al. Effectiveness of IV cannulation skills laboratory training and its transfer into clinical practice: A randomized, controlled trial. *PLoS One.* 2012; 7:e32831. Technological resources. *Comput Inform Nurs.* 2011;29:212-20
4. Peter E Nielsen, Lisa M Foglia, Lynn S Mandel, Gregory E Chow, Objective structured assessment of technical skills for episiotomy repair, *American Journal of Obstetrics and Gynecology*, Volume 189, Issue 5, 2003, Pages 1257-1260
5. Ellaway R, Masters K. AMEE Guide 32: E-Learning in medical education Part 1: Learning, teaching and assessment. *Med Teach.* 2008; 30:455-73.
6. Bloomfield JG, Anne Jones, Using e-learning to support clinical skills acquisition: Exploring the experiences and perceptions of graduate first-year pre-registration nursing students. A mixed method study, *Nurse Education Today*, Volume. 33(ue 12, 2013, Pages):1605–1611.
7. Stark, Patsy. "Clinical skills teaching and learning." *The Clinical Teacher* 6.3 (2009)
8. Al-Shorbaji N, Atun R, Car J, Majeed A, Wheeler E (eds). E-learning for undergraduate health professional education - a systematic review informing a radical transformation of health workforce development. World Health Organization, Geneva, 2015. Available from: <http://whoeducationguidelines.org/content/e-learning-report>. Accessed June 18, 2016.
9. Rasmussen K, Belisario JM, Wark PA, Molina JA, Loong SL, Cotic Z, Papachristou N, Riboli-Sasco E, Tudor Car L, Musulanov EM, Kunz H, Zhang Y, George PP, Heng BH, Wheeler EL, Al Shorbaji N, Svab I, Atun R, Majeed A, Car J. Offline eLearning for undergraduates in health professions: A systematic review of the impact on knowledge, skills, attitudes and satisfaction. *J Glob Health.* 2014 Jun;4(1):010405. doi: 10.7189/jogh.04.010405. PMID: 24976964; PMCID: PMC4073241.
10. George PP, Papachristou N, George PP, Papachristou N, Belisario JM, Wang W, Wark PA, Cotic Z. Online e-learning for undergraduates in health professions: A systematic review of the impact on knowledge, skills, attitudes and satisfaction. *J Glob Health.* 2014;4(10406). 10.101George PP.