A Study of Skill lab training Vs Clinical practice of seeing and doing to learn common surgical skills

Authors:
1.Name : Dr Siddharth Mulki (Corresponding Author)
Designation : Assistant professor
Department of General Surgery
College: AJ Institute of medical science and Research Centre, Mangalore.
Co author:
2**. Dr Vijetha Vikram** Degree: MS General Surgery
Designation : Senior Resident
Department of General Surgery
College: AJ Institute of medical science and Research Centre, Mangalore.
3. DR Naveen Kumar Salutagi
Degree: MS General Surgery
Designation : Assistant professor
Department of General Surgery
College: AJ Institute of medical science and Research Centre, Mangalore.

Abstract:
Even though the benefits of skills lab training are well known, there is a lack of data on the effectiveness of the training over a longer period of time. This is despite the fact that the benefits of skills lab training are well established. Because of this, we made the decision to conduct a prospective, randomised controlled trial with a follow-up period of either three or six months to investigate whether or not students who were instructed in accordance with a "best practise" model (BPSL) performed one skill of different suturing in a simulated environment better than students who were instructed in accordance with a traditional "see one, do one" teaching approach. The purpose of this investigation was to determine whether or not students who were instructed in accordance with a (TRAD). The goal of this research was to identify which group performed better than the others.
Keywords: Skill lab, training, clinical practice, seeing and doing.

Introduction:
In most medical schools, the skills lab has long been an integral part of the comprehensive education and training offered by the institution. It provides a safe and "error forgiving" environment, which is a training environment that enables trainees the opportunity to practise [1] procedures can be practised on manikins, on standardised patients, or on actual individuals. [Citation needed] [Further citation is required] It is feasible to gain experience doing procedures on actual people. Before using their expertise on actual patients, they practise on each other first in order to hone their abilities in the respective procedures. [2-4]. It has been demonstrated that training in skills laboratories can increase procedural abilities not only in novices but also in experts who have years of experience [5-8]. [Skills laboratories] This is relevant for in-depth understanding of complex surgical procedures [8, 9], in addition to the essential clinical skills obtained in medical school [9]. In addition to this, it would appear that there is evidence that simulation-based medical education is advantageous (also known as SBME), which is a factor that, when present in a

clinical situation, positively influences the outcome [10,11,12]. Issenberg and colleagues present a systematic review in which they describe components that have a role in deciding how effective SBME is [5]. In this review, the authors clarify the components. This review was carried out so that the writers could engage in a more in-depth discussion regarding the components. Educational feedback is required to be present as one of the fundamental aspects since it allows for introspection into the efficiency of the operational operations and is therefore one of the fundamental factors that must be present.

On the other hand, there is a dearth of data concerning the consequences on the long-term health of the population. maintenance of the procedural skills learned during SBME, despite the fact that it is general information that practical proficiencies decline over time if they are not maintained. Despite this common knowledge, it is imperative that procedural skills be maintained.

Aims and Objectives:

To Study and understand Skill lab training Vs Clinical practice of seeing and doing to learn common surgical skills.

Materials and Methods:

During the period of July 2018 to June 2020, this study was conducted at the A.J.Institute of Medical Centre in Mangalore.

The students that participated in the study were in the second year of their academic programme. The performance of the task of suturing served as the evaluation criteria. One hundred different students were chosen to participate in the research project, and after they had all been gathered together, they were divided up into their respective groups.

Students in the first group received their training in the skill lab, while students in the second group received their training in the casualty.

Once receiving instruction over a period of three months, participants were given an OSCE test to complete in the skill lab. Their scores were then compared after the test was completed.

Results:

Table 1: Pre training OSCE marks:

Group 1	Group 2	P-Value (<0.001)
3.4± 0.35	4.98± 0.57	No Sig

Table 2: OSCE marks after 3 months

Group 1	Group 2	P-Value (<0.001)
8.59±1.48	5.02± 0.39	Sig

Discussion:

It would appear that theoretical knowledge is retained better than practical skills, and that the ability to complete simpler activities appears to be lost at a slower rate than more complex ones [13,14]. This could be due to the fact that simpler activities require less cognitive processing than more complex ones. It would appear that, on the whole, theoretical knowledge is more likely to be retained over time than practical ability. Studies on the long-term retention of procedural skills have, for the most part, concentrated on the many abilities that are taught in basic and advanced cardiac life support training. This is because these are the skills that are most likely to be needed in an emergency. This is due to the fact that these being the talents that are most likely to be employed in an unexpected circumstance. In the

ISSN:0975 -3583,0976-2833 VOL12, ISSUE 01, 2021

current scenario, it is possible to demonstrate that a detectable decline in performance started as early as a few weeks after the beginning of initial training, or it is possible to demonstrate that it started as late as an entire year later. Either way, it is possible to demonstrate that the decline in performance began at some point after the beginning of initial training. The greatest significant drop occurred between 6 and 12 months after the initiation of the inquiry [15-18]. [Citation needed] [Citation needed] [Insert citation here] Fewer studies have been conducted on the effectiveness and retention of other skills that are taught in an SBME environment. [Citation needed] [Citation needed] [Further citation is required] [Further citation is required] [Further citation is required] Additionally, there is a big amount of variety about the skills done, the subjects of the research, and the training approaches, all of which contribute to the difficulty in interpreting the findings. In addition, there is a large amount of diversity regarding the skills done. There are a few examples of this phenomenon, including surgical residents maintaining their competence in laparoscopic surgery or colonoscopy after three months [13,19], nephrology fellows experiencing a significant decline in their ability to insert temporary haemodialysis catheters after six months [20], and trained anaesthetists maintaining satisfactory retention of a rare but crucial procedural skill like coniotomy up to a year [21]. Because there is such a vast diversity of data, it is extremely challenging, if not impossible, to arrive at any conclusions regarding the effectiveness of skills lab training for medical undergraduate students. In conclusion, our current understanding of the factors that contribute to the long-term retention of SBME learned abilities is still fairly limited despite significant strides in this area of research. [Further citation is required] This is due to a general lack of data, flaws in the research design (such as heterogeneity in training methods, number of redundant practising, etc.), and variability in assessed skills in terms of the complexity of the abilities that are being tested. In general, there is a dearth of data. This is due to a widespread deficiency in the availability of data. The "best practise" skills lab training that is carried out inside an SBME context consists of multiple instructional components, all of which are covered in the programme. Instructional strategies such as Peyton's "Four-Step Approach," which appears to provide a reliable and yet fairly popular teaching method [22], as well as feedback and repetitive practise as essential components of effective SBME [5] are some examples of these. Other instructional strategies include the following: In this context, the European Resuscitation Council [23] mandated that it be included as a mandatory component in the training that is provided as part of its resuscitation training courses and that it be incorporated into the training that is delivered as part of its resuscitation training courses. There is, however, evidence that is contradictory regarding whether or not skills lab teaching that follows a "best practise" approach (BPSL) leads to a better performance than other established teaching methods, such as a more traditional teacher-centered "see one, do one" approach (TRAD), which is a primary component of clinical bedside teaching [24]. This is because the "best practise" approach to teaching skills in a skills lab is known as the "best practise" approach to teaching skills in a skills lab. This is due to the fact that the "best practise" approach to teaching skills in a skills lab is known as the "best practise" approach to teaching skills in a skills lab. Students are able to learn knowledge through this mode of education by observing an experienced medical practitioner as they explain and perform a skill [25].

Conclusion:

It would appear that teaching skills in a laboratory environment is more beneficial for the reproduction of more basic abilities when it comes to performance measured over a longer length of time. This is particularly the case for more complex talents.

References:

1. Ziv A, Ben-David S, Ziv M (2005) Simulation based medical education: an opportunity to learn from errors. Med Teach 27: 193-199. doi: 10.1080/01421590500126718. PubMed: 16011941.

2. Barrows HS (1993) An overview of the uses of standardized patients for teaching and evaluating clinical skills. AAMC. Acad Med J Assoc Am Med Colleges 68: 443-451; discussion 451-443 doi: 10.1097/00001888-199306000-00002.

3. Bradley P, Postlethwaite K (2003) Setting up a clinical skills learning facility. Med Educ 37 Suppl 1: 6-13. doi:10.1046/j. 1365-2923.37.s1.11.x.

4. Nikendei C, Zeuch A, Dieckmann P, Roth C, Schäfer S et al. (2005) Role-playing for more realistic technical skills training. Med Teach 27: 122-126. doi:10.1080/01421590400019484. PubMed: 16019330.

5. Issenberg SB, McGaghie WC, Petrusa ER, Lee Gordon D, Scalese RJ (2005) Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review. Med Teach 27: 10-28. doi:10.1080/01421590500046924. PubMed: 16147767.

6. Jiang G, Chen H, Wang S, Zhou Q, Li X et al. (2011) Learning curves and long-term outcome of simulation-based thoracentesis training for medical students. BMC Med Educ 11: 39. doi: 10.1186/1472-6920-11-39. PubMed: 21696584.

7. Khan K, Pattison T, Sherwood M (2011) Simulation in medical education. Med Teach 33: 1-3. doi:10.3109/0142159X.2011.530320. PubMed: 21182376.

8. Lynagh M, Burton R, Sanson-Fisher R (2007) A systematic review of medical skills laboratory training: where to from here? Med Educ 41: 879-887. doi:10.1111/j.1365-2923.2007.02821.x. PubMed: 17696985.

9. Lund F, Schultz JH, Maatouk I, Krautter M, Möltner A et al. (2012) Effectiveness of IV cannulation skills laboratory training and its transfer into clinical practice: a randomized, controlled trial. PLOS ONE 7: e32831. doi:10.1371/journal.pone.0032831. PubMed: 22427895.

10. McGaghie WC, Draycott TJ, Dunn WF, Lopez CM, Stefanidis D (2011) Evaluating the impact of simulation on translational patient outcomes. Simul Healthc 6 Suppl: S42-S47. doi:10.1097/SIH.0b013e318222fde9. PubMed: 21705966.

11. Barsuk JH, McGaghie WC, Cohen ER, Balachandran JS, Wayne DB (2009) Use of simulation-based mastery learning to improve the quality of central venous catheter placement in a medical intensive care unit. J Hosp Med 4: 397-403. doi:10.1002/jhm.468. PubMed: 19753568.

12. Arthur W, Bennet W, Stanush PL, McNelly T (1998) Factors That Influence Skill Decay and Retention: A Quantitative Review and Analysis. Hum Perform 11: 57-101. doi:10.1207/s15327043hup1101_3.

13. Bonrath EM, Weber BK, Fritz M, Mees ST, Wolters HH et al. (2012) Laparoscopic simulation training: Testing for skill acquisition and retention. Surgery 152: 12-20. doi:10.1016/j.surg.2011.12.036. PubMed: 22341719.

14. Smith KK, Gilcreast D, Pierce K (2008) Evaluation of staff's retention of ACLS and BLS skills. Resuscitation 78: 59-65. doi:10.1016/ j.resuscitation.2008.02.007. PubMed: 18406037.

15. Anderson GS, Gaetz M, Masse J (2011) First aid skill retention of first responders within the workplace. Scand J Trauma Resusc Emerg Med 19: 11. doi:10.1186/1757-7241-19-11. PubMed: 21303536.

16. Duran R, Aladağ N, Vatansever U, Küçükuğurluoğlu Y, Süt N et al. (2008) Proficiency and knowledge gained and retained by pediatric residents after neonatal resuscitation course. Pediatr Int 50: 644-647. doi:10.1111/j.1442-200X.2008.02637.x. PubMed: 19261112.

ISSN:0975 -3583,0976-2833 VOL12, ISSUE 01, 2021

17. Ruetzler K, Roessler B, Potura L, Priemayr A, Robak O et al. (2011) Performance and skill retention of intubation by paramedics using seven different airway devices--a manikin study. Resuscitation 82: 593-597. doi:10.1016/j.resuscitation.2011.01.008. PubMed: 21353364.

18. Yang CW, Yen ZS, McGowan JE, Chen HC, Chiang WC et al. (2012) A systematic review of retention of adult advanced life support knowledge and skills in healthcare providers. Resuscitation 83: 1055-1060. doi: 10.1016/j.resuscitation.2012.02.027. PubMed: 22391016.

19. Snyder CW, Vandromme MJ, Tyra SL, Hawn MT (2010) Retention of colonoscopy skills after virtual reality simulator training by independent and proctored methods. Am Surg 76: 743-746. PubMed: 20698383.

20. Ahya SN, Barsuk JH, Cohen ER, Tuazon J, McGaghie WC et al. (2012) Clinical performance and skill retention after simulation-based education for nephrology fellows. Semin Dial 25: 470-473. doi: 10.1111/j.1525-139X.2011.01018.x. PubMed: 22309946.

21. Boet S, Borges BC, Naik VN, Siu LW, Riem N et al. (2011) Complex procedural skills are retained for a minimum of 1 yr after a single highfidelity simulation training session. Br J Anaesth 107: 533-539. doi: 10.1093/bja/aer160. PubMed: 21659406.

22. Peyton J (1998) Teaching in the theatre. In: J Peyton. Teaching and learning in medical practice. Rickmansworth, UK: Manticore Publishing House Europe, Ltd.. pp. 171-180.

23. Sopka S, Biermann H, Rossaint R, Knott S, Skorning M et al. (2012) Evaluation of a newly developed media-supported 4-step approach for basic life support training. Scand J Trauma Resusc Emerg Med 20: 37. doi:10.1186/1757-7241-20-S2-P37. PubMed: 22647148.

24. Manthey D, Fitch M (2012) Stages of competency for medical procedures. Clin Teach 9: 317-319. doi:10.1111/j.1743-498X. 2012.00561.x. PubMed: 22994471.

25. Williams GC, Lynch M, Glasgow RE (2007) Computer-assisted intervention improves patient-centered diabetes care by increasing autonomy support. Health Psychol 26: 728-734. doi: 10.1037/0278-6133.26.6.728. PubMed: 18020845.