

A Study of Retainability of Knowledge of BLS Taught in Foundation Course on Manikins after Six Months in First MBBS Students

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Abstract

Background: The cardiac arrest strikes anyone and a person with out-of-hospital cardiac arrest does not always be lucky enough to receive cardiopulmonary resuscitation. It may be due to a complete lack of competence of the common man in these situations. It is because of these observations made by authorities many health organisations in the world came up with the idea of training even the common man with BLS. So, National Medical Council also has laid down teaching guidelines for these fresher. National Medical Commission has done a superb job in mandating this but how far these skills will be learnt and how much will be retained is the million-dollar question. This study puts in a sincere effort to find the answers for this question. **Aims and Objectives:** To determine the retention of the BLS skill this has been taught after six months. **Materials and Methods:** One hundred fifty students will be undergoing the BLS course in the foundation course and immediately after the session a OSCE will be conducted so that the students will know the format of the examination and will be versed with the system and method of examination and the marks of the OSCE score will be noted in EXCEL format. After six months another OSCE session will be conducted which will serve as pre-test scores. The scores will be noted again in EXCEL sheet. The retention of the skill of BLS will be tested using the paired t test statistical analysis. **Results:** There was a significant difference between the OSCE scores initially when compared to the scores after six months. **Conclusion:** The training of the BLS should be started very early in the career of the budding students and reinforcement of the skill is needed.

Keywords: Retainability, Knowledge, Skill, BLS, MBBS, Freshers.

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Introduction

The cardiac arrest strike anyone and a person with out-of-hospital cardiac arrest does not always be lucky enough to receive cardiopulmonary resuscitation[1]. It may be due to a complete lack of competence of the common man in these situations[2]. It is because of these observations made by authorities many health organisations in the world came up with the idea of training even the common man with BLS. So it is absolutely desirable for young budding doctors to be introduced to these skills at a very early age preferably at the starting of their career so as to develop the necessary psychomotor skills at a very young age. So NMC guidelines have suggested that it should be started in the very beginning of the career itself and so have stressed that it would be compulsory to train the students who are admitted for MBBS during their first month itself.

Many factors have been known and have been reported by many studies related to the learning process and the factors that influence them eg: the age of the student, the student teacher ratio, duration of teaching, the style of teaching and the methods used[3,4]. Many studies have been conducted to find the way to teach this necessary skill effectively but there is no gold standard. But one way which comes very near to the reality is the use of manikins which essentially gives us the feedback. These along with specific simulated scenarios combined can be very effective means of teaching.

And after teaching another thing that should be kept in mind is the retain ability of this necessary lifesaving skill. Many studies have indicated that the ability to perform BLS correctly decreases with the time[5-9].

Teaching these freshers is highly desirable and National Medical Commission has done a superb job in mandating this but how far these skills will be learnt and how much will be retained is the million-dollar question. This study puts in a sincere effort to find the answers for this question.

Aims and objectives

To determine the retention of the BLS skill this has been taught after six months.

Materials and methods

Settings

Department of Medicine, Kanachur Institute of Medical Sciences, Mangalore from Nov 2019 to Oct 2020.

Design

Quasi Experimental Design.

Subjects

I MBBS freshers

Sample size

150 students

Methodology

All one hundred fifty students will be undergoing the BLS course in the foundation course and immediately after the session a OSCE will be conducted so that the students will know the format of the examination and will be versed with the system and method of examination and the marks of the OSCE score will be noted in EXCEL format.

After six months another OSCE session will be conducted which will serve as pre-test scores. The scores will be noted again in EXCEL sheet.

The retention of the skill of BLS will be tested using the paired t test statistical analysis.

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Data Collection

Pre and Post test OSCE scores.

Data Analysis

Paired and unpaired t test.

Results

Table 1: OSCE Scores immediately after the training

	N	Mean	Std. Deviation
OSCE 1	150	8.7	1.07

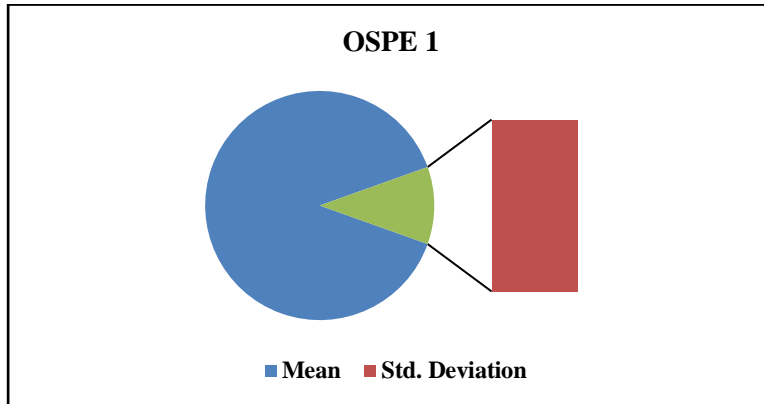


Fig 1: Mean OSCE Scores with standard deviation

Table 2: OSCE scores after 6 months

	N	Mean	Std. Deviation
OSCE 1	150	7.05	1.62

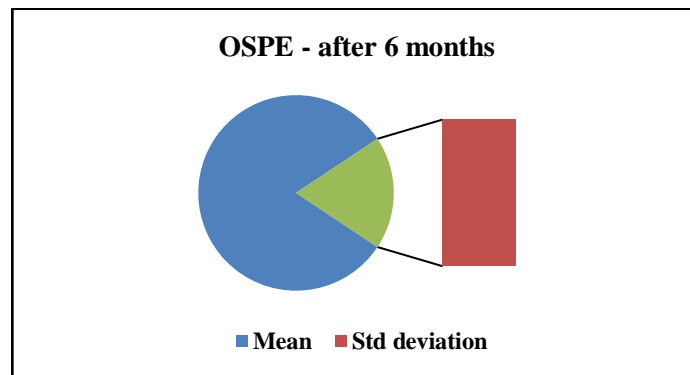


Fig 2: OSCE scores after 6 months

Table 3: Comparison between the two groups

Group	N	Mean	Std. Deviation	Paired Differences		t	df	P VALUE
				Mean Difference	Std. Deviation			
OSCE 1	150	8.7	1.07	1.7	1.7	6.94	48	<u>≤0.001</u>
OSCE after 6 months	150	7.05	1.62					

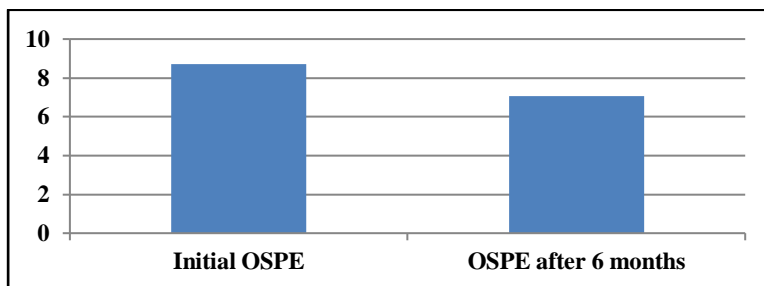


Fig 3: Comparison between the two groups

Discussion

In our study we noticed a loss of knowledge and skill in terms of OSCE scores which was checked after 6 months after the initial training. The study conducted by Freund et al[10] had demonstrated that the medical students who used to attend clinics had very low knowledge and also the set of skills to perform the basic life support. They conducted a study which clearly showed the lack of knowledge in terms of the scores. Another study conducted by Businger et al[11] observed in their study that the general public had a very poor understanding of the BLS. In our country also the condition would be same if not worst. The understanding of this basic knowledge is very important even for the general public. We cannot expect the trained doctors to be there everywhere. Many other studies conducted around the world also showed the same condition if not worst. Not only the General public but even the trained medical students could not conduct the BLS efficiently[12]. The score reflected the ability of the students. Immediate scores were pretty up to the mark. This test was conducted immediately after conducting the BLS training in the MBBS freshers, but the scores after six months declined drastically reflecting on the fact that the skill levels declined. Infact this should be an eye opener. Other studies have been conducted and we totally are in agreement with the study conducted by Partiprajak et al[13]. In their study they have observed the drop in the ability to conduct effective BLS after only three months. So repetition or reinforcement of the knowledge might be the answer to this. In another study conducted by Pande et al[14] it was conclusively proved the decrease in knowledge as the time lapsed. So this study is of the opinion that the training of the BLS should be started very early in the career of the budding students. So that the retention of this particular valuable skill would be imprinted in the growing minds forever.

Conclusion

The training of the BLS should be started very early in the career of the budding students. So that the retention of this particular valuable skill would be imprinted in the growing minds forever. Not only should the medical students, even the General public be trained. It is highly accepted that this training should also start at a very early age.

References

1. Gräsner J.T., Bossaert L. Epidemiology and management of cardiac arrest: What registries are revealing. *Best Pract. Res. Clin. Anaesthesiol.* 2013;27:293–306.
2. Nolan J.P., Hazinski M.F., Aickin R., Bhanji F., Billi J.E., Callaway C.W., Gent L.M. Part 1: Executive summary: 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. *Resuscitation.* 2015;95:e1–e31.
3. Papalexopoulou K., Chalkias A., Dontas I., Pliatsika P., Giannakakos C., Papapanagiotou P., Xanthos T. Education and age affect skill acquisition and retention in lay rescuers after a European Resuscitation Council CPR/AED course. *Heart Lung.* 2014;43:66–71.
4. Niles D.E., Nishisaki A., Sutton R.M., Elci O.U., Meaney P.A., O'Connor K.A., Nadkarni V. Improved Retention of Chest Compression Psychomotor Skills with Brief “Rolling Refresher” Training. *Simul. Healthc.* 2017;12:213–219.
5. Roppolo L.P., Ohman K., Kulkarni H., Miller R., Idris A.H. PrOSCEctive, randomized trial of the effectiveness and retention of 30-min layperson training for cardiopulmonary resuscitation and automated external defibrillators: The American Airlines Study. *Resuscitation.* 2007;74:276–285.
6. Smith K.K., Gilcreast D., Pierce K. Evaluation of staff’s retention of ACLS and BLS skills. *Resuscitation.* 2008;78:59–65.
7. Woollard M., Whitfield R., Newcombe R.G., Colquhoun M., Vetter N., Chamberlain D. Optimal refresher training intervals for AED and CPR skills: A randomised controlled trial. *Resuscitation.* 2006;71:237–247.
8. Anderson R., Sebaldt A., Lin Y., Cheng A. Optimal training frequency for acquisition and retention of high-quality CPR skills: A randomized trial. *Resuscitation.* 2019;135:153–161.
9. Hsieh M.-J., Chiang W.-C., Jan C.-F., Lin H.-Y. The effect of different retraining intervals on the skill performance of cardiopulmonary resuscitation in laypeople-A three-armed randomized control study. *Resuscitation.* 2018;128:151–157.
10. Freund Y, Duchateau FX, Baker EC, et al. Self-perception of knowledge and confidence in performing basic life support among medical students. *Eur J Emerg Med.* 2013;20(3):193–196.
11. Businger A, Rinderknecht S, Blank R, Merki L, Carrel T. Students’ knowledge of symptoms and risk factors of potential life-threatening medical conditions. *Swiss Med Wkly.* 2010;140(56):78–84.
12. Ghanem E, Elgazar M, Oweda K, et al. Awareness of basic life support among egyptian medical students; a cross-sectional study. *Emerg.* 2018;6(1):e36.
13. Partiprajak S, Thongpo P. Retention of basic life support knowledge, self-efficacy and chest compression performance in Thai undergraduate nursing students. *Nurse Educ Pract.* 2016;16(1):235–241.
14. Pande S, Pande S, Parate V, Pande S, Sukhshohale N. Evaluation of retention of knowledge and skills imparted to first-year medical students through basic life support training. *Adv Physiol Educ.* 2014;38(1):42–45.

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