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A study of effectiveness of reinforcement of BLS training in first MBBS students

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Abstract

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 this situation. 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. Many studies have indicated that the ability to perform BLS correctly decreases with the time. Will there be any difference if the teaching is reinforced after a period of time is what this study will try to look into.

Keywords: Reinforcement, BLS training, first MBBS students

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 situation ^[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]. 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]. Will there be any difference if the teaching is reinforced after a period of time is what this study will try to look into.

Aims and Objectives

To find out whether there will be any difference if the BLS teaching is reinforced after a period of time.

Materials and Methods

Settings: Department of Emergency Medicine, Kanachur Institute of Medical Sciences, Mangalore.

Subject: I MBBS freshers

Sample size: 150 students

Methodology

All one hundred fifty students underwent the BLS course in the foundation course and immediately after the session an OSCE examination was 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.

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After three months One hundred fifty students was divided into two groups using a lottery method. Group A was made to undergo the BLS training once again. The idea is to reinforce the training method in this group. Group B was not made to undergo this training. After 3 months another OSCE session was conducted for both group A and B and then the scores of the two groups will be compared using students unpaired t test. Also the retention in each group will be tested using the paired t test statistical analysis.

After the study group B will be made to undergo another round of BLS training so as to be ethically right on these students.

Data Collection

Pre and Post test OSCE scores.

Data analysis: paired and unpaired t test.

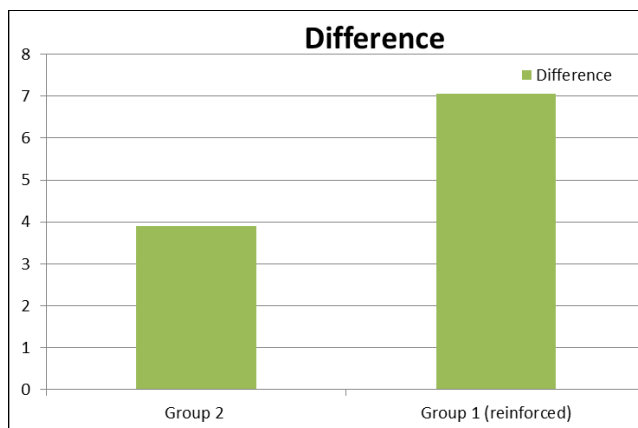
Results

Table 1: Independent t test to compare between the two groups

	Group	N	Mean	Std. Deviation	t	df	P value
OSCE Scores initially			6.46	3.6	--	--	=
MCQ-AFTER 6 months	Group 2	75	3.9	1.693	-9.531	98	<0.001
	Group 1 (reinforced)	75	7.06	1.621			

Interpretation

Comparison of the MCQ-AFTER between the two groups shows that MCQ-AFTER is higher in BRAIN MOULD group with a t value of -9.531 and is statistically significant with a p value of <0.001



Graph 1: Comparison between the two groups

Discussion

Several studies have shown that medical students fall short of the required standards for successful resuscitation. Of note, a survey assessing competence in BLS revealed that more than half of the first-year clinical students did not know to assess the airway after checking for danger and calling for help. Moreover, under simulated conditions, the average compression rate of student participants was considerably below the BLS recommendations^[10]. It is well known that meeting the compression rate improves survival following resuscitation^[11]. We propose that the lack of competency may be due to ineffective training, poor retention of skills, and minimal assessment.

In order to refine the current BLS curriculum for medical students, the method and frequency of training need to be revised. Currently, most of the medical schools in UK employ instructor training with plastic mannequins as the primary method for CPR training. Other ways to train medical students could be the use of novel techniques such as high-fidelity simulation environments or voice-assisted mannequins. Wik *et al.*^[11] found that mannequins providing feedback through automated messages according to CPR parameters led to vast improvement in CPR skills when compared with no feedback. Although both these novel

techniques improve the acquisition of CPR skills, a formal cost-benefit analysis is necessary to determine their utility in medical education. The technique of training may not need to be changed; instead, regular reinforcement after initial training could be through simple testing rather than full retraining. Mpotos *et al.*^[12] recently emphasized the efficacy of repetitive formative self-testing in improving the retention of CPR skills. Further repetition of these essential skills may also be encouraged through “learning by teaching”. Breckwoldt *et al.*^[13] demonstrated that medical students who taught BLS skills to schoolchildren had better practical skills compared to students who only underwent conventional training. Additionally, teaching these vital skills to schoolchildren can further contribute toward improved public awareness of BLS.

Conclusion

Reinforcement makes a difference and this is quite evident with the difference in the OSCE scores scored. This study makes a point to train the students early and also the frequency of the training should increase.

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