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## Research Article

### CARDIOPULMONARY RESUSCITATION TRAINING FOR MEDICAL TEACHERS: NEED OF THE HOUR

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#### ABSTRACT

Cardiopulmonary Resuscitation (CPR) involves both Basic Life Support (BLS) & Advanced Cardiac Life Support (ACLS). It has been observed that BLS awareness is very poor amongst health professionals. Keeping in view of this fact, a CPR training workshop was organized by Medical Education Unit of our institution with the help of Department of Anesthesia. The purpose was to assess the existing knowledge about CPR amongst the medical teachers of pre and para clinical departments of SMS Medical College, Jaipur and to make them competent in the same. The knowledge assessment before and after workshop was done by validated questionnaire. The hands-on -skill training was assessed by the trainers for correct method as per the performance parameters based on American Heart Association (AHA) by Direct Observation Procedural Skill. The results revealed that before and after the training there was considerable improvement in the theoretical knowledge and practical skills about CPR.

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#### INTRODUCTION

Cardiac arrest is an emergency that happens outside hospital settings in 70% of the cases<sup>1</sup>. Without resuscitation, cardiac arrest can result in death. It has been shown that immediate Cardiopulmonary Resuscitation (CPR) after collapse increases the chances of survival. In contrast, survival chances decrease by 7-10% for every minute passing by, if CPR is delayed<sup>2</sup>.

CPR involves both Basic Life Support (BLS) & Advanced Cardiac Life Support (ACLS). BLS is rapid identification of signs of cardiac arrest, stroke, foreign body airway obstruction and starting basic steps to maintain circulation and breathing<sup>3,4</sup>. It can be given by health care providers as well as lay man. But it is important to give it in a right way well in time to get the desirable results. It has been reported that BLS awareness was very poor amongst health professionals like medical teachers, nurses and medical graduates. The Medical Council of India envisages the training of MBBS students in Basic Life Support to be included in the proposed 1st Year foundation course in the Graduate Medical Regulations 2012.

This study was planned to assess the knowledge and skills of BLS and ACLS among Pre and Para Clinical medical teachers of SMS Medical College, Jaipur and also to train them in the same.

#### Aims and Objectives

1. To evaluate the existing knowledge about BLS and ACLS among Pre and Para medical teachers.
2. To effectively train them in administering CPR.
3. To assess the acquired knowledge and skill after the workshop.

#### MATERIALS AND METHODS

A cross-sectional, interventional study was conducted at SMS Medical College, Jaipur. A total of 70 teaching faculty members of Pre and Para Clinical courses were enrolled into the program of BLS and ACLS training. The program was conducted with the help of Medical Education Unit and Department of Anesthesia in two workshops in the year 2016. It was a Training-cum -workshop divided into two parts— theoretical part (which consisted of interactive lectures and demonstrations) and hands on skill training on mannequins.

Out of the 70 total enrollments, 67 completed the program and were awarded a certificate at the end of the program. Those who attended the program were given a pre test consisting of 20 questions each. These questions were framed and pre validated by the Senior Faculty members of Department of Anesthesia.

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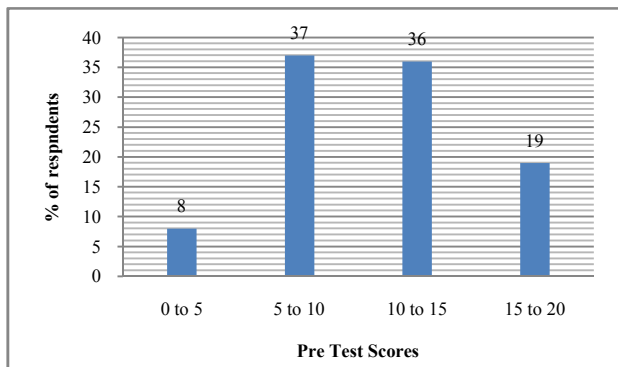
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After completing the program, a post test consisting of the same 20 questions that were given as pre test was taken by the attendants. The results (marks obtained) of pre and post tests were evaluated.

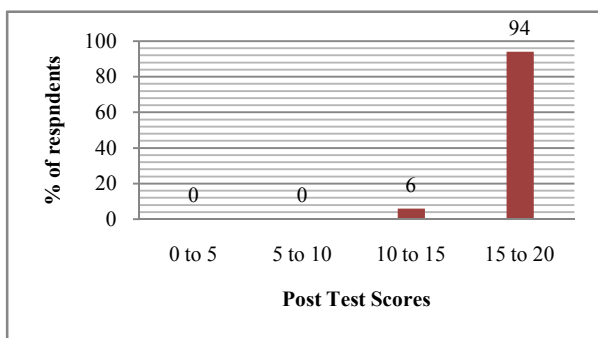
Hands- on -skill training was assessed by the trainers for correct method as per the performance parameters based on American Heart Association (AHA) by Direct Observation Procedural Skill.

**Table 1**

Question	Pre-test			Post test		
	Correct	Incorrect	Unattempted	Correct	Incorrect	Unattempted
1. You are at a park when a gentleman collapses in front of you. He falls to the ground and does not appear breathing. What would you do now?	34	28	0	58	4	0
2. What does AED in CPR stand for?	53	7	2	62	0	0
3. What is the first step after the AED arrives?	25	37	0	55	6	1
4. The sequence that should be followed in a CPR is?	35	26	1	58	4	0
5. The depth of compression should be?	42	16	4	59	2	1
6. The compression- ventilation ratio for single lay rescuer performing adult BLS should be?	39	20	3	59	3	0
7. When advanced airway is in place, the single marker to indicate the termination of rescue efforts is EtCO2?	31	24	7	49	12	1
8. While performing an adult ACLS, the only vasopressor advised is?	28	19	5	58	4	0
9. All comatose patients undergoing return of spontaneous circulation (ROSC) should undergo cooling to?	22	34	6	55	7	0
10. The earliest time to prognosticate the patient after post cardiac arrest care in the absence of sedation/ paralysis is?	37	19	6	61	1	0
11. A contractor is electrocuted and becomes unconscious. The scene is safe. An AED has been connected and shock is about to be delivered. What would you do?	33	27	2	61	1	0
12. While performing CPR your chest compression should be?	39	21	2	61	1	0
13. Once the patient is defibrillated and high quality CPR is in progress, the first drug you would expect to give would be?	39	17	6	59	3	0
14. You are treating a victim of trauma who is in deep coma. Which of the following is the airway of choice for this patient?	41	16	5	60	2	0
15. An adult male was thrown of snow mobile at 50 MPH. He is unconscious, not breathing but does have a strong pulse. How should you open the airway to give rescue breaths?	44	15	3	59	3	0
16. What should be the duration for checking breathing and circulation?	51	6	5	60	2	0
17. How many seconds are required for completion of one CPR cycle?	42	14	6	59	2	1
18. Where should you feel for the pulse of an unresponsive adult victim?	39	17	6	61	1	0
19. You are performing rescue breathing for victim of respiratory arrest. You ensure that you are delivering proper rescue breath by?	41	15	6	60	2	0
20. While dining with a friend he suddenly grabs his throat and is not able to speak or make any sound. He is choking. How should you proceed?	36	19	7	59	3	0



**Diagram 1**



**Diagram 2**

## RESULTS

Out of total 70 invitees, 67 attended the BLS/ALS workshop and out of it 62 responded to the questionnaire.

There was a statistically significant improvement in knowledge of medical teachers as shown in the results of pre and post questionnaires. (Table 1 & Diagram 1 & 2)

**Table 2** Checklist for directly observed procedural skills.

S.No.	Steps
1	Ensure Scene Safety
2	Check Response
3	Call Emergency
4	Start Chest Compressions
5	Open airway
6	Breathing (30 compressions : 2 breaths in adults)
7	Continue steps 4 and 6

The hands-on-skill training was assessed using the checklist for directly observed procedural skills. (Table 2)

## DISCUSSION

Pre-test and Post-test scores from the observed study when compared revealed that before the workshop only 19% had theoretical knowledge about the various steps of doing CPR effectively (those who scored more than 75% were considered effective). Whereas after the CPR workshop, 94% gained knowledge about the process of doing CPR effectively. These

results are in accordance with the findings of other studies which also show that CPR training is must to significantly improve the CPR performance in medical faculty<sup>6,7</sup>.

Amongst the 20 questions put to study the theoretical knowledge gained, the average pre-test score for corrected response was 11.5 which raised to 18.9 in post-test after the workshop.

The hands-on-skill training on mannequin was assessed by the sequence of steps, the quality of chest compression with the volume of ventilation by the trainers. It was observed that the competency in administering CPR definitely increased after the workshop but this increase in practical performance was lesser (75%) in comparison to theoretical gain. Studies by other researchers also mention that simulation exercises are definitely required to improve the ability to manage medical emergencies<sup>8,9 & 10</sup>.

## CONCLUSION

Though doctors constitute an important part of the medical world, yet most of them have inadequate knowledge about the correct method of administering CPR. But they have positive attitude towards learning and after training most of them are able to do it with outstanding performance. It again stresses the need for including the CPR in under-graduate medical curriculum.

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