

A Survey about Cardiopulmonary Resuscitation Awareness amongst Surgeons.

Dr S.M.Senthil nathan¹, Dr K. Santha arulmozhi¹, Dr Santhanababu V¹

Department of Anaesthesiology, Coimbatore Medical College, Coimbatore

Abstract: The major determinant in success of resuscitation is the thorough knowledge about CPR and it plays vital role in the final outcome of emergency times. We the anaesthesiologists have a major role to play in the scene of cardiac arrest. Since its a day to day routine in the field of critical care and in the life of intensivist. But its totally different in the operating theatre, since we may be a single expertise in resuscitating the patient and getting minimal helping hands. The main people to help us in resuscitation during cardiac arrest are our fellow comrades "The Surgeons"._No study had been published about the awareness about CPR among Surgeons.

Aims: To assess the awareness about cardiopulmonary resuscitation among surgeons.

Settings and Design: The study was carried out among post graduates, assistant professors, associate professors in surgical and surgical super specialty departments from various medical college hospitals and institutions around Coimbatore using response to a structured questionnaire.

Materials and Methods: A cross sectional study was conducted in Coimbatore during April-June 2015 among post graduates, professors in surgical and its super specialty departments from various medical college hospitals and institutions around Coimbatore. Study group was divided into four categories based on their years of experience in surgical field. A questionnaire was given to them interrogating regarding various aspects of awareness in BLS and ACLS. Number of participants were 200. The results were analyzed using an answer key employing appropriate statistical tools.

Statistical Analysis Used: The data was analyzed using software version Statistical Package for Social Sciences (SPSS) 12.0. The mean scores, along with their standard deviations were computed for each response to the question. A score of less than 60% for that knowledge category was considered inadequate. Mean score was compared for duration of clinical experience. $P < 0.05$ was considered significant.

Results: Score of $< 60\%$ was considered to be below average level, and it was found majority 132 out of 200 scored $< 60\%$, which is almost 66% of total participants. And among the surgeons who scored $> 60\%$, it was found that there is gross decline in the knowledge and awareness about CPR as the years of experience advance.

Conclusions: We conclude from our study it was found clearly that there was a gross lack of awareness of CPR among the surgical fraternity and hence they need to periodically taught and trained in the CPR/BLS/ACLS during their profession in order to improve their knowledge and confidence. Constant update regarding the recent trends in CPR to the surgical fraternity irrespective of the years of surgical experience will help us in theatre and also boost their confidence to face critical situations and act immediately and appropriately outside the theatre.

Key words: Cardio pulmonary resuscitation, BLS awareness, CPR questionnaire

I. Introduction

Basic Life Support following cardiorespiratory arrest is a method of maintaining cardiac output. It is the fact that early cardiopulmonary resuscitation improves the chance of surviving out of hospital cardiac arrest.¹⁻²

According to the American Heart Association (AHA) CPR is a component of the "chain of survival". The chain is a sequence of actions that help to give a person having cardiac arrest the greatest chance of survival.³

The major determinant in success of resuscitation is the thorough knowledge about CPR and it plays vital role in the final outcome of emergency times.

As we all know that, this is an era of various type of critical incidents occurring in our medical practice due to an increase of co morbidity. Of all that, cardiac arrest is one of the most severe critical incident. We the anaesthesiologists have a major role to play in the scene of cardiac arrest. Since its a day to day routine in the field of critical care and in the life of intensivist.

But its totally different in the operating theatre, since we may be a single expertise in resuscitating the patient and getting minimal helping hands. The main people to help us in resuscitation during cardiac arrest are our fellow comrades "The Surgeons".

Various studies investigated the awareness of CPR and in one study basic life support among medical, dental, nursing students and doctors and conducted by Shanta Chandrasekaran et al, it was found the awareness level were very poor. Majority around 84.82% has scored less than 50%.⁴

In another study conducted by Shrestha Roshan et al, in that they assessed knowledge and attitude of medical/paramedical professionals and it was found they were lacking in knowledge.⁵

No study had been published about the awareness about CPR among Surgeons, Hence this cross sectional study is aimed to assess the awareness about CPR among surgical fraternity in the view of decreasing the incidence of failed CPR inside the operation theatres and in post operative period.

II. Methodology

A cross sectional study was conducted by evaluating the response to 20 selected multiple choice questions regarding awareness and skills in BLS & Advanced Life Support (ALS), which was designed based on AHA guidelines. The questionnaire was regarding abbreviations, protocol, skills, resuscitation techniques & Automated External Defibrillators.

NO. OF YEARS OF EXPERIENCE	<input type="checkbox"/> 0-5	<input type="checkbox"/> 5-10	<input type="checkbox"/> 10-15	<input type="checkbox"/> >15
----------------------------	------------------------------	-------------------------------	--------------------------------	------------------------------

Questionnaire

- 1) What is the abbreviation of "BLS"?
 - a) Best Life Support
 - b) Basic Life Support
 - c) Basic Lung Support
 - d) Basic Life Services
- 2) If a person is found unconscious, what will you do at first?
 - a) Start CPR
 - b) Observe
 - c) Activate EMS
 - d) Wake him up.
- 3) What is the location for chest compression?
 - a) Right side of the chest
 - b) Left side of the chest
 - c) Mid chest
 - d) Xiphi sternum
- 4) Order in CPR?
 - a) A-B-C
 - b) B-A-C
 - c) C-A-B
 - d) C-B-A
- 5) What is the location for chest compression in infants?
 - a) At Xiphi-sternum
 - b) At the inter mammary line
 - c) One finger breadth above the nipple line
 - d) One finger breadth below the nipple
- 6) Depth of compression in adults during CPR
 - a) 1½ – 2 inches
 - b) 2½ – 3 inches
 - c) 1 – 1½ inches
 - d) ½ – 1 inch
- 7) Depth of compression in Children during CPR?
 - a) ½ – 1 CM
 - b) 1½ – 2 inches
 - c) ½ – 1/3 inches
 - d) 1cm
- 8) Rate of chest compression in adult and Children during CPR
 - a) 70 / min
 - b) 80 / min
 - c) 100 / min
 - d) 120 / min
- 9) Ratio of CPR, single rescuer in adult is
 - a) 15:1
 - b) 15:2
 - c) 30:2
 - d) 5:1
- 10) In a new born the chest compression and ventilation ratio is
 - a) 15:2
 - b) 3:1
 - c) 30:2
 - d) 1:3
- 11) EMS stands for?
 - a) External Medical Support
 - b) Emergency Medical Services
 - c) Emergency Management Services
 - d) Effective Medical Services
- 12) What does abbreviation AED stands for?
 - a) Automated External Defibrillator
 - b) Automated Electrical Defibrillator
 - c) Advanced Electrical Defibrillator
 - d) Advanced External Defibrillator
- 13) Where will you feel for circulation after effective CPR?
 - a) Using stethoscope in mitral area
 - b) Radial pulse
 - c) Carotid pulse
 - d) Brachial pulse
- 14) Health care provider shouldn't take not more than ____ to determine if pulse is present ?
 - a) 5 sec
 - b) 10sec
 - c) 15 sec
 - d) 2sec
- 15) Which of the following drug has no role according to current guidelines in cardiac arrest?
 - a) atropine
 - b) adrenaline
 - c) adenosine
 - d) epinephrine
- 16) Heimlich manoeuvre is for?
 - a) Heart attack victim
 - b) Stroke victim
 - c) Choking victim
 - d) Child who needs CPR
- 17) Monophasic shock given in CPR?
 - a) 150J
 - b) 200J
 - c) 360J
 - d) 400J

Table 2: Knowledge of Respondents in CPR

Q. No	Correct Response	Wrong Response
1	200	0
2	90	110
3	54	146
4	109	41
5	56	144
6	76	124
7	47	153
8	164	36
9	156	44
10	62	138
11	196	4
12	165	35
13	154	46
14	70	130
15	65	135
16	185	15
17	78	122
18	77	123
19	80	120
20	50	150

Figure 2. Comparison of Correct Response Vs Wrong Response for ques.1-10

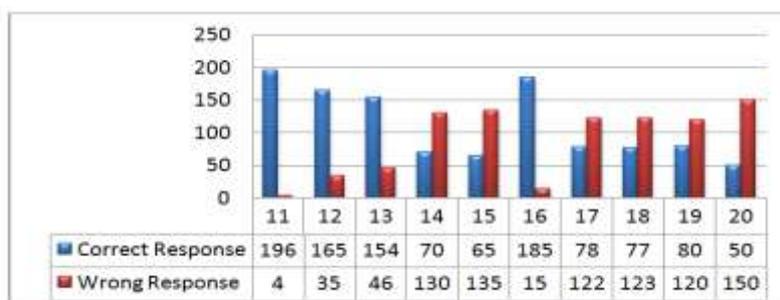
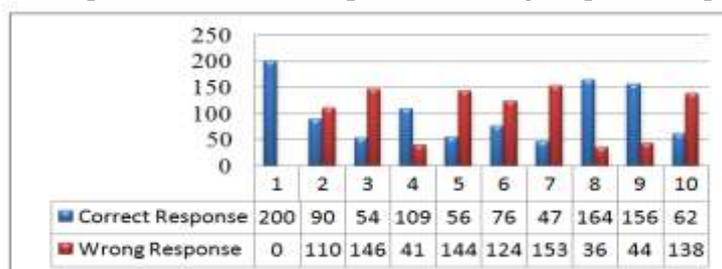


Figure 3. Comparison of Correct Response Vs Wrong Response for ques. 11- 20.

Figure 4 shows the scoring pattern of the individual groups based on the percentage of scores < 60%, 60-70%, 70-80% and >80%. On analysing the scoring pattern, no one had complete knowledge on CPR. Out of 200 , only 68 respondants scored >60%, in which 47 were in 60-70% score, 14 were in 70-80% score, only 7 were in >80% score.

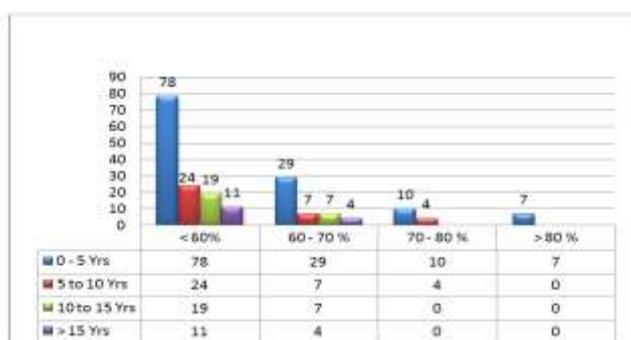
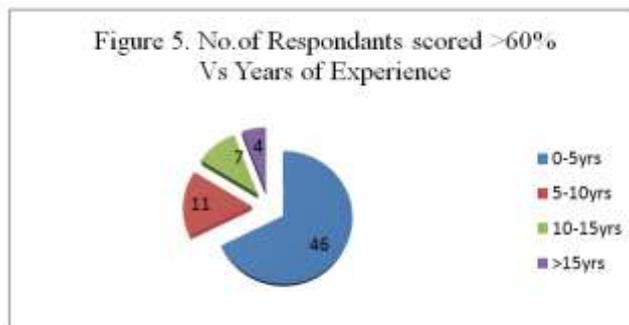


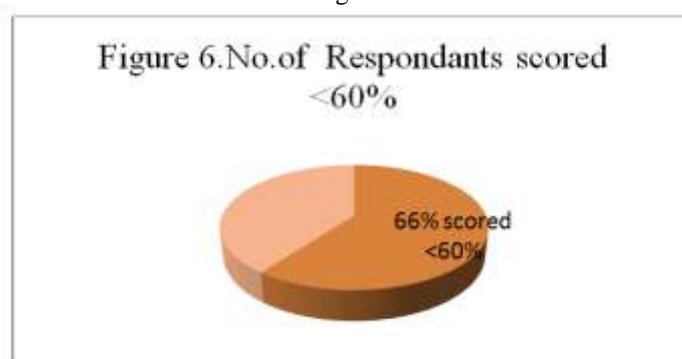
Figure4. Comparison of Experienced Respondents Vs Percentage Scored

When we look the score >60% based upon their surgical experience, 46 out of 124 were in 0-5 yrs, 11 out of 35 were in 5-10yrs experience, 7 out of 26 in 10-15yrs , and 4 out of 15 were in >15yrs of surgical experience. Figure 5



Score of < 60% was considered to be below average level, and it was found majority 132 out of 200 score <60%, which is almost 66% of total participants.

Figure 6

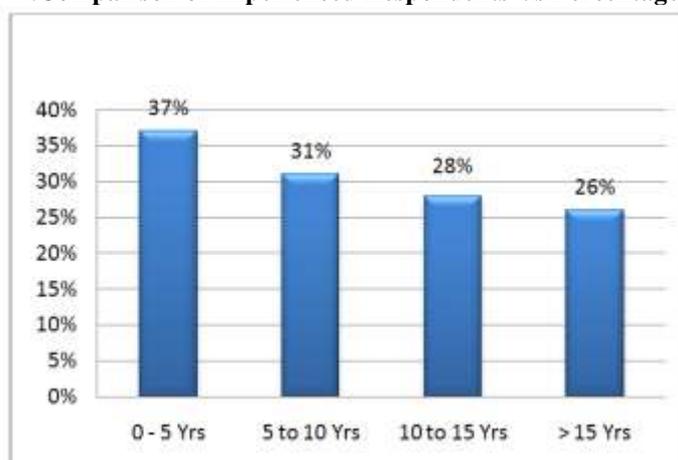


Experience	Percentage Scored
0 - 5 Yrs	37%
5 to 10 Yrs	31%
10 to 15 Yrs	28%
> 15 Yrs	26%

Table 3: Percentage VS Respondents Experience

Over all comparing the scores , based on years of experience , it was clearly noted that , those who scored >60%, almost 37% in 0-5yrs of experience, 31% in 5-10yrs of experience, 28% in 10-15yrs of experience, and 26% in >15yrs of experience which shows that there is gross decline in the knowledge and awareness about CPR as the years of experience advances.

Figure 7.Comparison of Experienced Respondents Vs Percentage Scored



IV. Conclusion

In our study it was found clearly that there was a gross lack of awareness of CPR among the surgical fraternity. After analyzing the responses it was found around 66% have scored below average <60% score which is really significant. And among the surgeons who scored >60% , it was found that there is gross decline in the knowledge and awareness about CPR as the years of experience advance.

Hence, the surgical postgraduate and the surgeons need to periodically taught and trained in the CPR/BLS during their profession inorder to improve their knowledge and confidence.

Constant update regarding the recent trends in CPR to the surgical fraternity irrespective of the years of experience will help us in theatre and also boost their confidence to face critical situations and act immediately and appropriately outside the theatre.

To achieve this goal there should be adequate changes in the curriculum for the undergraduate as well as post graduate students so that they will become masters in the basics of CPR. Implementation of practical sessions is of utmost importance to make sure that there is no hesitancy in the event of an emergency to help us.

Acknowledgments

We thank our College faculties , Institutional Ethics Committee and and the Dean, who permitted us to conduct the study. We also thank the Surgeons of all institutions who have participated in this study without hesitancy. Lets join hands and save lives !!!!

References

- [1] Handley, A.J., 1997. Basic life support. *British Journal of Anaesthesia*, 79(2): 151-158.
- [2] Bossaert, L. and R. Van Hoeyweghen, 1989. Bystander cardiopulmonary resuscitation (CPR) in out-of-hospital cardiac arrest. 17: S55-S69. Saudi.
- [3] Joseph Sciammarella. Cardiopulmonary Resuscitation (CPR). eMedicineHealth (launched May 2003). (Online) (Cited 2011 July 18). Available from URL:http://www.emedicinehealth.com/cardiopulmonary_resuscitation_cpr/article_em.html.
- [4] Chandrasekaran S, Kumar S, Bhat SA, Saravankumar, Shabbir PM, Chandrasekaran V. Awareness of basic life support among medical, dental, nursing students and doctors. *Indian J Anaesth* 2010;54:121-6 .