



ASSESSMENT OF LEVEL OF KNOWLEDGE OF BASIC LIFE SUPPORT ALGORITHM AMONG INTERNS IN A TERTIARY CARE CENTER

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ABSTRACT

Background: Cardiac arrests and accidents are the most common emergencies now a days. These emergencies can be managed by proper knowledge and practice of resuscitation skills. The incidence of cardiac arrests is alarming and may occur anytime anywhere. Cardiopulmonary Resuscitation allows almost anyone to sustain life in the early critical minutes after cardiac and respiratory arrest.

Objective- To assess the level of knowledge among interns on basic life support algorithm (CPR) before and after giving training in a tertiary health care center.

Methodology: A present cross sectional study was undertaken at Indira Gandhi Government Medical College, Nagpur during internship orientation program in February 2019. Total number of 94 interns who were present at the time of session on CPR were selected. Interns were asked open/ close ended questions about basic life support (CPR) in the form of pre-test and post-test after giving training on BLS. Self-administered, structured questionnaire was used comprising of 20 number of questions. Data was analysed using Epi info7 and Microsoft excel.

Results: Total 94 interns had given pre-test and post-test. On comparison post-test mean score of interns was significantly high as compare to pre-test mean score (p value <0.05). There were 82 interns scored <70 % in pre-test while only 2 interns in post-test. No one scored ≥90% in pre-test while 54 interns scored ≥90% in post-test.

Conclusion: This study shows that knowledge of interns before training was poor with regard to BLS but it was improved significantly after training. Hence, there is need to conduct such training in internship as it is helpful during internship to apply this knowledge effectively.

KEYWORDS : Basic life support, resuscitation, training, knowledge

INTRODUCTION:

Accidents are the most common emergencies now a days along with cardiac arrests which leads to grave consequences. These emergencies can be managed by proper practice and knowledge of resuscitation skills¹. Cardiopulmonary resuscitation (CPR) is an American Heart Association accredited training acquired after undergoing a basic life support (BLS) provider course and it can help save patients of sudden cardiac arrest if recognized early². CPR allows almost anyone to sustain life in the early critical minutes after cardiac and respiratory arrest³. CPR is an emergency procedure that combines chest compressions often with artificial ventilation in an effort to manually preserve the brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest. Basic life support (BLS) is defined as medical procedures that can be applied in the case of an emergency to save lives⁴. BLS procedures include CPR) artificial ventilation, bleeding control and basic airway management⁵. Studies have shown that immediate CPR after collapse due to ventricular fibrillation doubles or even triples the chances of survival. In contrast survival chances decrease by 7-10% for every min, if CPR is delayed⁶.

The incidence of cardiac arrests and accidents are alarming and may occur anytime anywhere². Data from previous studies suggest that more than 3 million sudden cardiac deaths occur worldwide every year and survival is lower than 8%. It has also been estimated that by the end of present decade, 60% of world's heart disease is expected to occur in India and proportionately the incidence and prevalence is expected to rise⁷.

CPR is a part of important medical procedure in emergency medical care⁸. Though CPR invented in 1960, its knowledge is poor among health professionals.

In the United States, BLS training has been recommended for all health care professionals since 1966⁹. Intern doctors today are tomorrow's future practitioners. One of the key skills that every intern doctor should develop during their graduation training is to be prepared for emergency lifesaving situations like cardiopulmonary resuscitation anytime, anywhere⁶. Individuals in the community at least the health care professionals should know how to perform BLS as they encounter such situation very often.

It is not surprising to note that even junior doctors at certain hospitals cannot perform the first aid skills satisfactorily. Basic life support requires nothing as far as resources are concerned and its importance is undeniable. Proper practice of the techniques enables a person to effectively resuscitate a victim. Ideally, everyone should know BLS and CPR but its awareness to medical graduates is invaluable³. All medical, nursing and para- medical students are expected to know resuscitation¹.

In India, there is no strictness regarding the completion of basic life support at the MBBS level although Interns require ACLS (advanced cardiac life support) completion before internship finishes. Interns and post graduate students are directly handling several patients in the emergency department so it is wise that they are well-equipped with BLS training². Hence current study is conducted to know knowledge of intern doctors regarding CPR and make them aware.

METHOD:

A present cross sectional study was undertaken at Indira Gandhi Government Medical College, Nagpur. This study was carried out in February 2019 internship orientation programme of interns. Total number of 94 interns who were present at the time of session on CPR were selected. Interns were asked open/ close ended questions about basic life support (CPR) in the form of pre orientation test and post orientation test. Self-administered, structured questionnaire was used comprising of 20 number of questions.

Study design: It was a cross -sectional study.

Study period: This study was carried out in February 2019 during internship training programme of interns.

Study setting: Department of Community Medicine, Indira Gandhi Government Medical College & Hospital Nagpur, Maharashtra, India.

Sample size: Total number of 94 interns who were present at the time of session on CPR were selected.

Study population: Study subjects were the interns of Indira Gandhi Govt. Medical College & Hospital Nagpur, Maharashtra.

Study tool: Interns were asked open/ close ended questions about basic life support (CPR) in the form of pre orientation test and post orientation test .Self-administered, structured questionnaire was used comprising of 20 number of questions.

Study procedure: During training, power point presentation were performed by the senior lecturer of the department of anesthesiology. Before session pre-test questionnaire were distributed among interns. They have given a time duration of 10 min for completing questionnaire. After the completion of questionnaire training was started on BLS, including lecture and demonstration regarding all procedures starting from identifying a person needed CPR and how to give CPR. Practical demonstration on dummy were also performed. At the end post-test questionnaire were distributed among interns and evaluation done.

Inclusion criteria: Total 94 interns those who were present at the time of session on CPR were included.

Statistical analysis: Data was analysed using Epi info 7 and Microsoft excel. Mean score of pre-test and post-test were calculated, paired T test was applied for pre-test and post-test evaluation. Similarly, percentage of correct response were calculated.

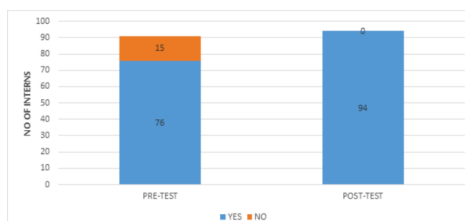
RESULTS:-

Table 1: Distribution of participants regarding knowledge on CPR. (n=94)

Sr. no	Question	Pre-test		Post-test	
		Correct n (%)	Incorrect n (%)	Correct n (%)	Incorrect n (%)
1	The critical time for CPR?	72(77)	22(23)	92(98)	2(2)
2	Ratio of compression to breath?	42(45)	52(55)	82(87)	12(13)
3	Correct sequence is C-A-B?	55(59)	39(41)	92(98)	2(2)
4	Rate of chest compression?	61(65)	33(35)	91(97)	3(3)
5	The changes in BLS emphasis more on?	42(45)	52(55)	90(96)	4(4)

6	The chest compression depth should be?	37(39)	57(61)	89(95)	5(5)
7	Resuscitation should be continue till?	49(52)	45(48)	91(97)	3(3)
8	AED stands for?	54(57)	40(43)	100(106)	0(0)
9	What is high quality CPR?	70(74)	24(26)	89(95)	5(5)
10	When 2 person will start to give bag mask ventilation to victim it become difficult and less effective?	50(53)	44(47)	68(72)	26(28)
11	Steps of opening airway – 1)head tilt 2) chin lift 3) jaw thrust	35(37)	59(63)	90(96)	4(4)
12	Site of chest compression is mid-sternum?	23(24)	71(76)	93(99)	1(1)
13	1 st step in helping a suspected foreign body obstruction victim is to confirm the severity of obstruction by talking to him?	64(68)	30(32)	83(88)	11(12)
14	Brachial artery must be located to check the Infants pulse	61(65)	33(35)	84(89)	10(11)
15	Is victim kept in recovery position after he starts breathing normally?	61(65)	33(35)	92(98)	2(2)
16	Chest compression is most critical component of CPR?	62(66)	32(34)	90(96)	4(4)
17	Radial artery must be located to check the adults pulse?	49(52)	45(48)	89(95)	5(5)
18	BLS stand for?	13(14)	81(86)	100(106)	0(0)
19	1 st step in BLS is looking for safety?	24(26)	70(74)	93(99)	1(1)
20	Pulse check should last more than 10sec?	30(32)	64(68)	61(65)	33(35)

Fig – 1 The structured resuscitation training should be added in the curriculum- pretest and post-test



Comparison of pre training and post training scores. Total no of 94 interns who were present at the time of session were selected. The pre-test mean was found to be 10.39 and post-test mean 17.60 which was higher than pre-test. After applying paired t test p value was found to be significant which is <0.01.

Table 2 –distribution among interns as per score in pretest and post test

Percentage	Pre test	Post test
<70 %	82	2
70-89 %	12	38
≥90%	0	54

Shows the distribution among interns as per score in pretest and post-test, Total 94 interns had given pre training test and post training test. There were 82 interns scored <70 % in pre

training test while only 2 interns in post training test. No one scored $\geq 90\%$ in pre training test while 54 interns scored $\geq 90\%$ in post training test.

Table 3 - Response to full forms of BLS and AED

	Pre test	Post test
AED stands for	53(55.8)	94(100)
BLS stands for	12(12.6)	94(100)

Shows in pretest 53 and 12 interns were able to elaborate full form of AED & BLS respectively, whereas in posttest all interns were able to answer the full form

DISCUSSION –

In this study all the participants had attempted every question, as instructed to them before distribution of questionnaire. It is essential and important that every medical student especially interns should be aware of Basic Life Support. They should be competent and confident enough to resuscitate from the very beginning of the internship.

Present study revealed that post training mean score (17.60) was significantly high as compared pre training mean score (10.39) ($p = <0.01$). It suggests that there was insufficient awareness among interns before the beginning of internship. Similarly, George et al found that post-test mean score was significantly high compared to pretest mean score ($p = <0.01$)² also study conducted by Owujuyigbe, et al among Nigerian dental students found that post-test mean score (8.04 ± 1.47) was significantly high compared to pretest mean score (4.7 ± 1.47) ($p = <0.01$)¹⁰. Whereas the study conducted by Alsayil et al revealed that more than half of medical and nursing students (59.6%) had insufficient awareness of BLS and even 44% of them did not identify the correct meaning of the abbreviation of BLS⁵. In our study only 12 (12.6%) interns correctly answered that BLS stands for “basic life support”. Also study conducted by Akoijam et al found 65% interns had correctly answered the abbreviation BLS³.

In our study 12.76% interns had score between 70%-89% in pre-test which is consistent with study conducted by Gajjar et al where 15.57% interns scored between 70%-89%⁶.

The study conducted by Chaudhary et al among the medical and paramedical staffs, it was found that after the end of BLS training session there was a significant improvement in the knowledge as compared to that of pre training¹¹.

Pre-test results shows that the knowledge and awareness among interns is insufficient. There is need to improve the knowledge of the interns for that topic of BLS should be incorporated into the undergraduate curriculum every year with focus on development of skill to deliver proper BLS.

Limitations – We have only studied the knowledge regarding BLS but not assessed their skills.

Source of support – nil

Conflicts of interest – nil

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