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Original Research Article

A cross-sectional study on awareness of Basic Life Support among final year students and interns in a medical college in Mandya, Karnataka

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Abstract: Basic life support (BLS) is a life saving procedure and adequate knowledge and skills related to BLS are essential for all medical students. This study is undertaken to compare knowledge and practice related to Basic Life Support between final year students and interns. The participants were all final year medical students and interns of Mandya Institute of Medical Sciences, Mandya. All final year undergraduate students (Group A) and interns (Group B) who were at the time of data collection were included. Students are advised to read carefully and allowed to tick one best response among the options. Data was entered in excel sheet and results were expressed in terms of percentage and proportions. Total of 180 students participated. Group A had 90 students and group B had 90 interns. An average correct response from both the group was 68.72 (76.4%). Group B with interns (69.1, 76.8%) had marginally higher correct response than group A, final year students (68.6, 75.9%). But there was a significant difference in pattern of correct response between both the groups. Among knowledge based questioners (Part 1), final year students (68, 75.6%) had more corrected answers than interns (62, 68.9%).The study showed poor knowledge about BLS among the final year medical students and interns. The knowledge and practice varied between students and interns. More practical based teaching should be employed in MBBS curriculum. Periodical reinforcement and refresher courses should be part of curriculum.
Keywords: Basic life support, Medical students, Interns

INTRODUCTION

Basic life support (BLS), provided at the right time greatly improves survival during cardiac arrest due to varied etiology. Fundamental aspects of BLS include immediate recognition of sudden cardiac arrest (SCA) and activation of the emergency response system, early cardiopulmonary resuscitation (*CPR*), and rapid defibrillation with an automated external defibrillator (*AED)* [1]. Being a life saving procedure adequate knowledge and skills related to BLS are essential. But studies conducted among medical students all over the world report less than satisfactory knowledge among this community. Also, retention of knowledge and skills related to BLS deteriorates with increasing duration without periodic refresher training [2-4]. However, interns are expected to have more practical knowledge in managing many trauma and critically ill patients than final year students. Thus this study is undertaken to compare knowledge and attitudes related to Basic Life Support between final year students and interns.

MATERIAL & METHODS

The participants were all final year medical students and interns of Mandya Institute of Medical Sciences, Mandya. All final year undergraduate students (Group A) and interns (Group B) who were at the time of data collection were included. All the participants who give their consent to take part were included in the study. All the students who declined to participate in the study were excluded. The survey contained 20 questions on BLS (Appendix 1) and was prepared using the advanced cardiac life support manual posted in Indian Journal of anesthesia 2010. The questionnaire was previously used and validated by a study conducted in India with a very large number of respondents [5]. The questionnaires were divided into two parts. Part 1 consisting of 12 questions contains theoretical questions which assess knowledge of the students and second part with 8 questions are practical oriented and assess students practice (Appendix 1). Students are advised to read carefully and allowed to

tick one best response among the options. The options given so is entered in excel sheet and results were expressed in terms of percentage and proportions.

RESULTS

Total of 180 students participated. Group A had 90 students and group B had 90 interns. No one student had all correct response. An average correct response from both the group was 68.72 (76.4%). Group B with interns (69.1, 76.8%) had marginally better correct response rate than group A, final year students (68.6, 75.9%).

But there was a significant difference in pattern of correct response between both the groups. Among knowledge based questioners (Part 1, Table 1), final year students (68, 75.6%) had more corrected answers than interns (62, 68.9%). Whereas among part 2 (Table 2) questionnaires which included practical orientated questions, interns (79.9, 88.8%) had more correct answers than final year students (68.9, 76.6%).

Six students (3.3%) did not identify the correct meaning of the abbreviation BLS. Similarly exact location chest compressions in adults were known to most of the students but it was less known in infants. Similarly difference in response to each question was shown in table1.

Table-1: Part 1 questionnaire response from Group A (Final year students) & Group B (Interns)

Question	Number of correct responses		Number of incorrect responses	
	Group A	Group B	Group A	Group B
Abbreviation of BLS	85	89	5	1
Location of chest compression in adults	80	75	10	5
Location of chest compression in an infant	72	61	18	29
Rescue breathing in infants	54	39	36	51
Depth of chest compression in adults	65	57	25	33
Depth of chest compression in pediatrics	52	45	38	45
Location of chest compression in neonates	66	58	24	32
Rate of chest compression in adults and children	72	62	18	28
Chest compression-ventilation ratio in adults	67	65	23	25
Chest compression-ventilation ratio in newborns	52	48	38	42
Meaning of AED	82	78	8	12
Meaning of EMS	69	66	21	24
Average score	**68**	**62**	**22**	**27.5**
Percentage	**75.6**	**68.9**	**24.4**	**31.1**

Table-2: Part 2 questionnaire response from Group A (Final year students) & Group B (Interns)

Question	Number of correct responses		Number of incorrect responses	
	Group A	Group B	Group A	Group B
Awareness of CPR without mouth-to-mouth breathing	63	74	27	16
Safety in BLS	67	80	23	10
Activating EMS	64	73	26	17
First response in suspected foreign body obstruction in an adult	76	83	14	7
First response in severe form of foreign body obstruction in an infant	72	84	18	6
Need of recovery position	61	77	29	13
Recognition of stroke and appropriate immediate action	74	86	16	4
Recognition of ACS and appropriate immediate action	74	82	16	8
Average score	**68.9**	**79.9**	**21.1**	**10.1**
Percentage	**76.6**	**88.8**	**23.4**	**11.2**

DISCUSSION

Interns and casualty medical officers are the first health care providers in the majority of medical colleges across India. Therefore, BLS knowledge and skills are essential for the interns. Usually in 6th term BLS is taught to the medical students. But knowledge and skills related to BLS deteriorates slowly with time. Retention of the knowledge is challenging and ongoing training is essential. Many studies are published on KAP about BLS among medical students, pharmacy,

nursing and dental students [6-9]. This study highlights the basic knowledge and practice among final year students and interns. Among both group an average of 76.4% questions were correct indicating students have fair knowledge on BLS. This results was similar to a study by srinivas *et al*. were final year students had 70% correct response [10]. But in a study by chandrashekar *et al.* showed that medical, dental and nursing students and faculty in the study group were severely lacking in the awareness of BLS and awareness of BLS was very poor in all the students [5].Grouping the questions into knowledge and practical based, showed interesting pattern of response among students and interns. Interns did fairly well with real life situations but had poor response to theoretical questions. The findings stress the need for periodic refresher courses. Also, to update to new guidelines these refresher courses are much helpful. The need for optimal refresher training has also been stressed in many other studies [11, 12]. Chamberlain *et al.* also recommended repeated refresher training [13]. Whereas final year students demonstrated good response for the questions in part 1 which are mainly theoretical. Thus there is a need for increasing practical skills and techniques among final year students.

CONCLUSION

The study showed poor knowledge about BLS among the final year medical students and interns. The knowledge and practice varied between students and interns. More practical based teaching should be employed in MBBS curriculum. Periodical reinforcement and refresher courses should be part of curriculum.

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Appendix 1: BLS questionnaire

1. What does the abbreviation BLS stand for?
   a. Best Life Support
   b. Basic Life Support
   c. Basic Lung Support
   d. Basic Life Services

2. When you find someone unresponsive in the middle of the road, what should your first response be? (Note: You are alone)
   a. Open airway
   b. Start chest compression
   c. Look for safety
   d. Give two breathings

3. If you confirm somebody is not responding to you even after shaking and shouting at him, what should your immediate action be?
   a. Start CPR

b. Activate EMS
c. Put him in recovery position
d. Observe

4. What is the location for chest compressions?
a. Left side of the chest
b. Right side of the chest
c. Mid chest
d. Xiphisternum

5. What is the location for chest compressions in an infant?
a. One finger breadth below the nipple line
b. One finger breadth above the nipple line
c. At the intermammary line
d. At Xiphisternum

6. If you do not want to give mouth-to-mouth CPR, which of the following is NOT an appropriate course of action?
a. Mouth-mask ventilation and chest compression
b. Chest compression only
c. Bag mask ventilation with chest compression
d. No CPR

7. How do you give rescue breaths to infants?
a. Mouth-to-mouth with nose pinched
b. Mouth-to-mouth and nose
c. Mouth-to-nose only
d. Mouth-to-mouth without nose pinched

8. What is the correct depth of chest compression for adults?
a. 1½ – 2 inches
b. 2½ – 3 inches
c. 1 – 1½ inches
d. ½ – 1 inch

9. What is the correct depth of compression for children?
a. 1½ – 2 inches
b. 2½ – 3 inches
c. Onehalf to onethird depth of chest
d. ½ – 1 CM

10. What is the correct depth of compression for neonates?
a. 1½ – 2 inches
b. 2½ – 3 inches
c. ½ – 1 CM
d. Onehalf to onethird depth of chest

11. What is the correct rate of chest compression for adults and children?
a. 100/min
b. 120/min
c. 80/min
d. 70/min

12. What is the correct ratio of CPR for an adult when there is a single rescuer?
a. 15:2
b. 5:1
c. 30:2
d. 15:1

13. What is the correct chest compression: ventilation ratio for a neonate?
a. 15:2
b. 5:1
c. 30:2
d. 3:1

14. What does the abbreviation AED stand for?
a. Automated External Defibrillator
b. Automated Electrical Defibrillator
c. Advanced Electrical Defibrillator
d. Advanced External Defibrillator

15. What does the abbreviation EMS stand for?
a. Effective Medical Services
b. Emergency Management Services
c. Emergency Medical Services
d. External Medical Support

16. If you and your friend are having food in a canteen and your friend suddenly starts expressing symptoms of choking, what should your first response be?
a. Give abdominal thrusts
b. Give chest compression
c. Confirm foreign body aspiration by talking to him
d. Give back blows

17. You witness an infant who suddenly starts to choke while playing with a toy. You have confirmed that he is unable to cry and/or cough. What should your first response be?
a. Start CPR immediately
b. Try to remove the suspected foreign body using a blind finger sweeping technique
c. Back blows and chest compression of five cycles each then open the mouth and remove foreign body only when it is seen
d. Give water to the infant

18. You witness an adult unresponsive victim who has just been removed from submersion in fresh water. He has spontaneous breathing, but is unresponsive. What should your first response be?
a. CPR for 2minutes and inform EMS
b. CPR for 1minute and inform EMS
c. Compress the abdomen to remove the water
d. Keep him in recovery position

19. You notice that your colleague has suddenly developed slurring of speech and weakness of the right upper limb. Which one of the following should be done?
a. Offer him some drinks, probably hypoglycemia
b. Possibly stroke, get him to the nearest clinic
c. Possibly stroke, he may require thrombolysis and hence activate emergency medical services
d. May be due to sleep deprivation, make him sleep

20. A 50-year-old gentleman presents with retrosternal chest discomfort, profuse sweating and vomiting. What is the most appropriate course of action?
a. Probably myocardial infarction, hence activates EMS, give an aspirin tablet and allow him to rest
b. Probably acid peptic disease, give antacid and Ranitidine
c. Probably indigestion, hence give soda
d. Walk him to the nearest clinic