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International Journal of Current Research
Vol. 9, Issue, 09, pp.58389-58392, September, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

DENTIST AWARENESS ABOUT BASIC LIFE SUPPORT IN DENTAL COLLEGES OF GHAZIABAD U.P INDIA

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ARTICLE INFO

Article History:
Received 22nd June, 2017
Received in revised form
10th July, 2017
Accepted 15th August, 2017
Published online 30th September, 2017

Key words:

Basic life support,
First aid,
Emergency,
Resuscitation,
Airway obstruction,
Trauma.

ABSTRACT

Aim: to assess Dentist Awareness of Basic life Support (BLS) among Dental colleges of Ghaziabad U.P India.

Materials and Methods: A cross-sectional questionnaire survey was carried out in randomly selected 3 dental colleges out of 6, pursuing post-graduation courses in Ghaziabad. A questionnaire with 20 questions regarding the awareness and skills involved in BLS was used to assess the levels of awareness to BLS and its practical knowledge. The aspects on which the subjects were interrogated were about the abbreviation of BLS, AED and EMS (Emergency Medical Service), sequential steps in BLS, assessment and resuscitation techniques with regard to airway, breathing, circulation in unresponsive victims of different age groups, techniques regarding removal of foreign body obstruction, recognition of early signs of stroke and acute coronary syndrome

Results: None among them had complete Knowledge of BLS. 248 out of 340(73%) had secured less than 50% marks. In the present study BDS faculty and postgraduates of dental sciences were same but MDS faculties were somewhat aware about BLS. On comparison MDS Faculty showed more awareness as compared to PG students and BDS faculty.

Conclusions: It is also equally important that teachers, school children, public and all lay persons from the community be taught the facts of basic life support and first aid.

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Citation: Dr. Deepa Tomar, Dr. Ipseeta Menon, Dr. Upasana Tyagi, Dr. Jyoti Goyal and Dr. Ritu Gupta, 2017. "Dentist awareness about basic life support in dental colleges of Ghaziabad U.P India", *International Journal of Current Research*, 9, (09), 58389-58392.

INTRODUCTION

Basic life support (BLS) is a level of medical care which is used for victims of life-threatening illnesses or injuries until they can be given full medical care at a hospital. (Sasson *et al*., 2010) It can be provided by trained medical personnel, including emergency medical technicians, paramedics, and by laypersons who have received BLS training. (Sasson *et al*., 2010; Cardiopulmonary resuscitation: A statement by the Ad Hoc Committee on Cardiopulmonary Resuscitation of the Division of Medical Sciences, 1966) Basic life support (BLS) includes recognition of signs of sudden cardiac arrest (SCA), heart attack, stroke, foreign-body airway obstruction (FBAO); cardiopulmonary resuscitation (CPR); and defibrillation with an automated external defibrillator (AED). (American Heart Association. BLS & ACLS Manual, 2010) It is very important that every person in the community know about BLS to save lives and improve the quality of community health. (American Heart Association. BLS & ACLS Manual, 2010; Brahams, 1989)

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MATERIALS AND METHODS

A cross-sectional questionnaire survey was carried out in randomly selected 3 dental colleges out of 6 pursuing post-graduation courses in Ghaziabad. A prior permission was obtained from the concerned college authorities. The study research protocol will be submitted for approval and ethical clearance from the Institutional Ethical Committee of ITS-CDSR Muradnagar, Ghaziabad. After obtaining approval and ethical clearance of research protocol study will be implemented on scheduled dates. Written consents will be obtained. The study was conducted by assessing responses to 20 selected basic questions regarding BLS among M.D.S Staff, P.G Studentand B.D.S Staff. A questionnaire with 20 questions regarding the awareness and skills involved in BLS was used to assess the levels of awareness to BLS and its practical knowledge. The aspects on which they were interrogated were about the abbreviation of BLS, AED and EMS (Emergency Medical Service), sequential steps in BLS, assessment and resuscitation techniques with regard to airway, breathing, circulation in unresponsive victims of different age groups, techniques regarding removal of foreign body obstruction, recognition of early signs of stroke and acute coronary syndrome (Table 1).

Table 1. Questionnaire used to assess awareness about BLS among dental fraternity

S.NO.	QUES.	Option A	Option B	Option C	Option D	Option E
1.	What is the abbreviation of "BLS"?	Best Life Support	Basic Life Support	Basic Lung Support	Basic Life Services	I don't know
2.	When you find someone unresponsive in the middle of the road, what will be your first response?	Open airway	Start chest compression	Look for safety	Give two breathings	I don't know
3.	What does abbreviation of EMS stand for?	Effective Medical Services	Emergency Management Sciences	Emergency Medical Services	External Medical Support	I don't know
4.	What does abbreviation AED stands for?	Automated External Defibrillator	Automated Electrical Defibrillator	Advanced Electrical Defibrillator	Advanced External Defibrillator	I don't know
5.	If you confirm somebody is not responding to you even after shaking and shouting at him, what will be your immediate action?	Start CPR	Activate EMS	Put him in recovery position	Observe	I don't know
6.	What is the location for chest compression in a patient having no obvious injuries?	Left side of the chest	Right side of the chest	Mid chest	Xiphisternum	I don't know
7.	What is the location for chest compression in infants having no chest injury?	One finger breadth below the nipple line	One finger breadth above the nipple line	At the intermammary line	At Xiphisternum	I don't know
8.	If you do not want to give mouth-to-mouth CPR, the following can be done *EXCEPT*	Mouth-mask ventilation and chest compression	Chest compression only	Bag mask ventilation with chest compression	No CPR	I don't know
9.	How do you give rescue breathing in infants?	Mouth-to-mouth with nose pinched	Mouth-to-mouth and nose	Mouth-to-nose only	Mouth-to-mouth without nose pinched	I don't know
10.	Depth of compression in adults during CPR	1½ – 2 inches	2½ – 3 inches	1 – 1½ inches	½ – 1 inch	I don't know
11.	Depth of compression in Children during CPR	1½ – 2 inches	2½ – 3 inches	One-half to one-third depth of chest	½ – 1 CM	I don't know
12.	Depth of compression in neonates during CPR	1½ – 2 inches	2½ – 3 inches	½ – 1 CM	One-half to one-third depth of chest	I don't know
13.	Rate of chest compression in adult and Children during CPR	100 / min	120 / min	80 / min	70 / min	I don't know
14.	Ratio of CPR, single rescuer in adult is	15:2	5:1	30:2	15:1	I don't know
15.	In a new born the chest compression and ventilation ratio is	15:2	5:1	30:2	3:1	I don't know
16.	If you and your friend are having food in a canteen and suddenly your friend starts expressing symptoms of choking, what will be your first response?	Give abdominal thrusts	Give chest compression	Confirm foreign body aspiration by talking to him	Give back blows	I don't know
17.	You are witnessing an infant who suddenly started choking while he was playing with the toy, you have confirmed that he is unableto cry (or) cough, what will be your first response?	Start CPR immediately	Try to remove the suspected foreign body by blind fingers weeping technique	Back blows and chest compression of five cycles each then open the mouth and remove foreign body only when it is seen	Give water to the infant	I don't know
18.	You are witnessing an adult unresponsive victim who has been submerged in fresh water and just removed from it. He hasspontaneous breathing, but he is unresponsive. What is the first step?	CPR for two minutes and inform EMS	CPR for one minute and inform EMS	Compress the abdomen to remove the water	Keep him in recovery position	I don't know
19.	You noticed that your colleague has suddenly developed slurring of speech and weakness of right upper limb. Which one of the following can be done?	Offer him some drinks, probably hypoglycemia	Possibly stroke, get him to the nearest clinic	Possibly stroke, he may require thrombolysis and hence activate emergency medical services	May be due to sleep deprivation, make him sleep.	I don't know
20.	A 50-year-old gentleman with retro sternal chest discomfort, profuse sweating and vomiting. What is next?	Probably myocardial infarction, hence activates EMS, give an aspirin tablet and allow him to rest	Probably acid peptic disease, give antacid and Ranitidine	Probably indigestion, hence give soda	Take him by walk to the nearest clinic.	I don't know

Statistical analysis

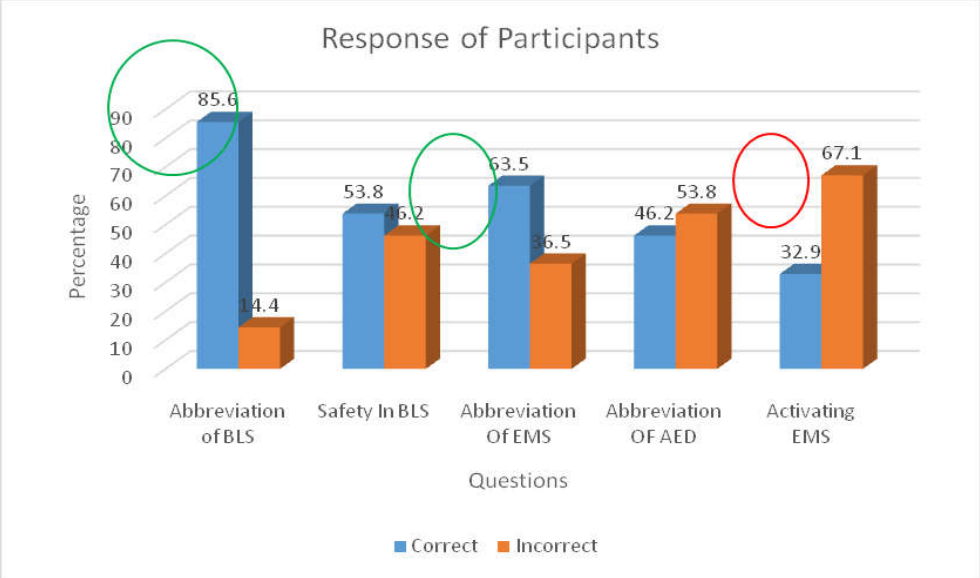
This study used descriptive statistics for general data presentation (pie-chart and Graphs) by using SPSS 20 version.

RESULTS

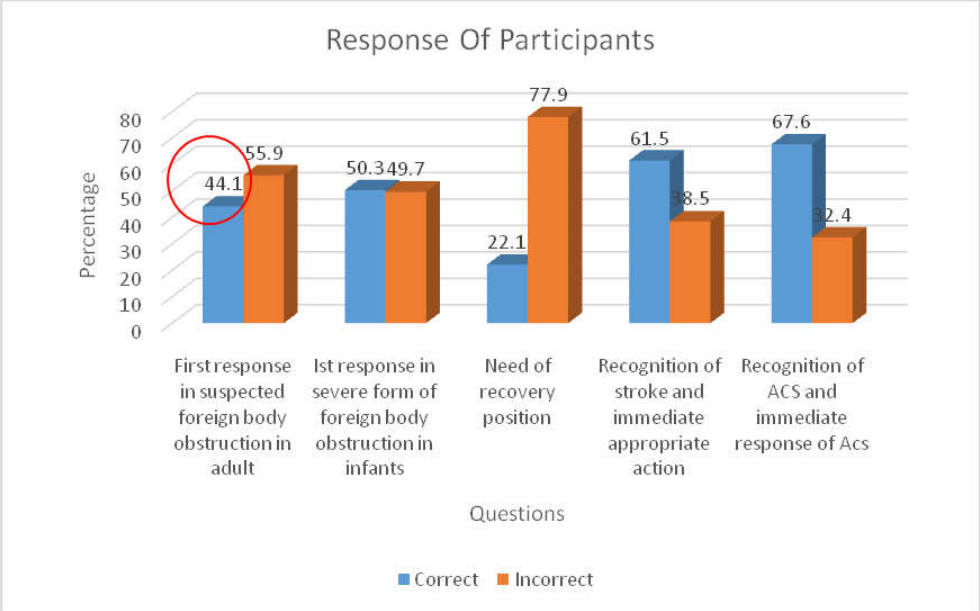
After excluding, the incomplete response forms the data was analyzed on 340 responders. The results were analyzed using an answer key prepared from the advanced cardiac life support manual (Table 2). Out of 340 responders 144 were male and 196 were female. 233 were MDS staff, 81 were post graduate students and 26 were BDS staff. 85.6% of the responders knew while 24.4% of the responders did not know the abbreviation of BLS as Basic life support. 46.2% failed to insist on looking for safety as the first step in BLS. 36.5% did not know the abbreviation of EMS 'Emergency Medical Service'. 53.8% did not know the abbreviation of AED was 'automated external defibrillator'. 32.9% failed to insist on activating EMS immediately after confirming the unresponsiveness in an adult. 65.6% did not know that the right location of chest compression was the mid chest. 72.4% of the responders did not know that the correct location of chest compression in an

Table 2. Answer Key

1 (b)	6 (c)	11 (d)	16 (c)
2 (c)	7 (a)	12 (a)	17 (c)
3 (c)	8 (d)	13 (c)	18 (d)
4 (a)	9 (b)	14 (d)	19 (c)
5 (b)	10 (c)	15 (a)	20 (a)



Graph 1. Results of awareness about BLS among dental fraternity



Graph 2. Results of awareness about management of emergency condition (foreign body obstruction) among dental fraternity

infant was one finger breadth just below the nipple line. 603.2% of the responders did not know alternative techniques of resuscitation when mouth-to-mouth ventilation was not opted. 65.9% of the responders failed to select mouth-to-mouth and nose technique as the rescue breathing for infants. 69.4% did not know that the depth of chest compression in an adult was 1.5 to 2 inches. 81.5% did not know that the depth of chest compression in a child was one-third to one-half the depth of the chest. 83.8% did not know that the chest compression in an infant was one-third to one-half the depth of the chest. Only 50.6% of the responders answered the rate of chest compression as 100/minute in adults and children CPR. Only 35.9% of the responders had correctly answered that the compression ventilation ratio in a child and adult single rescuer CPR was 30:2. Only 33.5% knew that the ratio of compression ventilation in a new born was 3:1. 55.9% did not know that the first step in helping a suspected foreign body obstruction victim is to confirm the severity of obstruction by talking to him. 50.3% were aware about the right technique of foreign body removal from an infant. Only 22.1% knew about the role of the recovery position in a spontaneously breathing unresponsive victim. 60.1% of the responders did not know the early signs of stroke and only 32.4% percent new how to recognise and help a patient with acute coronary syndrome. None among them had complete Knowledge of BLS. 248 out of 340(73%) had secured less than 50% marks

DISCUSSION

Life threatening emergencies can occur anytime and anywhere. The most urgent of all is CPA. There have been reports of CPA and deaths in dental clinics. (Brahams, 1989; Hunter, 1991; McCarthy, 1972) Though many dentists claim that they have never witnessed CPA, the lack of training and incompetence to deal with these emergencies can have tragic and legal consequences. (Brahams, 1989) There are only few studies on the competence of dental practitioners to resuscitate patients from CPA. (Chapman, 1997) However, the common factor in all is an inadequate awareness and knowledge among dentists regarding BLS and CPR. In a survey conducted by Singh *et al***.** among 241 dentists regarding CPR and observed that though 75.9% of dentists had received information about CPR, 56.0% had the correct concept of performing it, and only 12% had received practical training in BLS. (Singh *et al*., 2011) In our study, none of the responders could answer all questions correctly and none had received any formal training. In a study to evaluate the knowledge of CPR among dentists in Iran, it was noted that only 37% had a correct concept of BLS and CPR. None of them had received any practical training, though 4% admitted that they had witnessed CPA in their clinics. (Kavari and Chohedri, 2007) Girdler *et al*. found the total prevalence of all emergency events (excluding syncope) was 0.7 cases per dentist per year. Only 20.8% of dentists felt competent to diagnose the cause of a collapse in the dental surgery. However, the majority believed that they would be able to undertake initial treatment of most common emergencies. Despite this, more than 50% felt they were unable to manage a patient of myocardial infarction or anaphylaxis, and 49.7% did not know how to insert an oral airway or undertake an intravenous injection. (Girdler and Smith, 1999) Chapman and Hussain reported that none of the dental practitioners they evaluated had the practical skills to perform quality CPR. (Chapman, 1995; Hussain *et al*., 1992) Arsati *et al*. in 2010 found that though the occurrence of life-threatening medical emergencies like anaphylaxis, myocardial infarction, cardiac arrest, and cerebrovascular accident is rare in Brazilian dental clinics, dentists are not fully prepared to manage medical emergencies and have insufficient experience training in CPR. (Arsati *et al*., 2010)

Summary

Our study showed that BLS skills are highly lacking among dentists. It is now essential to include this in the teaching curriculum of all medical, dental, nursing, and paramedical curricula. When these people are trained, then only can they spread awareness among general public about the facts of BLS.

Conclusion

Awareness of Basic Life Support (BLS) among B.D.S Staff, Post Graduates and M.D.S Staff in various colleges is very poor and needs to be improved.

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