



Research Paper

## To study the awareness of Basic Life Support (BLS) among dental interns of various dental colleges in Lucknow city.

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### ABSTRACT-

**Introduction-** BLS is a core skill in which all health care professionals should be proficient, but there is a great deal of variation in the training provided at the undergraduate level. Keeping in mind that dental students have little understanding of medical emergency management and that there is very little in-depth data about the importance dental students place on acquiring competence in this area of patient care, the purpose of this study was to assess the awareness of Basic Life Support among dental interns of various dental colleges in Lucknow city. **Material & Methods-** This cross-sectional study was conducted by assessing responses to 20 selected multiple choice questions regarding BLS among dental interns in the month of april,2017 in Lucknow, India. A total of 520 dental interns from different dental colleges of Lucknow city participated in the study. All participants were given a printed questionnaire of 20 multiple choice questions regarding awareness, knowledge and attitude towards BLS and skills involved in BLS. **Result-** This 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 curriculum. **Conclusion-** This study suggests that presently the dental community – students and practitioners are not adequately prepared to handle such a crisis. Hence the need to update knowledge and skills pertaining not only to BLS but other commonly possible medical emergencies.

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### I. INTRODUCTION

Life-threatening emergencies can occur anytime, anywhere and to anyone. Such situations are somewhat more likely to occur within the confines of the dental office due to increased level of stress which is often present. For example, Fear and anxiety may make these patients prone to medical emergencies such as syncope and hyperventilation.

Effective management of an emergency situation in the dental office is ultimately the dentist's responsibility. The lack of training and inability to cope with medical emergencies can lead to tragic consequences and sometimes legal complications. For this reason, all health professionals, including dentists must be well prepared to attend to medical emergencies.<sup>1</sup>

Basic life support (BLS) is the foundation for saving life following cardiac arrest. Fundamental aspects of BLS include 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).<sup>2</sup> Initial recognition and response to heart attack and stroke are also considered part of BLS. Basic life support (BLS) also includes supporting breathing, circulation and maintaining an airway without using any equipment other than a simple airway device or protective shield.<sup>3</sup>

The American Heart Association advocates a "chain of survival" for all victims needing cardiopulmonary resuscitation (CPR) including-early recognition of a victim, early CPR, rapid defibrillation, effective advanced life support and integrated post-cardiac arrest care. Amongst these, the first three steps

constitute what is known as basic life support (BLS), a key component, which improves the chances of survival following cardiac arrest. As the central nervous system can undergo irreversible damage within 3-4 min of hypoxia or anoxia, early and effective BLS, including defibrillation can greatly improve the chances of survival.<sup>4</sup> In our country, though it is increasingly becoming a part of teaching curriculum of medical students, awareness about the correct technique amongst dental practitioners is still questionable.<sup>5</sup>

Keeping in mind that dental students have little understanding of medical emergency management and that there is very little in-depth data about the importance dental students place on acquiring competence in this area of patient care, the purpose of this study was to assess the awareness of Basic Life Support among dental interns of various dental colleges in Lucknow city.

## II. AIMS & OBJECTIVES

### Aim:-

- To study the awareness of Basic Life Support (BLS) among dental interns of various dental colleges in Lucknow city.

### Objectives:-

- Assessment of knowledge of dental interns regarding Basic Life Support (BLS)
- To collect baseline data.
- To organise training programmes to increase awareness and practice of BLS for the dental interns.

## III. MATERIAL & METHODS

**STUDY DESIGN-** A cross-sectional study was conducted by assessing responses to 20 selected multiple choice questions regarding BLS among dental interns in the month of april,2017 in Lucknow, India.

**STUDY POPULATION-** A total of 520 dental interns from different dental colleges of Lucknow city participated in the study.

**ETHICAL CLEARANCE AND CONSENT-** Ethical clearance was obtained from Institutional Ethical Committee of Babu Banarasi Das College of Dental Sciences, BBDU, Lucknow. Verbal consent was obtained from all the subjects participating in the study.

**QUESTIONNAIRE-** All participants were given a printed questionnaire of 20 multiple choice questions regarding awareness, knowledge and attitude towards BLS and skills involved in BLS. The questionnaire was designed based on American Heart Association (AHA) guidelines and the answer keys for the core questions on knowledge of BLS were generated using Basic life support manual from American Heart Association. The questionnaire was designed to include questions regarding abbreviations commonly used, resuscitation techniques with regard to circulation, airway and breathing in case of unresponsive victims of various age groups and response in case of emergency conditions.

The questions covered various aspects of BLS including abbreviations of BLS and AED (automated external defibrillator) assessment of patients, resuscitation techniques, use of defibrillators and recognizing and managing victims of stroke, electrocution, road traffic accidents, and myocardial infarction.

The questionnaire was given to the participating interns and the forms were collected immediately after it was filled completely. Those who were not willing to participate or returned incomplete questionnaires were excluded from the study.

## IV. RESULT

A total of 520 interns were interviewed through a questionnaire from different dental colleges of Lucknow city for the assessment of knowledge of dental interns regarding Basic Life Support (BLS).

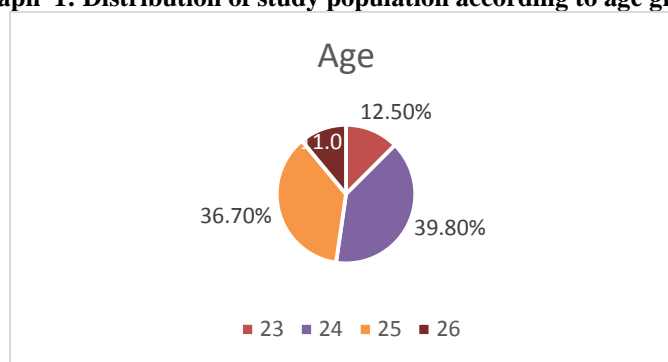
All the questions were answered by the interns and it was seen that most of the interns gave wrong answers for many questions.

**Table 1, graph 1,** shows the age distribution of the population. A total of 65 (12.5%) interns were 23 year old, 207 (39.8%) interns were 24 year old, 191 (36.7%) interns were 25 year old and 57 (11.0%) interns were 26 year old respectively.

**Table 1: Age wise distribution of study subjects:**

		N	%
Age	23	65	12.5%
Mean±SD			
24.46±0.85	24	207	39.8%
	25	191	36.7%
	26	57	11.0%

**Graph 1: Distribution of study population according to age group:**

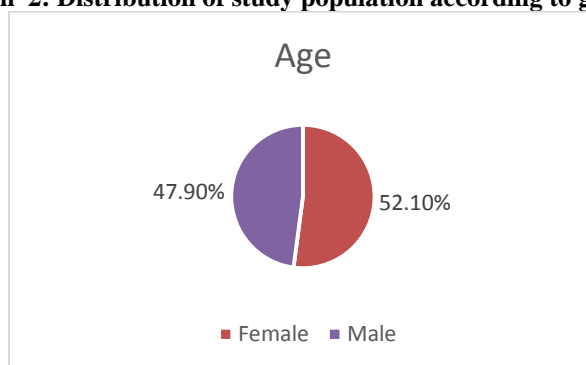


**Table 2, graph 2,** shows gender wise distribution of the study subjects. A total of 271 (52.1%) of the interns were females and 249 (47.9%) of the interns were males.

**Table 2: Gender wise distribution of study subjects:**

		N	%
Gender	female	271	52.1%
	male	249	47.9%

**Graph 2: Distribution of study population according to gender:**



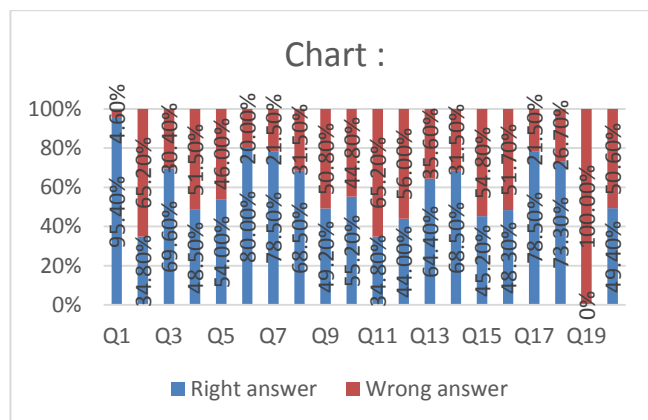
**Table 3** shows answers given by the study participants for different questions. For every questions there were 4 options and study participants answered the questions according to the knowledge they had regarding the Basic Life Support.

		N	%
q1	a	496	95.4%
	b	13	2.5%
	c	10	1.9%
	d	1	.2%
q2	b	339	65.2%
	c	181	34.8%
q3	a	158	30.4%
	b	362	69.6%
q4	a	252	48.5%
	b	104	20.0%
	c	164	31.5%
q5	a	158	30.4%
	b	81	15.6%
	c	281	54.0%
q6	a	416	80.0%
	c	104	20.0%
q7	a	112	21.5%
	b	408	78.5%
q8	a	356	68.5%
	b	6	1.2%
	c	158	30.4%
q9	a	256	49.2%

q10	b	264	50.8%
	a	287	55.2%
	b	158	30.4%
	c	75	14.4%
q11	a	181	34.8%
	b	181	34.8%
	c	158	30.4%
q12	a	229	44.0%
	b	210	40.4%
	c	81	15.6%
q13	a	110	21.2%
	b	75	14.4%
	c	335	64.4%
q14	a	356	68.5%
	c	164	31.5%
q15	a	285	54.8%
	c	235	45.2%
q16	a	251	48.3%
	c	269	51.7%
q17	a	408	78.5%
	c	112	21.5%
q18	a	139	26.7%
	c	381	73.3%
q19	a	146	28.1%
	b	374	71.9%
q20	b	263	50.6%
	c	257	49.4%

Table 4 shows the total number and percentage of the study population that gave right and wrong answers for each question. Maximum number of study subjects, 496 (95.4%) interns gave correct answer for **question 1** and no study subject gave correct answer for **question 19**.

	Right answer		Wrong answer	
	N	%	N	%
Q1	496	95.40%	24	4.600%
Q2	181	34.80%	339	65.200%
Q3	362	69.60%	158	30.400%
Q4	252	48.50%	268	51.500%
Q5	281	54.00%	239	46.000%
Q6	416	80.00%	104	20.000%
Q7	408	78.50%	112	21.500%
Q8	356	68.50%	164	31.500%
Q9	256	49.20%	264	50.800%
Q10	287	55.20%	233	44.800%
Q11	181	34.80%	339	65.200%
Q12	229	44.00%	291	56.000%
Q13	335	64.40%	185	35.600%
Q14	356	68.50%	164	31.500%
Q15	235	45.20%	285	54.800%
Q16	251	48.30%	269	51.700%
Q17	408	78.50%	112	21.500%
Q18	381	73.30%	139	26.700%
Q19	0	0%	520	100.000%
Q20	257	49.40%	263	50.600%



## V. DISCUSSION

This 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. It is now important to standardize training in BLS and make it a mandatory component for all dental, medical, nursing and paramedical undergraduate curriculums.

This study emphasizes the cognitive approach to the general perception and skill of BLS. The main objective of this study was the Assessment of knowledge of dental interns regarding Basic Life Support (BLS).

Cardiac arrest begins as abrupt cessation of normal circulation of blood due to ineffective contraction of heart. This leads to decreased circulation and decreased oxygen supply to all organs of the body. Lack of oxygen supply to brain may lead to respiratory depression progresses to ischemia, leaving the patient with less than 10 min to survive.<sup>6</sup>

Many Indian medical, dental, nursing, and paramedical students might not even learn the basics of this very essential topic in class with hands-on practice before they become graduates, except for a few students. On the other hand, they are expected to deliver CPR from the very first day of their employment.<sup>7</sup>

Certain questions where majority of candidates failed to answer were: location of chest compression, compression ventilation ratio in child and in adults, depth of chest compression. Shanta Chandrasekaran et al reported awareness of basic life support among medical, dental, nursing students and doctors, found only 2 out of 1054 had secured 80-90% marks.<sup>2</sup>

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<sup>8</sup>. In our study, none of the responders could answer all questions correctly and none had received any formal training..

In the present study, only 1 question could get a correct answer from more than 95% of the study subjects. Younus Md et al also concluded that Knowledge and practice skills of BLS/CPR are poor in medical and nursing students although they have shown an excellent attitude towards it. An organised curriculum for BLS and its protocolized training is the need of the hour in medical education<sup>9</sup>

Alotaibi O concluded in the study that dental students and staff had inadequate basic life support knowledge. However, they had positive attitudes toward it<sup>10</sup>

In this study, one question (related to the abbreviation of BLS) was correctly answered by 95% of the participants, whereas rest questions were correctly answered by about half of the participants. These results are similar to those obtained by Roshana et al., who found that one question (related to the abbreviation of CPR) was correctly answered by 96.7% of the participants, whereas the rest of the questions were correctly answered by less than 50% of the participants.

## VI. CONCLUSION & RECOMMENDATION

Dentistry is a specialized branch and has made immense progress. To ensure better and safer health-care, it is essential for all dental practitioners to be well versed with BLS. Not only BLS, other basic procedures such as use of emergency resuscitation equipment and drugs (AMBU (artificial manual breathing unit) bag, laryngoscope, drugs such as adrenaline and atropine) are highly desirable.

The general public expects and demands that the dentists be able to manage the common medical emergencies that may occur in dental practice, particularly those related to dental treatment and procedures. These emergencies ironically, can occur anytime and can happen to anyone. This study suggests that presently the dental community – students and practitioners are not adequately prepared to handle such a crisis. Hence the

need to update knowledge and skills pertaining not only to BLS but other commonly possible medical emergencies. Repeated training, hands-on practice and practical demonstrations are equally necessary for acquiring practical knowledge.

It is also recommended that the undergraduate courses in dentistry must be revised to insure proper BLS training. Similarly, after graduation, the dentist should regularly take theoretical and practical courses.

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