



KNOWLEDGE AND ATTITUDES OF DENTAL STUDENTS ON BASIC LIFE SUPPORT IN A DENTAL COLLEGE

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Abstract:

Introduction: Basic Life Support (BLS) refers to the care, healthcare providers and public safety professional s provide to patients who are experiencing respiratory arrest, cardiac arrest or airway obstruction. As health care professionals, dental students should be aware of BLS as they may encounter life-threatening medical emergencies.

Objectives: To evaluate knowledge and attitudes of dental students on basic life support training in a dental college.

Methods: A cross-sectional study was done on final years BDS, interns and postgraduates using pretested (Cronbach's alpha =0.95) structured questionnaire in a dental college. A self-administered questionnaire with 20 questions. The questionnaire was given to all the students on the day of the study and also on the next day to the absentees on the previous day. Statistical analysis was done using SPSS 20.

Results: Total 267 students participated in the study. The mean knowledge score for the participants was 5.79. Only 2 participants had a knowledge score of 12(maximum score). Post graduates had more mean knowledge score (6.54) compared to interns and final BDS. Majority of the students rated their knowledge as average and agreed that BLS training should regularly be updated.

Conclusions: IV BDS students and interns had an inadequate knowledge were as postgraduates had an average knowledge of BLS

Keywords: Basic Life Support, Cardiopulmonary resuscitation, Dental students, Post Graduates, Final BDS, Interns.

INTRODUCTION:

The term emergency can be defined as a serious, unexpected, and often dangerous situation requiring immediate action¹. Basic Life Support (BLS) refers to the care healthcare providers and public safety professionals provide to patients who are encountering respiratory arrest, cardiac arrest or airway obstruction. BLS includes psychomotor skills for performing cardiopulmonary resuscitation (CPR), using an automated external defibrillator (AED) and relieving an obstructed airway for patients of all ages².

It is an integral part of emergency as health care professionals, dental practitioners confront life-threatening medical emergencies in their routine practices, it is very important that every person in the community should be acquainted about Basic Life Support to save lives and improve the quality of community health. American Heart Association does not mandate a minimum age requirement for learning CPR. The ability to perform CPR is based more on body strength than age as proven by studies have shown that children as young as nine years old were able to learn and retain CPR skills.

In dentistry, there are many situations where a patient's life becomes critical. A study conducted over a ten year period reviewed how often an emergency occurs in general dental practice and found that on an average a practitioner may experience an emergency in a general dental practice once in every four and a half years³. Oral health practitioners need to have appropriate skills, training and equipment available to deal with potentially life-threatening conditions. The students of health science colleges are the future healthcare providers in the community, which makes their awareness and knowledge of BLS crucial increase patients' chances of survival. At the same time, they can raise the public awareness of BLS through public education which will eventually increase the awareness of community members. The aim of the present study is to evaluate the knowledge and attitudes of dental students on Basic Life Support training in a dental college.

METHODOLOGY:

A cross-sectional study was conducted to assess the knowledge and attitudes of students in BDS IV year, interns and post graduates on BLS training in Sri Sai College of Dental Surgery, Vikarabad. A total of 267 students participated in the study. A self-administered questionnaire was prepared which included demographic details and 20 questions in which 15 are knowledge-based questions and 6 are attitude-based questions, from validated and published questionnaires. The study was approved by the College Institutional Review Board.

A pilot study was carried out on a random sample of 30 students, 10 from each year from BDS IV, interns and postgraduates to note any difficulties confronted during the collection of data from them, the feasibility of conducting the study in the institution premises and the administration of a questionnaire and to check its reliability. Cronbach's alpha for the tool was found to be 0.83 which indicates that the tool was reliable for the population. As this was a whole population study, there was no need for sample estimation. The questionnaire was given to all the students on the day of the study and also on the next day to the absentees on the previous day. Data collected were subjected to statistical analysis.

RESULTS:

From the results of the study, a total of 267 students participated in the study in which the female students out-numbered the male students by 66.7% and 33.3 % respectively. Among all the participants, 71 were IV BDS students, 72 Interns and 124 were postgraduates. Knowledge of students towards BLS has been summarized in TABLE-1.

93.6% of students answered Basic life support as the full form of 'BLS'. 58.4% of students have answered 30:2 ratio of compressions to breaths on adults (one person). 46.1% of students answered mid-chest as the answer for the location of chest compression during CPR in adults, 42.7% of students answered 1 ½ - 2 inches as the answer for depth compressions during CPR in adults.

TABLE-2 - shows the attitude of the students on BLS where 90.3% of students agreed that BLS training should be a part of their medical curriculum. 86.1% of students agreed that it is useful to know about BLS, 83.9% of students agreed BLS training should be repeated regularly to be updated and 48.3% of students answered that no professional training is available as the reason for lack of knowledge about BLS.

TABLE 1: KNOWLEDGE QUESTIONS

S.NO	KNOWLEDGE QUESTIONS	N	%
Q1	What is the full form of "BLS"?		
	Best Life Support	10	3.7%
	Basic Life Support	250	93.6%
	Basic Lung Support	6	2.2
	Basic Life Service	1	4
Q2	Have you ever attended any training on "BLS"?		
	Yes	214	80.1
	No	53	19.9
Q3	Have you ever seen "BLS" (CPR) being done?		
	Yes	187	70.0
	No	80	30.0
Q4	Have you ever done "BLS" (CPR) on patient?		
	YES	33	12.4
	NO	234	87.7

Q5	Mark the ratio of chest compression to breath in adults (one person)? 20:2 3:2 30:2 100:2	45 53 156 13	16.9 19.9 58.4 4.9
Q6	What does abbreviation EMS stands for? Effective medical services Emergency management services Emergency medical services External medical support	12 42 199 14	4.5 15.7 74.5 5.2
Q7	What is the location of chest compression during CPR in adults? Left side of the chest Right side of the chest Mid chest Xiphisternum.	33 36 123 75	12.4 13.5 46.1 28.1
Q8	What is the location of chest compression during CPR in infants? One finger breadth below the nipple line One finger breadth above the nipple line At the intermammary line At xiphisternum	96 59 50 62	36.0 22.1 18.7 23.2
Q9	Depth of compression in adults during CPR? 1 ½ - 2 inches 2 ½ - 3 inches 1 – 1 ½ inches ½ - 1 inch	114 88 55 10	42.7 33.0 20.6 3.7
Q10	Depth of compression in children during CPR? 1 ½ - 2 inches 2 ½ - 3 inches One – half to one third depth of the chest. 1/2 – 1 cm	55 45 116 51	20.6 16.9 43.4 19.1
Q11	If you do not want to give mouth to mouth CPR, the following can be done EXCEPT Mouth mask ventilation and chest compression Chest compressions only Bag mask ventilation with chest compression No CPR	42 47 76 102	15.7 17.6 28.5 38.2
Q12	How do you give rescue breathing in infants? Mouth to mouth breathing with nose pinched Mouth to mouth and nose Mouth to nose only Mouth to mouth without nose pinched.	108 54 28 77	40.4 20.2 10.5 28.8

Q13	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 compressions Confirm foreign body aspiration by talking to him Give back blows	67 35 47 118	25.1 13.1 17.6 44.2
Q14	If you confirm somebody is not responding to you even after shaking and shouting at him, what will be your immediate action? Start CPR Active EMS Put him in recovery position Observe	87 122 40 18	32.6 45.7 15.0 6.7
Q15	A 50-year-old gentleman with retrosternal 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	175 43 14 35	65.5 16.1 5.2 13.1

TABLE-2 ATTITUDE QUESTIONS

S.NO	ATTITUDE QUESTIONS	AGEREE		DON'T KNOW		DISAGREE	
		N	%	N	%	N	%
Q16	BLS training should be a part of your medical curriculum?	241	90.3%	9	3.4%	17	6.4%
Q 17	BLS should be done only in hospital settings?	54	20.2	21	7.9	192	71.9
Q18	Is it useful to know about BLS?	230	86.1	11	4.1	26	9.7
Q19	BLS training should be repeated regularly to be updated?	224	83.9	18	6.7	25	9.4

SNO	ATTITUDE QUESTIONS	N	%
Q20	Please indicate the reason for lack of knowledge about BLS?		
	Busy curriculum	80	30.0
	Lack of interest	58	21.7
	No professional training available	129	48.3
Q21	Please rate yourself on BLS knowledge		
	Poor	33	12.4
	Below average	71	26.6
	Average	149	55.8
	Good	14	5.2

DISCUSSION:

The results of the study revealed that IV BDS students and interns had an inadequate knowledge, postgraduates had an average knowledge of BLS. A majority (93.6%) of students had given Basic life support as the full form of 'BLS. These results were in accordance with the study done by Alotaibi et al⁴, where 92.1% of the study participants answered Basic Life Support as the full form of BLS. This could be because it is a common terminology and had been read in their past educational years.

Cardiopulmonary resuscitation circulates blood that contains oxygen to the vital organs of a patient in cardiac arrest when the heart and breathing have stopped. It comprises chest compressions and ventilation accompanied by the use of an automated external defibrillator. Chest compressions should be given at the correct rate of at least 100 per minute to a maximum of 120 per minute and at an accurate depth of at least 2 inches for an adult to promote ample circulation. For adult patients, CPR comprises of 30 chest compressions followed by 2 ventilations. Half of the students in the present study had answered 30:2 compressions to breath in adults (one person). These results were in accordance with the study done by Alanazi A et al⁵, where 53% of the students answered 30:2 compression to breath in adults. Less than half of students answered 1 ½ - 2 inches as the answer for depth compressions during CPR in adults. These results were in accordance with the study done by Roshana S⁶, where only 30% of the students answered correctly. This may be because students might have forgotten the chest compression ratio because it is not so important and they do not come across BLS in their further study years.

Compressing the area which is one fingerbreadth below the nipple line circulates blood that contains oxygen to the vital organs of a patient in cardiac arrest when the heart and breathing have stopped. Only 36.0% students answered one fingerbreadth below the nipple line for the location of chest compression during CPR in infants, which suggests that the students may not be aware of BLS care of infants. These results were in accordance with the study done by Alanzi A et al⁵, where 61.4% were not aware of the correct location of chest compression in infants. About 43.4% of students answered one-half to one-third depth of the chest as the answer for depth compressions in children during CPR. This could be because most of the students may not be aware of BLS care of children with a belief that it is not as important as BLS of adults.

It is an essential part of emergency as dental practitioners encounter life-threatening medical emergencies in their day to day practices and should have a basic knowledge of BLS. Maximum (90.3%) number of students agreed that BLS training should be a part of their medical curriculum which could be because students know the importance of BLS in their profession. In a study done by Arsati et al⁷, almost all the participants agreed that it should be included in the undergraduate dental curriculum and in a study done by Stafuzza et al⁸, they found that BLS training is fundamental to healthcare professionals. About 71.9% of students disagreed that BLS should be done only in hospital settings and about 83.9% of students agreed that BLS training should be repeated regularly to be updated. This could be because the students were aware that there is no specific place to perform BLS and had a positive attitude towards gaining knowledge and to be updated.

Most of the dental professionalists lack knowledge on BLS due to their various reason which they state. Less than half (48.3%) of students answered that no professional training is available as the reason for lack of knowledge about BLS. In a study done by Alotaibi O et al⁴, it was said that the most common justifications indicated by the participants for their lack of knowledge and skills were busy curriculum followed by no professional training available. More than half (55.8%) of students rated them average on their knowledge on BLS. This shows that most of the students had a positive impression on themselves regarding BLS knowledge. In a study done by Sharma R⁹ both medical and dental interns demonstrated realistic assessment of themselves while grading themselves about their knowledge of BLS.

LIMITATIONS:

The study was conducted at a single dental college. Therefore, generalizing the results is not plausible. Practical skills of basic life support could not be assessed in this study. We recommend that future research address the assessment of practical skills required for BLS. This study would help in future development of training courses about BLS within the academic curricula and in adopting guidelines in this regard in dental schools.

CONCLUSION:

Taken together, all the findings demonstrate that, IV BDS students and interns had an inadequate knowledge where as post graduates had an average knowledge of BLS. IV year students and interns had little knowledge compared to post graduates, However, all the three groups had positive attitudes toward learning BLS. Dentistry is a health profession that should deliver complete medical care and treat the whole patient rather than focusing on the oral cavity, we believe that undergraduate courses in dentistry must be revised to ensure proper BLS training. Similarly, after graduation, the dentist should regularly take theoretical and practical courses.

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