Original Article

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ASSESSMENT OF KNOWLEDGE AND PERCERTION OF BASIC LIFE SUPPORT AMONG DENTAL STUDENTS, INTERNS AND POSTGRADUATE TRAINEES

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ABSTRACT:

Purpose: The purpose of this study was to assess the knowledge and perception of Basic Life Support and Cardiopulmonary resuscitation among dental students, interns and postgraduate trainees.
Materials and Methods: A self administered questionnaire consisting of 14 questions based on the guidelines of AHA (American Heart Association) was filled by a total of 300 participants which included 100 each dental students, interns and postgraduate trainees. Written and informed consent was obtained from the participants.
Result: According to the results 95.6% individuals were aware of the abbreviation of BLS, 99.3% knew about the location of chest compression in adults. Looking closely at the individual groups dental students scored 48.57%,dental interns scored 51.4% and postgraduate trainees scored 54.5% ,a difference was also observed in the results among the individuals who were trained earlier with BLS,which shows that BLS course should be considered compulsory in the curriculum of Bachelor's in dental surgery.
Conclusion: More extensive programs should be incorporated regarding training of Basic Life Support in the curriculum as well as Continuing Education Progarm so that it gets easier to cope up with life threatening medical emergencies.
Key-words: Cardiopulmonary Resuscitation, Medical Emergencies, American Heart Association, Emergency Medical Services

INTRODUCTION:

Basic Life Support (BLS) is the cornerstone of rescuing life following cardiac arrest. [1] It is the integral part of resuscitation care that aims to sustain breathing and circulation to rectify the cause of arrest until resources are obtained. [2]

Mortality reports due to cardiopulmonary arrest has been registered in dental offices hence all health care professionals are expected to master the vital skill of cardiopulmonary resuscitation. [3] Invasive procedures that are part of many dental treatments may also lead to life threatening medical emergencies [4] , so it is ultimately dentist's responsibility to have competence in coping at moments of health crisis [5] , and this also necessitates the need of incorporation of BLS courses in dental education programs for the dentists to be fully equipped with the updated knowledge of these maneuvers. [6]

Former studies have suggested lack of knowledge of BLS among dental students and little importance has been given to acquiring competence in this

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particular [7-9] , so a cross sectional study was conducted in a medical institute of Karachi, Pakistan, to explore the perceptions and knowledge of BLS among dental undergraduates, postgraduates and interns.

MATERIALS AND METHODS:

Study-Subjects:

The participants of this study included Dental Students, Dental Interns and Dental Postgraduate Trainees. This study was conducted at Dow University of Health Sciences. Written and informed consent was obtained from all participants.

Study-Design:

It was a descriptive cross sectional study which was conducted from January 2017 to March 2017 in Karachi city in Pakistan

Study-Tool:

A structured questionnaire comprising of 14 questions based on the guidelines of American Heart Association (AHA) and the answer key was also generated using manual from AHA

The questionnaire included variables like Basic Life Support (BLS), Cardiopulmonary Resuscitation (CPR), Emergency Medical Services (EMS), compression to ventilation ratios, resuscitation techniques, recognition of need of CPR and response in case of emergency

Sample-Size:

There were a total of 300 participants comprising 100 each dental students, interns and postgraduate trainees.

Sampling-Technique:

Simple Random Sampling based on previous studies

RESULTS:

This study was conducted with participation of 300 individuals, out of which 100 were undergraduate dental students, 100 interns and 100 practitioners.

95.6% individuals were aware of the abbreviation of BLS (table:1), 99.3% knew about the location of chest compression in adults, 62% knew the meaning of CPR,60.6% knew the chest compression to ventilation ratio,38.6% could answer correctly for if they can recognise if someone is in need of CPR,52% knew the rate of compression in adult CPR,40% knew the depth of chest compression in adult CPR,32.6% knew the depth of chest compression in children during CPR,14% knew the preferred technique to give breaths in infants,47.3% answered correctly of the abbreviation of AED,65.3% individuals had previous knowledge of either BLS or CPR,35.6% were aware of the abbreviation of EMS,43.3% knew about the location to perform a pulse check in a child from 1 year of age to puberty, 43% knew what the first step on the spot should be if they noticed the sign of choking in an adult.

Looking closely at the individual groups dental students scored 48.57%,dental interns scored 51.4% and postgraduate trainees scored 54.5% ,a difference was also observed in the results among the individuals who were trained earlier

with BLS,which shows that BLS course should be considered compulsory in the curriculum of Bachelor's in dental surgery.

DISCUSSION:

Life threatening emergencies can occur with anyone at any time Basic life support (BLS) is the cornerstone of rescuing life following out-of-hospital cardiac arrest. [10] Sudden cardiac death (SCD) is often the first manifestation of cardiovascular disease. SCD is the most common cause of death worldwide, accounts for about 15% of all death in Western countries[11] With increasing number of elderly and medically compromised patients visiting the dental office and more complex sedation procedure being performed the incidence of medical emergencies is however elevating[12] Deaths have been reported in dental clinics following Cardiopulmonary Arrest, incompetence in this vital skill can lead to tragic consequences.

Therefore health professionals should be having profound knowledge of BLS According to our study 51.5% of participants had a positive attitude towards BLS which is almost consistent with the results of the study conducted by Roshana et al where 59.9% of participants showed a positive attitude towards BLS[14] Other studies have shown that lack of training is one of the causes of inappropriate knowledge of CPR among health care professionals. [15]

In present study one question regarding the abbreviation of BLS was correctly answered by 95.6% participants which supports the finding of O. Alotaibi et al in which the similar question was answered by 92.1% participants.[16] Out of the other 13 questions, only 6 questions were answered correctly by more than half of the participant. In a study conducted by [17] 44% of responders knew the meaning of AED and whereas in our study only 47.3% knew the meaning of AED which is comparatively lesser than the 47.3% reported in our study. However 59% of responders knew the full form of EMS which is higher than the 35.6%positive response reported in ours. Almost 65.9% of the participants in our study professed to have prior knowledge of CPR which is far lesser than the 75.9% documented by Singh *et al*[18] and the 100% documented by Owojuyigbe et al. [19]

According to our study there was inadequate knowledge of BLS and CPR among dental students which was similar to the findings of Akira et al [20] It was found in the study conducted by Sharma et al [21] that medical and dental interns who had completed their internships had poor knowledge of BLS and CPR whereas in our study average knowledge was reported among dental interns.

The results of this study are quite alarming showing poor knowledge of CPR and BLS among students and average knowledge among interns and

PGs therefore It is of outmost importance to conduct BLS programs among dental practitioners and Management of medical emergencies should be an integral part of dental curriculum so that the confidence of dental students and professionals is build up to cope up with stressful situations that threaten the patient's life. [22]

CONCLUSION:

On the basis of the results found, it was demonstrated that dental students and staff had inadequate knowledge of BLS and improved response was recorded by the individuals with previous training of it, moreover dentistry is a health profession and therefore the focus should be on complete medical care not only on oral health, hence there is an utter need to take measures in order to let dental students master this vital skill of BLS by including it in the curriculum for undergraduates and arranging practical courses and BLS workshops in general.

REFERENCES:

1. Shanta Chandrasekaran, Sathish Kumar, Shamim Ahamed Bhat, Saravana Kumar, P Mohammed Shabbir, VP Chandrasekaran. Awareness of basic life support among medical, dental, nursing students and doctors. India Journal ofAnaesth 2010; 54:121-6.
2. AJHandley.Guidelines for basic life support.BMJ; 1993; 306:1587-9.
3. Jamalpour MR, Asadi HK, Zarei K. Basic life support knowledge and skills of Iranian general dental practitioners to perform cardiopulmonary resuscitation. Niger Med J 2015;56:148-52
4. Gadipelly S, Neshangi S. Changing Guidelines of Cardiopulmonary Resuscitation and Basic Life Support for General Dental Practitioners and Oral and Maxillofacial Surgeons. J. Maxillofac. Oral Surg. (Apr–June 2015) 14(2):182–187
5. Elanchezhiyan S, Elavarasu M, Vennila K, Renukadevi R, Mahabob MN, Sentilkumar B, Raja S. Awareness of Dental Office Medical Emergencies Among Dental Interns in Southern India: An Analytical Study. Journal of Dental Education 2012; 77: 364-69
6. Narayan D, Biradar S, Reddy M, Sujatha BK. Assessment of knowledge and attitude about basic life support among dental interns and postgraduate students in Bangalore city, India. World J Emerg Med 2015;6(2):118–122.
7. Chapman PJ. A questionnaire survey of dentists regarding knowledge and perceived competence in resuscitation and occurrence of resuscitation emergencies. Aust Dent J 1995;40(2):98–103.
8. Atherton GJ, McCaul JA, Williams SA. Medical emergen¬cies in general dental practice in Great Britain. Part 3: perceptions of training and competence of GDPs in their management. Br Dent J 1999;186(5):234–7.
9. Girdler NM, Smith DG. Prevalence of emergency events in British dental practice and emergency management skills of British dentists. Resuscitation 1999;41(2):159-165
10. Ralapanawa D, Jayawickreme KP,Ekanayake E, Kumarasiri P. A study on the knowledge and attitudes on advanced life support among medical students and medical officers in a tertiary care hospital in Sri Lanka. BMC Res Notes (2016) 9:462
11. Lloyd-Jones DM, Berry JD, Ning H , Cai X, Goldberger JJ, Epidemiology of Sudden Death Abstract 969: Lifetime Risk for Sudden Cardiac Death at

Selected Index Ages and by Risk Factor Strata and Race: Cardiovascular Lifetime Risk Pooling Project Circulation. 2009;120:S416-S417.
12. Carvalho R, Costa R, Marcelo V. Brazilian Dental Students' Perceptions About Medical Emergencies: A Qualitative Exploratory Study. Journal of Dental Education 2008; 72(11): 1343-1349.
13. Mohan M, Sharma SM, Shetty T, Gupta P. Awareness of basic life support (BLS) among Dental interns and Dental practitioners. Nitte University Journal of Health Science 2015; 5:14-18.
14. Roshana S1, Batajoo KH1, Piryani RM2, Sharma MW. Basic life support: knowledge and attitude of medical/paramedical professionals. World J Emerg Med 2012;3(2):141-145.
15. Sudeep CB, Sequeira PS, Jain J, Jain V, Maliyil M. Awareness of basic life support among students and teaching faculty in a dental college in Coorg, Karnataka. International Dental Journal of Student's Research 2013; 2: 4–9.
16. Alotaibi O, Alamri F, Almufleh L, Alsougi W. Basic life support: Knowledge and attitude among dental students and Staff in the College of Dentistry, King Saud University. The Saudi Journal for Dental Research 2016; 7: 51–56
17. Almesned A, Almeman A, AlAkhtar A, AlAboudi A, AlGasham Y, Al Damegh M. Basic life support knowledge of healthcare students and professionals in the Qassim University. nternational Journal of Health Sciences, Qassim University 2014; 8(2): 141-149.
18. Singh K, Bhat N, Ramesh N, Sharda A, Asawa K, Agrawal A, et al. Cardiopulmonary resuscitation: Knowledge and personal experience among dentists in Udaipur, India. J Dent Sci 2011;6: 72-75.
19. Owojuyigbe AM, Adenekan AT, Faponle AF, Olateju SO. Impact of basic life support training on the knowledge of basic life support in a group of Nigerian Dental Students. Niger Postgrad Med J 2015;22:164-8.
20. Akritia S, Mayankb M, Arushic D. Basic life support and advanced cardiac life support: knowledge of medical students in New Delhi. Journal of Young Medical Researchers 2014; 1: 1–9.
21. Sharma R, Attar NR. Adult basic life support (BLS) awareness and knowledge among medical and dental interns completing internship from Deemed University. NUJHS 2012; 2: 6–13.
22. Varma LS, Pratap K, Padma TM, Kalyan VS, Vineela P. Evaluation of preparedness for medical emergencies among dental practitioners in Khammam town: A cross-sectional study. J Indian Assoc Public Health Dent 2015;13:422-8

TABLES:

Table 1: Questionnaire and frequency of correct answers

Questionnaire	**Dental Students (Correct Answers %) n= 100**	**Dental Interns (Correct Answers %) n=100**	**Dental Postgraduate Trainees Correct Answers %) n=100**	**Total (Correct Answers %)**
What does BLS stand for?	98	94	95	287 (95.6%)
Chest compression location in adult CPR?	100	100	98	298 (99.3%)
What is the meaning of CPR?	69	57	60	186 (62%)
Chest compression to ventilation ratio?	59	54	69	182 (60.6%)
How will you recognize that someone is in need of CPR?	36	37	43	116 (38.6%)
Rate of compression in adult CPR is?	59	46	51	156 (52%)
Depth of chest compression in adult CPR?	29	41	40	110 (40%)
Depth of compression in children during CPR?	31	36	31	98 (32.6%)
Preferred technique to give breaths in infants?	9	20	18	47 (14%)
What does AED stand for?	44	43	55	142 (47.3%)
Previous knowledge about BLS or CPR?	56	67	73	196 (65.3%)
What does EMS stand for?	18	43	36	97 (35.6%)
Where should you attempt to perform a pulse check in a child from 1 year of age to puberty?	35	47	48	130 (43.3%)
If you and your colleague are eating food and suddenly your colleague starts symptoms of choking, what will be your first response on the spot?	37	35	47	119 (43%)

Table 2: Total number of correct and incorrect answers assessing the knowledge of BLS and CPR among Dental students interns and post graduate trainees

<50 % = Poor

50-70 % = Average

>70% = Good

	Dental Students	**Dental Interns**	**Postgraduate Trainees**	**Total**
Correct	680 (48.57%)	720 (51.4%)	764 (54.5%)	2164 (51.5%)
Incorrect	720 (51.4%)	680 (48.57%)	636 (45.5%)	2039 (48.5%)
Total	1400	1400	1400	4200