

## **Basic life support education in Turkish dental schools.**

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### **Abstract**

**Purpose:** The aim of this study was to investigate the integration of basic life support (BLS) education in the dental curricula among Turkish dental schools.

**Material and methods:** A self-administered questionnaire including 20 questions investigating the delivery of BLS education was sent via e-mail to the heads of the Department of Oral and Maxillofacial Surgery of the dental schools.

**Results:** Eleven dental schools responded to questionnaire. BLS education was taught in different courses at all of the respondent dental schools. Theoretical examination was done at all of the schools however practical examinations were not performed. Of the respondents, only one school taught that their students could successfully perform BLS at any emergency. A blue code team was available in 27% of the schools that participated in the survey. Meanwhile, 36% adopted European Resuscitation Council guidelines as the main reference. One of the respondent schools reported that all of their practitioners possessed a BLS certificate.

**Conclusions:** There is a significant variation regarding the delivery of BLS education although it is a crucial component of the dental education program. Educators should be encouraged integrate contemporary guidelines into their curriculum.

**Keywords:** Dental education, Basic life support, Emergency.

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### **Introduction**

Medical emergencies including life-threatening conditions are likely to arise in the dental setting; thus the dental practitioner bears an important responsibility in terms of possessing basic life support (BLS) skills. Lack of awareness among dental school graduates in terms BLS has always been an important issue because a practitioner with well foundation in first aid is of utmost importance to perform necessary interventions on time. For this reason, dental students should be instilled with knowledge and skills of sufficient depth regarding BLS prior to graduation. [1]. Though, the majority of these occurrences are not actually life-threatening such as syncope or hypertension, it is also possible to encounter more serious incidences, which might be fatal in case intervention is not performed on time [2]. Therefore; dentists must acquire the fundamental knowledge and skills to cope with medical emergencies in the dental setting. This necessitates basic life support courses to be regarded as indispensable aspects of the dental education program.

Ever since 1966, BLS training has been recommended as a crucial aspect of health care education programs [3]. Each dental practitioner should possess a BLS certification and gain proficiency in bringing an emergency patient in a stabilized condition until the arrival of medical services. Previous studies reported a deficiency in BLS training of undergraduate dental and medical education [4-7]. An investigation of the BLS

programs around the world reveals that variation exists not only in terms of the theoretical and practical hours dedicated to BLS teaching but also regarding the number of years this type of teaching is performed [8,9]. The way of teaching is also different all over the world [10,11].

Although dental graduates should ideally have the knowledge and skills to perform CPR in practice, this is not actually as expected in reality. It has been demonstrated that they are prone to making errors in the algorithms and have insufficient skills to cope with emergency situations. Furthermore; poor retention of previously acquired skills and knowledge has been shown in studies performed among medical students and graduates [12-14]. Learning objectives on BLS should be urgently established in the dental education program and students should be encouraged to complete these courses successfully during their education period.

This is the first study that compares theoretical and clinical training in BLS in dental curricula among Turkish dental schools. The aim of this study was to investigate the integration of BLS education in the dental curricula among Turkish dental schools.

### **Materials and Methods**

The study was approved by the IRB of the Yeditepe University, Faculty of Dentistry. A self-administered questionnaire

including 20 questions investigating the delivery of BLS education was sent via e-mail to the heads of the Department of Oral and Maxillofacial Surgery of the dental schools. Among 38 dental schools, 17 were included in the survey. The remaining 21 dental schools (new opening) that did not offer

dental education for more than 5 years were excluded in order to only survey schools with dental education in all grades of the 5 year dental education. Non-respondents were reminded via email.

**Table 1:** Survey questions.

S. No.	Survey Questions
1	Do you give Basic Life Support (BLS) lectures at your dental school? Yes: No:
2	If your answer is yes, who gives these lectures?
3	At which course and year the BLS education was given?
4	How many hours of didactic and practical lecture was delivered?
5	What is the student: tutor ratio?
6	Do you give practical part on manikins? Yes: No:
7	What is the student: manikin ratio?
8	Do you assess the students before BLS training? Yes: No:
9	Do you assess the students after BLS training? Yes: No:
10	Do you have refreshing courses? Yes: No:
11	Do you think that your students could manage BLS in any kind of emergency they encountered during dental practice? Yes: No:
12	Do you give automatic defibrillator application training? Yes: No:
13	Do you have BLS certification holder faculty members? Yes: No:
14	Do you have Advance Life Support certification holder faculty member? Yes: No:
15	Do you have Blue Code Team? Yes: No:
16	At which departments are these blue code team members working?
17	How many events occurred that requires BLS per year?
18	What are they these events?
19	How many seconds it takes for the Blue Code Team to arrive the incident scene?
20	Do you use as a guide the "Application of European Resuscitation Council Guidelines 2010"? Yes: No:

## Results

Survey questions were shown in Table 1. Eleven of the 17 contacted dental schools responded to survey with a response rate of 64.7%. No response was received from the remaining 6 dental schools, even though notices were sent. The results are summarized in Figure 1. Specialties providing BLS training were as follows; anesthesia 73%, anesthesia and oral and maxillofacial surgery 18%, emergency medicine 9%. Years in which training initially introduced was 9% at first year, 27% at 3<sup>rd</sup> year and 36% at 4<sup>th</sup> year 45% at 5<sup>th</sup> year. Didactic examination was performed at all of the schools without any additional practical examination assessment. Only one dental school assessed the students' knowledge before training. Ninety percentages of the respondents do not make any refreshing courses however one of the dental schools organized

refreshing courses every two years. Automatic defibrillator application training was given at more than half of the respondents. Of the respondents, one dental school was in the opinion that their students could manage BLS in any kind of emergency they encountered during dental practice. A blue code team was available in 27% of the schools that participated in the survey. Meanwhile, 36% adopted European Resuscitation Council guidelines as the main reference during the delivery of education on the topic. One of the respondent schools reported that all of their practitioners possessed a BLS certificate. BLS education was delivered via different courses at all of the investigated schools and it was a compulsory component of the educational program (Figure 2).

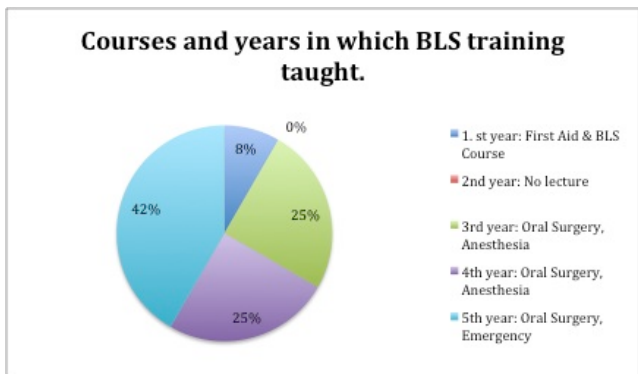


Figure 1: Courses and years in which BLS training taught.

### Discussion

Basic life support encompasses a range of procedures during which support is provided to patients with life-threatening conditions causing pain and dysfunction to the individual. The main target of all these procedures is to save the life of the victim until definite medical treatment is initiated. Although BLS does not include any extensive or complicated medical interventions; only those medical personnel with certifications are able to perform the procedure. With this certification, the healthcare giver is authorized to perform basic life-saving interventions until the arrival of the medical team and the initiation of advanced life support (ALS).

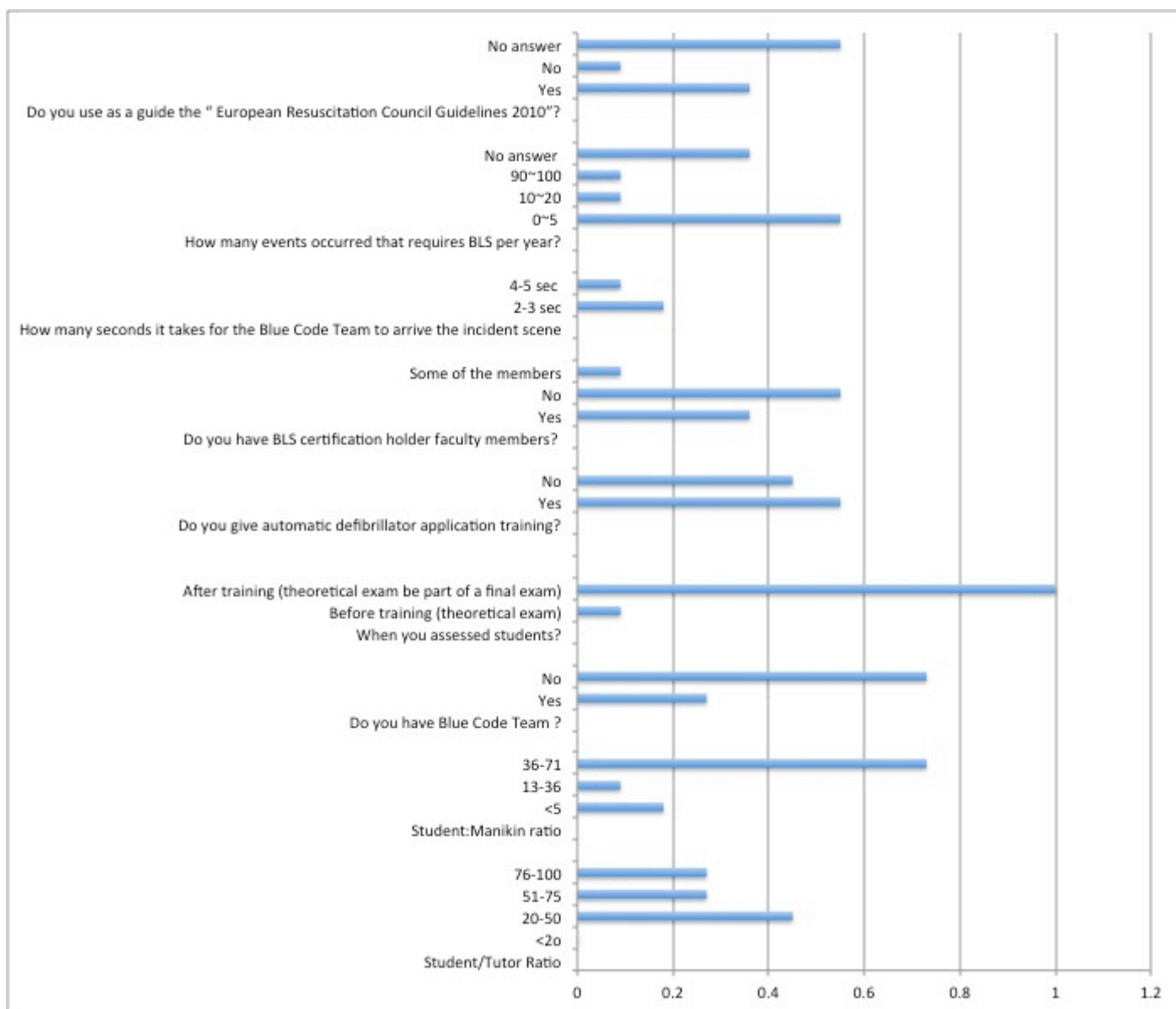


Figure 2: BLS education delivered via different courses.

The few steps of the BLS which can be summarized as initial assessment, airway maintenance and ventilation, breathing, circulation and chest compression can be easily taught and

instilled during a course lasting approximately 12-24 hours [15]. Although BLS teaching is almost a universal methodology that is required to be followed, there is

inconsistency in terms of the delivery hours, and adequacy not only between countries but also between dental schools within the same country [16,17].

This is the first study that compares theoretical and clinical training in BLS training in dental curricula among Turkish dental schools. A questionnaire-based survey forms were sent to the heads of the Department of Oral and Maxillofacial Surgery of the dental schools. Not all dental schools contacted provided a response, resulting in some reduction in the number of the participants (response rate of 64.7%). There might be some reasons for their lack of participation such as reluctance in providing information about the faculty due to some institutional policies, and lack of time of the participants due to heavy workload and not taking the request as a priority task. Furthermore; when the respondents were analyzed, it was observed that they included dental schools with which our faculty was acquainted one way or another through congresses, conferences and seminars etc. This probably led them to feel more responsible to support the research due to our professional interactions.

Anesthesiologists and oral and maxillofacial surgeons are provided most BLS training. All the responding dental schools gave formal BLS training at least once in the dental curriculum. BLS teaching tended to be focused in the final year of the course, although a significant amount of teaching is also done in the fourth year. Clinical experience initiated during the first years of the dental program is beneficiary since it allows a stream in which students can integrate previously acquired information to clinical practice much more successfully. An efficient way to instill BLS knowledge and skills might be giving the course during the first year with yearly repetitions in the upcoming years of the educational program. With such an approach, students will be given the opportunity to consolidate their skills year after year resulting in a much more established competency. Furthermore; the course allows them to be engaged in a practical study atmosphere unlike regular theoretical courses where only didactic information is conveyed. It has recently been demonstrated by some studies that simulation-based intervention is a very helpful means of developing students' ability to manage emergency cases [18].

Another issue, which is as important as BLS itself is the retention of knowledge and skills. Studies have shown that the retention of knowledge is longer than skills, which might show quick degradation over time. Hands-on practice, simplicity of instruction, multi-media presentations and feedback from instructors have been reported as factors that positively affect skills retention whereas inadequate hands-on practice, non-compliant education, incorrect course topics, complicated delivery of information, time elapse between education and practical courses, weak supervision and insufficient instructor feedback have been included as factors with a negative impact [19]. The significance of refresher trainings have specifically emphasized for the retention of gained knowledge and skills [9]. Despite this, 90% of the respondents did not provide any refreshing courses.

One of the worst possibilities dreaded by most dental practitioners is losing a patient in the dental chair. A survey of the literature indicates that very little data is available regarding patient mortality and morbidity during dental procedures. Meanwhile; there is no law or regulation that underlies the necessity of keeping track or reporting such incidents [20]. Despite this weak amount of data; it is important to keep in mind that these undesirable occurrences might be possible specifically following the administration of anesthesia. In case future research is conducted that specifically focuses on this aspect of dental practice, more definite statements can be made regarding the incidence of mortality and morbidity in the dental office as well as the correlation of previous BLS training and the success of managing these situations by the dental practitioner.

Limited studies are available on the literature about integration of BLS training in dental curricula [21]. Our findings are similar to Jordan and Bradley, who reported that BLS training, varies significantly in undergraduate healthcare profession in the northern region of UK [22]. Within the limitations of the present study, considerable variation exists in terms of the delivery of BLS education despite its major role in the overall educational program. It is imperative that educators should be encouraged to follow contemporary guidelines and transfer newly emerging information into their curriculum. A quality assurance program might also be contributory to reach this objective.

An adequate education in basic life support should always be regarded as a fundamental component of the dental education programme. Early exposure to such life-saving skills and regular reinforcement in the subsequent years is a very feasible approach to instill these skills among dental students. In addition, the dentists should be encouraged to regularly attend theoretical and practical postgraduate courses on BLS organized periodically by the national dental organizations.

## Conclusion

Although the response rate limits detailed interpretation of the study, the results show variations in BLS education at dental schools in Turkey. Future studies regarding the students' opinion on their basic life support education are needed to make more valid statements on the topic.

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