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Document heading doi: 10.21276/apjhs.2018.5.4.24 **Review Article**

Current status and the importance of basic life support training in Turkey and the World

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Abstract

The aim of this review is to present the current status and importance of basic life support training in Turkey and the world. Basic Life Support (BLS) is a set ofbasic life-saving proceduresperformed after cardiac arrest. Cardiovascular diseases are one of the most important causes of mortality in many countries today. In 2015, 31% (17.7 million) of all deaths worldwide were caused by cardiovascular diseases. Healthcare personnel constitute an important group in increasing the survival rate after cardiopulmonary arrest. However, studies have shown that healthcare personnel in many countries are not sufficiently capable in BLS application. In the USA, nurses are required to receive BLS training. In addition, in many countries with advanced emergency medicine systems, education of the public in this topic is emphasized. In Switzerland, 19% of the country's population is trained and certified for BLS. Prioritized education of the young population and especially the education of the relatives of cardiac patients is also emphasized. It has been shown that in incidents where the response time of healthcare personnel exceeds four minutes, BLS practiced by witnesses at the scene directly influences survival rates. In terms of BLS applications, survival rates will increase as more and more people are included in training programs. Therefore, there is a need for training programs that are easier to access, effective and repeatable.

Keywords: Basic life support, current status, training.

Introduction

Basic Life Support (BLS) is a set of basic procedures applied after cardiac arrest that increase survival and do not include the use of drugs. BLS covers life-supporting first aid practices such as early detection of Sudden Cardiac Arrest (SCA), immediate activation of the immediate response system, early Cardiopulmonary Resuscitation (CPR), and early defibrillation with Automatic External Defibrillator (OED) [1, 2]. Sudden stop of spontaneous breathing and circulation in an individual due to any reason is called "Cardiopulmonary Arrest" (CPA) [3]. The term "Cardiopulmonary Resuscitation" (CPR) is the "resuscitation of heart and lungs" [4]. The most important factor that increases survival rate is early and correct intervention.

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Current Status of Basic Life Support Training in the World and in Turkey

Cardiovascular diseases are one of the most important causes of mortality in many countries today. In 2015, 31% (17.7 million) of all deaths worldwide were caused by cardiovascular diseases. Of these, 6.7 million were due to myocardial infarction (MI). It is estimated that mortality due to cardiovascular diseases will reach 22.2 million in 2030 [5, 6].

Mortality data of Turkey Statistical Institute (TURKSTAT) shows that the percentage of cardiac diseases in total deaths is increasing. Cardiac diseasesare the most common cause of mortality among all causes, with 45% in 1993, 40% in 2009, and 39.7% in 2017 [7, 8].

Half of deaths due to coronary artery disease are caused by sudden arrest of circulation and respiration. BLS applications are highly important in resuscitation of circulation and respiration. BLS is performed on unconscious people with no respiration and circulation. When administered effectively, BLS reduces mortality and morbidity. When BLS applications are initiated within the first four minutes, survival rate is 29%;on the other hand, when BLS applications are initiated

after the first four minutes, survival rate drops to 7% [9].

In Turkey, training for basic life support applications is focused on building skills. "Basic First Aid Training", which covers basic life support practices for rescuers from the public, is provided by special first aid training centers under the supervision of the Ministry of Health. For healthcare personnel, CPR trainings are conducted within the scope of in-service training in hospitals, university hospitals and private hospitals affiliated to the Ministry of Health. According to the legislation as of 2009, it has been obligatory to ensure that all doctors in the hospitals and other healthcare personnel with a duty in Code Blue application receive CPR training. CPR training is required to be provided by anesthesia, cardiology, emergency medicine, general surgery, and pediatrics specialists and doctors with trainer instructor certificate. Training courses are scheduled over two days, and theoretical and practical evaluation and the issuance of a certificate of participation are left to the discretion of relevant institutions. Although it is recommended that all health workers receive CPR training, studies show that doctors and nurses are not adequately trained [10, 11, 12, 13].

Importance of Basic Life Support Training

The most important factors affecting the survival rate in out-of-hospital cardiac arrest cases are the response time of healthcare personnel and the BLS applications initiated by witnesses at the scene [14]. It has been shown that in cases where the response time of healthcare personnel exceeds four minutes, BLS practiced by witnesses at the scene directly influences survival rates [15].

BLS constitutes the first step of cardiac arrest treatment, therefore physicians, nurses and other healthcare professionals working in high-risk areas should have adequate BLS skills before initiating advanced cardiac life support. In the USA, nurses are required to receive BLS training. In addition, in many countries with advanced emergency medicine systems, education of the public in this topic is emphasized. In Switzerland, 19% of the country's population is trained and certified for BLS. Prioritized education of the young population and especially the education of the relatives of cardiac patients is also emphasized[16, 17].

Healthcare personnel constitute an important group in increasing the survival rate after cardiopulmonary arrest. However, studies have shown that healthcare personnel in many countries are not sufficiently capable in BLS application [9, 18, 19, 20, 21, 22, 23].

In the literature, Karahan et al. (2005) assessed knowledge and skill level of nursing students in Turkey immediately and three months after BLS training. In this study, students were evaluated according to the prepared steps while carrying out BLS on models. According to the results of the study, half of the students performed all the steps successfully during the first application; whereas after three months, only 7.5% of the students performed all the steps successfully. The authors compared infant, child and adult BLS scores obtained by students immediately and three months after BLS training, and found that the success levels of the students were significantly reduced at the end of three months [9].

Kardong-Edgren et al. (2010) compared two teaching methods for the acquisition of CPR skillsof nursing students in the United States. According to the results of this study, students taking Heart Code Basic Life Support (BLS) course with voice advisory manikin (264) performed better in terms of compression depth and adequate ventilation than studentswho were trained by instructors using traditional models (339). As a result, it was determined that the traditional teaching method with instructor guidance used in basic life support training was inadequate and the use of Heart Code BLS with voice advisory manikin was more effective [21].

According to the results of the study conducted by Partiprajak and Thangpo (2016) in Thailand to evaluate the basic life support knowledge, self-efficacy, and persistence of chest compression, no significant difference was found between chest compression performance measured in the pre-test and the post-test performed after 3 months [22].

According to a study by Sangamesh et al. (2017)conducted with 1054 healthcare personnel to assess basic life support knowledge level of doctors, nurses and dentists in India, it was found that BLS knowledge level of healthcare workers was not sufficient and their awareness was low [23].

According to the results of the study conducted by Yılmaz Güven et al. (2018) to determine the knowledge level of nurses on cardiopulmonary resuscitation and investigate the effects of the training on cardiopulmonary resuscitation knowledge level, 32% of nurses previously performedCPR and 39.8% participated in in-service CPR training. Based on the results of the study, it was determined that the average number of correct answersgiven by nurses increased after CPR training. These results indicate that nurses' knowledge and skills in CPR should be refreshed updated with in-service training programs and in-service training sessions should be periodically repeated [24].

Having necessary CPR skills is a vocational requirement for healthcare professionals. Although

cardiopulmonary resuscitation is one of the most frequently used medical interventions in the world, healthcare workers' lack of knowledge and skills about basic life support of health workers is striking. Likewise, recent studies analyzing the effectiveness of resuscitation training also emphasize that acquired skills and knowledge diminish over time [9, 20, 21 22, 23, 24, 25]. These studies clearly show that BLS training programs are inadequate and no specific training standard has been established. More effective and regular in-service trainings are needed to remedy this situation.

The inability to persistently and effectively perform BLS applications is an important healthcare issue all over the world. In particular, studies in the literature state that BLS trainings become ineffective if they are not repeated periodically.

Conclusion

In terms of BLS applications, survival rates of patients needing BLS will increase as more and more people are included in training programs. Therefore, there is a need for training programs that are more accessible, effective and easily repeatable.During the last 5 years, CPP recommendations have been tried to be simplified and the importance of high quality CPR has been emphasized [17].

Providing BLS training and sertificate programs for healthcare personnel before and after graduation, refreshing and updating knowledge periodically, and mandatory participation in these programs will also be useful for acquisition of basic life support skills [26].

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