MEDICAL CHANNEL

Original Article

AWARENESS AND PRACTICE OF BASIC LIFE SUPPORT AMONG DOCTORS IN CIVIL HOSPITAL KARACHI

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ABSTRACT:

Introduction: According to the World Health Organization, about 17.3 million people died from Cardio Vascular Diseases (CVDs) in 2008. This represented 30% of all the global deaths. Out of these most were due to coronary heart disease and stroke. For patients who have a cardiac arrest, survival rates and neurologic symptoms are grave. In these conditions, early Cardio Pulmonary Resuscitation (CPR) and early defibrillation might be useful to improve the survival and neurologic outcomes.Basic Cardiac Life Support (BCLS) refers to recognition of sudden cardiac arrest, call for help, maintenance of the airway, and supporting breathing and the circulation without using any equipment other than for personal protection.Considering these facts, the guidelines for BLS are updated every 5 years by the leading resuscitation councils, including the American Heart Association (AHA) and the European resuscitation council since the year 2000. The **objective** of our study was to determine the level of awareness of BLS among doctors, its practice in hospital settings and also to make them aware about the recent 2010 AHA guidelines.

Material and Method: A Cross-sectional study done at Civil Hospital Karachi.By convenient sampling 143 doctorswere included from end of August, 2011 to end of September,2011. Ethical consideration and permission granted from CHK and DUHS administration. All the On duty doctors of CHK who completely filled the questionnaires were included in this research, and all those doctors not performing duties in CHKand who were reluctant to participateand left the questionnaire incompletely filled were excluded.Dataanalyzed through SPSS 16.

Results: A total of 143 doctors participated in the study out of which 135 doctors completely filled the questionnaires which were analyzed. Out of 135 doctors only 91 (67.4%) had taken a BLS (CPR) training while 44 (32.6%) doctors had not, but had theoretical knowledge that they attained from seminars, media and by observing other colleagues.Among the trained doctors for BLS, 60.4% of the doctors were aware significantlywhile 39.6% had forgotten what they were trained for BLS. 45.46% of the untrained for BLS doctors had awareness the rest 54.54% had no awareness. Results after giving them some basic knowledge regarding BLS, 2010 AHA guidelines there was an increased awareness among the trained and untrained doctors by 77.1% and 64.1% respectively.

Conclusion: It is now essential to standardize training in Basic life support and make it a mandatory component of all medical, nursing and para-medical school undergraduate curricula. Practicing doctors should be updated regularly for new guide lines to early Cardio Pulmonary Resuscitation (CPR/BLS) and early defibrillation that might be useful to improve the survival and neurologic outcomeswith cardiac arrests.

INTRODUCTION:

Deaths due to cardiovascular diseases are at a rise. More than 80% of CVD deaths take place in low- and middle-income countries and, by 2030, almost 23.6 million people

will die from CVDs(1). For patients who have a cardiac arrest, survival rates and neurologic symptoms are grave. In these conditions, early Cardio Pulmonary Resuscitation (CPR) and early defibrillation might be useful to improve the survival and neurologic outcomes(2).Basic Cardiac Life Support (BCLS) refers to recognition of sudden cardiac arrest, call for help, maintenance of the airway, and supportbreathing and the circulation without using any equipment other than for personal protection(3)

Considering these facts, the guidelines for BLS are updated every 5 yrs by the leading resuscitation councils, including the American Heart Association (AHA) and the European resuscitation council since the year 2000(4) .

CPR is a component of BLS, a simple maneuver which requires little training, minimal equipment and is a lifesaving procedure. The objective of our study was to determine the level of awareness of BLS among doctors, its practice in hospital settings and practice of the skills required in this procedure, and also to make them aware about the recent 2010 AHA guidelines.

The changes according to the 2010 AHA guidelines are:

- The initial sequence of steps is changed from ABC (airway, breathing, chest compressions) to CAB (chest compressions, airway, breathing), except for newborns.
- "Look, listen, and feel" is no longer recommended.
- The compression depth for adults should be at least 2 inches (instead of up to 2 inches).
- The compression rate should be at least 100/min (3).

Basic life support (BLS) is the foundation for saving lives in cardiac arrest. Fundamental aspects of BLS include immediate **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).*Initial recognition and response to heart attack and stroke are also considered part of BLS.(7)

The aim of this study was to evaluate the theoretical awareness and practice of Cardiopulmonary resuscitation-basic life support (CPR-BLS) among the doctors working in Civil Hospital Karachi (CHK).we conducted this study to assess the doctors (residents, postgraduates and consultants) before and after showing a video of BLS based on 2011, American Heart Association guidelines. This study was designed to evaluate the extent of knowledge and change of theoretical knowledge among practicing doctors about BLS. Studies have shown that educating medical professionals as well as the public regarding the treatment of cardiac arrest has shown to improve survival rates(5) .Thus, it should be a prerequisite for all qualified doctors, as only 10 minutes is the window of opportunity in saving the lives of patients with cardiac arrest because with every passing minute 10% of the chances of survival decrease in a cardiac arrest without delivery of CPR(3)

Purpose behind performing this research is the lack of availability of data regarding the knowledge of BLS among the medical professionals in Pakistan i.e. doctors, nurses, and other paramedical staff. The objective of our study was to determine the level of awareness of BLS among doctors, its practice in hospital settings and practice of the skills required in this procedure and also to make them aware about the recent 2010 AHA guidelines.

MATERIAL AND METHOD:

A cross sectional study was designedatCivil Hospital Karachi (CHK), from August 2011 to September 2011. In this study, by convenient sampling, 143 medical professionals of CHK were included, comprisedof on duty doctors i.e. house officers (H.Os), post graduate (P.Gs) trainees, registered medical officers (RMOs) and consultant of medicine, gynecology, surgery, pediatrics and anesthesiology. Minimum calculated sample size was 110. After the ethical considerationi.e. permission granted from CHK and DUHS administration, all those doctors not performing duties in CHK and who were reluctant to participate and the questionnaire incompletely filled were excluded from this study.

In a seminar room, doctors were given questionnaire to fill as pretest to reveal their previous understanding about BLS ways and means, irrespective to have previous training for BLS done / not, followed by a small video presentation to update their knowledge for BLS ways and means and current guide lines of AHA 2010. Same group was given posttest to compare their knowledge, updated by this video, that how this activity has elevated their understanding about BLS provision. All the collected data analyzed through SPSS 16.

RESULTS

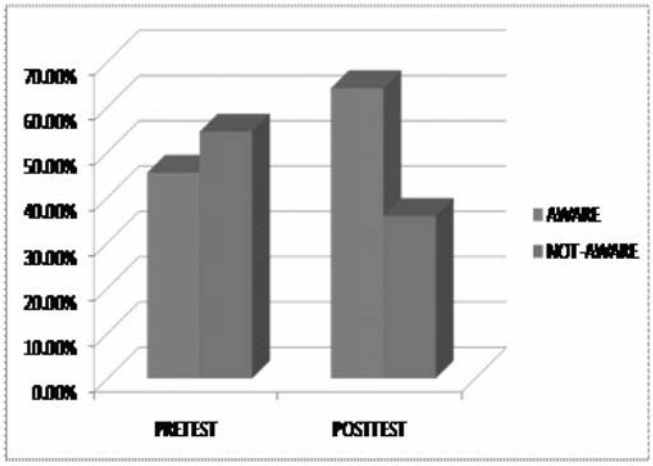
A total of 143 doctors participated in the study, out of which 135 doctors completely filled the questionnaires. Completely filled questionnaires were analyzed by SPSS version 16 which showed significant findings about the awareness level and practice rate of BLS in clinical doctors at CHK.

Total Doctors n= 143 (Excluded n = 8 , Included n = 135)

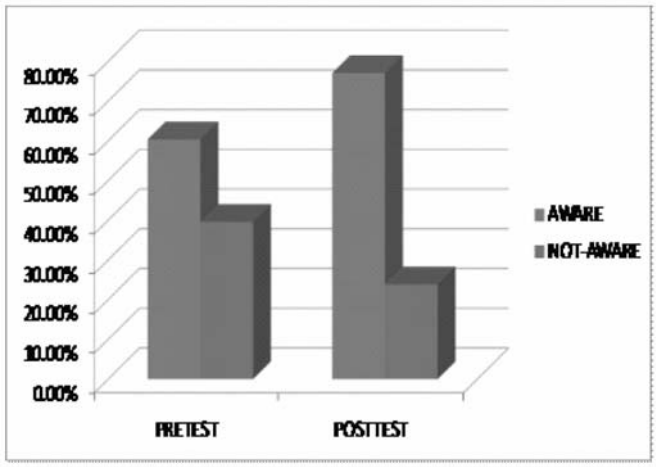
Previously Trained for BLS n = 91 (67.4 %)		**Previously not Trained for BLS n = 44 (32.6 %)**	
Pretest Awareness	**Posttest Awareness**	**Pretest Awareness**	**Posttest Awareness**
60.4%	**77.1 %**	**45.46%**	**64.1 %**

TRAINED AND UNTRAINED DOCTORS ANSWERS BEFORE AND AFTER SHOWING THE VIDEO

67.4% of Trained Doctors Awareness



32.6% of Untrained Doctors Awareness



AWARENESS LEVEL OF CLINICAL DOCTORS AT CHK

A total of 135 questionnaires were received from the target group of 143 giving a response rate of 94.4%. Out of **135** doctors, only 91 (**67.4%**) had taken a BLS (CPR) training,while 44 **(32.6%)** doctors had not, but had theoretical knowledge attained from seminars, media and by observing other colleagues.

Questionnaires werefilled by the participants before and after a video presentation of BLS based on "American Heart Association guidelines (AHA) 2011". Awareness criteria wereconstructed on selecting 14 questions regarding basic knowledge of BLS with respect to AHA 2011BLS guidelines. Then marking was done on the basis of answers correctly marked. Level of awareness was less among the **untrained doctors (45.45%)before** the video, as compared to the **trained ones (60.4%).**

Result showed significant findings for **trained** ones, 60.4% of the doctors were aware while 39.6% had forgotten for what they were trained. 45.46% of the **untrained** doctors had awareness while the rest 54.54% had no awareness. Results after giving them some basic knowledge regarding BLS, 2011 AHA guidelines, there was an increased awareness among the trained and untrained doctors by 77.1% and 64.1% respectively,

PRACTICE RATE OF CLINICAL DOCTORS AT CHK

- Of all doctors included, 73.3% were practicing BLS including H.O (42.4%), P.G (45.5%),R.M.O (5.1%) and consultant(7.1%). Among them 76% were handling with a rate of 1-10cases/month, whereas anesthetists handing 60-90cases/month (62%).
- Doctors who had practiced BLS83.9% performed BLS under supervision while 63.9% doctors have often performed BLS without supervision.
- According to the collected data, most common outcome of CPR was patient revival i.e. 55.1%where as 40.4% patient expired.
- Among practicing doctors,96.9% of them perform BLS without any gender constraints.
- Among practicing doctors, 97.9% of them think that BLS should be included in undergraduate curriculum and must be upgraded with time.

DISCUSSION:

According to the World Health Organization, about 17.3 million people died from Cardio Vascular Diseases (CVDs) in 2008. This represented 30% of all the global deaths. Out of these most were due to coronary heart disease and stroke[1]. The present performance of external cardiopulmonary resuscitation, basic life support (CPR-BLS) outside hospitals, works as a bridge to advanced life support (ALS) in sudden cardiac deaths.Attempts for restoration of spontaneous circulation (ROSC), still yields suboptimal results[6]. This conductedstudy assessed the doctors (residents, postgraduates and consultants) before and after showing a video of BLS based on 2011, American Heart Association guidelines, showed tremendous change of theoretical knowledge among them. Our study results showed that Medical Practioners, were not updated effectively in the awareness of BLS, Our target group of 143 giving a response rate of 94.4%. Out of **135** doctors, only 91 (**67.4%**) had taken a BLS (CPR) training,while 44 (32.6%) doctors had not, but had theoretical knowledge attained from seminars, media and by observing other colleagues.the same was observed by Chandrasekaran et al. in 2010 in India, that study emphasized the cognitive approach to the general perception and skills of Basic Life Support, early recognition of stroke and acute coronary syndrome awareness was not up to mark.

The primary objectives of teaching basic life support (BLS) are learning the sequence of action according to international guidelines and acquiring the necessary skills for its proper application. Despite efforts to prepare and update BLS guidelines, recommendations on the best instructional method are still needed.(8)Result showed significant findings for **trained** ones, 60.4% of the doctors were aware while 39.6% had forgotten for what they were trained. 45.46% of the **untrained** doctors had awareness while the rest 54.54% had no awareness. Results after giving them some basic knowledge regarding BLS, 2011 AHA guidelines, there was an increased awareness among the trained and untrained doctors by 77.1% and 64.1% respectively, Many physicians and future doctors are reluctant to perform MMR (Maximum Medical Recovery) on arrest victims in the community, a trend that increases in prevalence among those with more residency training. (9)The practical CPR skills of the participants were not influenced by CPR duration,

sex, seniority or time of day (day or night), but that those whose skills were poor. In our study, among practicing doctors, 96.9% of them perform BLS without any gender constraints. This suggests that all medical staff especially members of in-hospital resuscitation teams, should undergo regular, periodic CPR training.(10) Pre-training feedback could highlight the key points of BLS for trainees and guide both instructors and trainee's focus and attention in the coming training. Pre-training evaluation is an effective way, not only to identify trainee's basic skill level, but also to reveal trainee's mistakes, which could be delivered as a pre-training feedback from that, both instructors and trainees could learn[11].As this was evidenced that some basic knowledge regarding BLS, 2011 AHA guidelines, there was an increased awareness after observing video, among the trained and untrained doctors by 77.1% and 64.1% respectively.

Doctors still are expected to learn resuscitation skills in the clinical setting, where there is little opportunity to correct poor techniques[12]. Given this situation, and the fact that many junior doctors are not competent in carrying out effective cardiopulmonary resuscitation[13], perhaps training in advanced life support should become a standardized and mandatory component of all medical school undergraduate curriculums[12]

Besides BLS, there are six other resuscitation courses along with BLS which also need to be taught at an undergraduate level. These are courses in first aid, basic trauma life support (BTLS) and advanced cardiac, trauma, paediatric and neurologic life support (ACLS, ATLS, PALS and ANLS). These courses can be integrated in the curriculum and taught over the period of medical education years which will ensure doctors with effective resuscitation skills by the end of graduation[14]

Also resuscitation skills need to be refreshed after some time and short courses can be offered to personnel who already have taken a course previously to spare the funding and assure effective revision. As found by Cooper et.al. there was significant improvement in the knowledge and skills of people who have taken BLS course six months ago after taking a short ILS(Immediate Life Support) course [15]

Most common outcome according to 55.1% doctors was patient revival while patient expired according to 44.4%. 84.3% of all the doctors will perform BLS without any gender constraints. 86.9% of the doctors suggested that BLS should be included in undergraduate curriculum and regularly upgraded. In the real sense many practicing doctors, who were the teaching staff for the medical students did not come forward to respond to the questionnaire.

CONCLUSION:

It is now essential to standardize training in advanced life support and make it a mandatory component of all medical, nursing and para-medical school undergraduate curricula.It is also equally important that teachers, school children, public and all lay persons from the community be taught and trained for the facts of basic life support and first aid.

To conduct BLS programs in almost all corners and sectors of our society, with the intention of creating numerous basic life support responders.

LIMITATIONS:

Practical skills of basic life support could not be assessed in this study.Awareness on BLS among practicing doctors was not satisfactory as majority of them did not come forward to respond to the questionnaire.

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