Awareness about BLS (CPR) among medical students: status and requirements

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Abstract

Objectives: To study the awareness on Basic Life Support (BLS) (CPR) in undergraduate medical students.

Methods: A cross sectional study was conducted by using responses to a questionnaire regarding BLS by 61 students. The results were analyzed with SPSS version 11.101.

Results: Out of 61 students only 9 (14.7%) had taken a BLS (CPR) course while 52 (85.3%) students had not attended any such course. Significantly more number of students had the theoretical knowledge about BLS (76.07% vs 49.18%, p<0.00). Practical knowledge about BLS was scored as having no, some and complete knowledge of the course. Of all the students, 57.3% had no knowledge, among those 34% had heard BLS from somewhere, 22.9% had some knowledge out of which 50% had heard about it. Significantly less number of students had complete knowledge about BLS (4% p<0.05). Among the students who had taken the course, 22% had complete knowledge (p<0.05). Significantly less number of students knew about the skills for BLS (21% p<0.05).

Conclusion: Most of the medical students although had not attended the course, still they had some knowledge about BLS. Inclusion of this course in the undergraduate curriculum will increase awareness and application of this valuable life saving maneuver (JPMA 59:57; 2009).

Introduction

Cardiac arrests and accidents are the most common emergencies with grave consequences but the high mortality associated with them can be easily prevented most of the times by some very simple maneuvers and skills. Cardiac or respiratory arrests are a very common emergency in not just the adult group but also in the neonatal period. These emergencies can be easily managed by knowledge and practice of resuscitation skills. Resuscitation "is the art of restoring life or consciousness of one apparently dead."[1] Resuscitation attempts date way back in time. Early records from Egyptian mythology and the Bible suggest that mouth-to-mouth and mouth-to-nose respiration were among the earliest resuscitative efforts using artificial respiration.[2,3] The technique has also been used for many centuries by midwives in attempts to revive apparently stillborn infants.[4] One of the first authenticated cases of recovery following artificial respiration using the mouth-to-mouth technique was the resuscitation of a suffocated miner by Tossach in 1744.[5] Over time, resuscitation skills have evolved into a proper protocol, which involves cardiopulmonary resuscitation (CPR) commonly known as Basic Life Support (BLS). However BLS involves techniques other than CPR as well but these two are used interchangeably.

Invented in 1960, CPR is a simple but effective procedure that allows almost anyone to sustain life in the early critical minutes after cardiac and respiratory arrest. Since atherosclerotic heart disease is the overall leading cause of death and trauma is the leading cause of death among those aged 1-44 years it is crucial that such efforts be

maintained.[6] Cardiac arrest results in the cessation of blood supply to the brain leading to depression of breathing as well. Thus this combination of no breathing and circulation causes generalized ischaemia, which in cases of brain allows a narrow window of ten minutes only. That is if anything has to be done it has to be done within ten minutes because after that survival is impossible. This awareness has placed a growing demand on physicians for expertise in resuscitation.[7]

Basic Life Support [BLS] includes both prompt recognition and immediate support of ventilation and circulation in case of respiratory or cardiac arrest.[8] It has a combination of skills including mouth-to-mouth breathing to support ventilation and chest compression to normalize blood circulation to the brain and vital organs. Knowledge of BLS and practice of simple CPR techniques ensures the survival of the patient long enough till experienced medical help arrives and in most cases is itself sufficient for survival.[9]

BLS requires nothing as far as resources are concerned and its importance is undeniable. Proper practice of the techniques and maneuvers enables a person to effectively resuscitate a victim. Ideally everyone should know BLS and CPR but its awareness to medical personnel should be a pre-requisite for entering into this field. Newly qualified doctors are expected to take part in resuscitation from their first day.[9] In Pakistan very little data is present which addresses the awareness of the medical personnels including students, doctors and paramedical staff regarding this highly effective and easy maneuver. Furthermore the awareness should not only be limited to the medical personnel but also to the general population. The objective of this study was to determine the level of awareness regarding BLS and knowledge of involved skills and its practical implementation among medical students.

Methods

An anonymous questionnaire regarding (a) awareness and (b) skills involved in BLS was used to assess the levels of awareness to BLS, its practical knowledge and opinion regarding its importance as a part of undergraduate medical curriculum. The aspects interrogated were about the abbreviation of BLS, the process and its requirements, who need to know it and why and under what conditions a person may require it. The second questionnaire covered the skills, and the know how of the maneuver. It interrogated about the assessment of responsiveness, airway, breathing and circulation in unconscious patients of different age groups. It also inquired about how to assist in breathing and giving chest compressions. The second questionnaire had questions on participation in any BLS course and opinion regarding inclusion of BLS in the undergraduate Medical curriculum. It was a cross sectional study conducted in Jinnah Medical and Dental College during November and December of 2006. A total sample of 86 students was selected by systematic sampling in which every 5th student was selected and they were asked to fill up the aforementioned questionnaires. Analysis of the results was done using SPSS version 11.0.

Results

A significant number of students were aware of the general idea of BLS which was assessed by the correct responses. A large number of students knew about the abbreviation, purpose and importance of the maneuver (first, second and last question) ($p<0.001$) (Table). Only

Table: Awareness of the Students Regarding the Course and Skills involved in BLS.
The values are expressed in percentages N=86

Questions asked	Response		
	Correct	Incorrect	Did not know
(a) Awareness of the Students Regarding BLS Course			
What does BLS stand for?	72.1*	15.2	12.8
What is BLS?	73.3*	8.2	18.6
What are the requirements for BLS?	67.4*	17.4	15.1
Who needs to know BLS?	65.1*	19.8	15.1
Who requires BLS?	46.5	16.3	37.2
Why to learn BLS?	75.6*	9.3	15.1
(b) Awareness of the Students Regarding Skills of BLS Course			
How would you assess the responsiveness in an unconscious adult patient?	20.9	55.8*	23.3
How would you check airway in a victim requiring BLS (CPR)?	30.2	21.0	48.8*
How would you check for breathing in an unconscious patient?	11.6	67.5*	20.9
How would you check for circulation in an adult victim?	5.8	66.3*	27.9
While assisting in breathing to an unconscious patient….	20.9	18.6	60.5*
How would you give chest compressions to an adult victim?	18.6	41.9*	39.5*

* $p<0.001$ compared to correct answer

10.9% students replied incorrectly ($p<0.001$).

On the contrary, a big number of students responded incorrectly to the questions on the skills involved in BLS (CPR). On an average only 18%, ($p<0.001$) provided correct answers. Of all 36.66% students did not know about BLS and the rest gave wrong answers.

Figure depicts the graphical representation of the student's idea about the importance of learning basic life support course and its inclusion in the undergraduate curriculum. It shows that about half of the students had heard about the BLS course. The figure shows that significantly more number of students had never attended

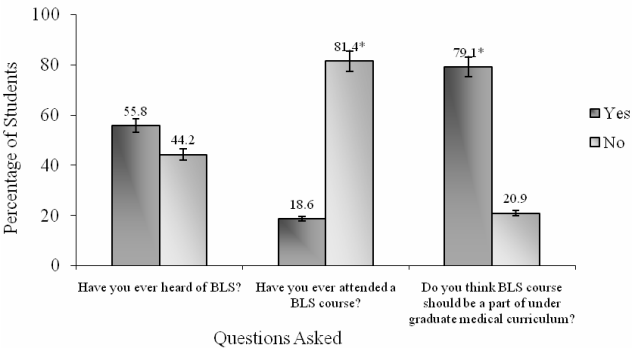

Figure: Opinion of the students towards importance of BLS Course.

any course regarding BLS or CPR arranged by any organization/hospital. However significantly higher student population insisted to have it included in the undergraduate curriculum (68 out of 86, $p<0.001$).

Discussion

The results of the study showed that medical students in the aforementioned sample lagged behind in cognitive awareness of BLS though they were aware of the importance of the skills and considered it important to be a part of the curriculum. Awareness of BLS was present in 66.6% students, but skills were found in 18% only. Our study emphasized on the cognitive approach to general perception and skills of BLS. Practical application is difficult to assess through a questionnaire as cognitive abilities are superior to technical skills.

A large number of study participants (79%) were of the opinion that training of Basic Life Support should be a part of the undergraduate curriculum. It is also a fact that after graduation training of resuscitation skills is difficult. Busy residency schedules and lack of resources act as barriers. Doctors still are expected to learn resuscitation skills in the clinical setting, where there is little opportunity to correct poor techniques.[9] Given this situation, and the fact that many junior doctors are not competent in carrying out effective cardiopulmonary resuscitation,[10,11] perhaps training in advanced life support should become a standardized and mandatory component of all medical school undergraduate curriculums.[9]

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. The BLS course done can go on to ACLS and other advanced courses. On successful completion of the BTLS and ATLS courses the student will be able to use the basic and advanced life support skills essential in resuscitating the traumatized patient.[12] 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.[13]

From our study we conclude that lack of awareness regarding BLS among medical students is a serious issue that needs to be addressed promptly. BLS and other resuscitation skills should be a part of the undergraduate curriculum and students should master the skills during their studies. More research is warranted in our set up also involving other medical personnel and to determine an appropriate and efficient course design.

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