

Teaching of Basic Life Support in the Undergraduate Medical Curriculum

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Summary

There is now increased public awareness of the value and role of cardiopulmonary resuscitation (CPR). It is therefore not surprising that the public expects a reasonable level of expertise of medical doctors in the application of the CPR techniques during emergency situations. Newly qualified doctors often lack confidence and are usually at a loss when faced with such situations as they have never had practical training before graduation. Most doctors are gradually introduced to CPR as part and parcel of their clinical experience. Many begin to attend formal CPR workshops later in their careers. Medical schools are expected to produce well trained doctors who are competent in clinical practice which include the techniques of basic resuscitation. By virtue of their expertise in airway management and clinical resuscitation, anaesthesiologists can significantly contribute to the teaching of CPR in the undergraduate medical curriculum. This is a retrospective review of Basic Life Support programmes conducted at the Department of Anaesthesiology, Faculty of Medicine, Universiti Kebangsaan Malaysia.

Key Words: Basic Life Support, Cardiopulmonary Resuscitation, Defibrillation

Introduction

It is proven that cardiac life support training of the lay public has a beneficial effect on survival of pre-hospital cardiac arrest victims¹. Debard was able to demonstrate a 6% reduction in hospital mortality through effective use of cardiopulmonary resuscitation (CPR) in hospital². As a distinct science, CPR has been accepted internationally as an important branch of medicine involving cardiologists, anaesthesiologists, emergency physicians, pre-hospital emergency care personnel, hospital paramedics and medical administrators. International standards on the teaching of CPR has been adopted. In Malaysia, organised CPR teaching based on the American Heart Association (AHA) standard and guidelines began in May 1986 at Hospital Kuala Lumpur where a group of interested individuals among cardiologists, anaesthesiologists and paramedics were trained as providers as well as

instructors for the Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) programmes. Subsequently, as a result of active propagation of this knowledge through numerous life support workshops, many medical personnel have been trained both as providers as well as instructors. Although there is no national data on the number of qualified medical personnel trained in CPR, it is believed that a sizeable portion of the workforce are competent in it.

The medical schools in the country can certainly contribute in propagating the knowledge and skills of BLS by including this subject in their undergraduate medical curriculum. In the Universiti Kebangsaan Malaysia (UKM), BLS training commenced in July 1994. The Department of Anaesthesiology has taken the initiative to teach its medical undergraduates the basic knowledge and skills of CPR, airway intubation and introduction to defibrillation. Fourth year medical

students of a five year medicine course, are made to attend one full day of intensive BLS workshops (during their rotation) two weeks posting in Anaesthesiology). This course follows the American Heart Association recommendations for one man adult CPR, two man adult CPR, adult choking management, infant CPR and infant choking. CPR guide books are distributed to the students a week before the workshop. A CPR videotape is shown at the beginning of the course before going on to group practice on mannequins. An airway intubation and a defibrillation demonstration with practice sessions are also included for the students' benefit. At the end of the day the students are tested with multiple choice questions (MCQ) consisting of forty questions (with a passing mark of 86%) and a five station practical test on the competencies as recommended by the AHA. It is almost three years since this has been incorporated in our teaching curriculum. Thus a review of the experience in conducting BLS programmes is considered appropriate and timely.

Materials and Methods

The results of the MCQ's and a five station practical test on the competencies of performing one man adult CPR, two man adult CPR, adult choking, infant CPR and infant choking as recommended by the American Heart Association were reviewed. Feedback and evaluation questionnaire forms filled up by the students at the end of the day were reviewed. Confidentiality was assured as students were not required to write their names and return them to the instructors. The questionnaires consist of close ended statements on the benefit of the course, its duration, topics covered, practice on mannequins and whether or not the course has increased their level of confidence in performing CPR.

Results

Eleven Basic Life Support courses were held between July 1994 and June 1996 involving a total of 259 students. Each course was attended by 20 - 25 participants. There were at least five instructors in each course, who were either anaesthesiology lecturers or senior anaesthesiology trainee lecturers from the Department of Anaesthesiology and Intensive Care,

UKM. Students need to pass both the MCQ's and practical tests. Two hundred and fifty four (254) students passed on their initial attempt. All the five students who failed did well in the practical tests, resat the MCQ paper and passed at the second attempt. Nineteen (7.3%) students excelled and were thought to have instructor potential. Two hundred and forty six students submitted a return giving a response rate of 95%. The results of the questionnaires (Table 1) showed that all the students (246) found the course to be beneficial. A majority (238 students) felt that the workshop had increased their confidence level in basic resuscitation technique. Almost half the number of students (100) felt that the course was too short, but the rest felt the duration was just right. Two hundred and twenty-one (221) students felt that the topics covered were adequate while 25 felt otherwise. A majority (212) felt that the practical sessions were adequate while 34 (14%) felt they were inadequate.

Table 1
Results of questionnaires

Questionnaire statements	No. of responses	
	YES	NO
1. The course is beneficial	246	0
2. My confidence level is increased as a result of the course	238	8
3. The course duration was just right	146	100
4. Adequacy of topics covered	221	25
5. Adequacy of practical sessions	212	34

Discussion

There is a real need to propagate the knowledge and skills of resuscitation among health care personnel. Medical schools can play a major role by giving more emphasis on the acquisition of knowledge and skills of resuscitation by medical students before they graduate and practise. Compulsory attendance of BLS workshop as has been practised by the UKM may in the long run have an important impact with regard to improved skills in resuscitation among doctors in

this country. Baskett³ had also suggested that medical students should be taught on the basic knowledge and skills of resuscitation before graduation. Roberts *et al*⁴ had pointed out that medical students should acquire BLS skills during their attachment in the Anaesthesiology unit and anaesthesiologists can play an active role.

The BLS courses that have been carried out by this department have proved that resuscitation skills can easily be learnt as evidenced by the number of passes among the participants (averaging 98%). One possible explanation could be that the medical students were about to graduate, were eager to perform and highly motivated. All students considered the course to be beneficial and a majority (97%) felt it had increased their level of confidence in managing CPR. For the few who felt otherwise, the inadequate time for practice and inability to perform well in practice sessions probably played a part. Although more than half thought the course duration was adequate, forty percent wanted a longer workshop, with more time devoted to practical sessions. Fourteen percent thought the practical sessions were inadequate, largely because of lack of time to master the techniques. This could be improved with provision of more mannequins and instructors. At the moment, it is not feasible to extend the full day CPR workshop which is part of a short two-week Anaesthesiology posting. The rotational posting in Anaesthesiology may be increased to at least three weeks to allow a one and a half day course as recommended by the AHA. Ten percent felt that the

topics covered were inadequate. Drowning and electrocution management were frequently cited as topics that could have been included.

Methods of teaching could be improved so as to obtain a higher percentage of passes. In the future this intensive one day workshop could begin without showing the CPR videotape, allowing more time for demonstrations by the instructors and practice by the students. Alternatively CPR videotape could be shown on another day. Even though basic resuscitation skill practice on mannequins can be quite easily acquired by these students, their long term knowledge and skills retention needs to be evaluated. Thus a more indepth and continuous evaluation of the course needs to be carried out from time to time.

Conclusion

Greater public awareness and education in the field of resuscitation has demanded higher standards of competencies in basic life support from the medical profession. Medical schools should introduce basic CPR skills training for their medical students before they graduate and start working throughout the country. Medical students are highly motivated in 'saving lives' and can thus relate to and easily succeed in such training. Such courses should probably be introduced much earlier during the pre-clinical years. Anaesthesiologists have a major role to play in CPR teaching and can contribute actively as members of the pool of CPR instructors in the university.

References

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