

Self-instruction in Basic Life Support

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ABSTRACT

Self-instruction in basic life support (BLS), using a video and training manikin, has been shown to be at least as effective as instructor-led training. It appears that the video can be a short, simple demonstration. It may even be possible to become competent in the use of an automated external defibrillator (AED) without practice on a manikin, but this is not yet proven. Competency in the use of an AED seems feasible by self-training using a poster and practice on a manikin alone, at least if the trainee is a healthcare professional already competent in BLS.

There are several advantages of self-instruction, including cost-effectiveness and flexibility. There are, however, several unanswered questions before its precise place in resuscitation training can be established.

INTRODUCTION

The only two interventions shown to be effective in the management of cardiac arrest are basic life support (BLS) and defibrillation. The presence of a bystander who intervenes with BLS doubles the chances of survival for a victim of cardiac arrest, but such intervention occurs in less than half of cases of witnessed arrest (Eisenberg et al 1982). Some of the reasons for this are: reluctance to act, fear of making the situation worse, fear of infection, and lack of skill in BLS and use of an automated external defibrillator (AED). However, an important factor is that although up to 75% of the public are trained in BLS, the level of retention of skills is very low (Parnell & Larsen 2007). It is, therefore, important to encourage widespread and effective citizen training programmes.

Unfortunately, BLS knowledge and skills are poorly learnt and rapidly lost. For example, 6 months after one national public programme, only 6.8% of the trainees were able to perform safe and effective CPR (Morgan et al 1996). Such failure of retention is not confined to laypeople: in a study of doctors and nurses, 6 months after training their skills had deteriorated to near pre-training levels (Curry & Gass 1987). Kaye and colleagues (1991) looked at possible causes for the apparent failure of traditional, instructor-led courses successfully to achieve skill acquisition and retention, and concluded that 'The problem of poor retention of cardiopulmonary resuscitation skills may lie with the instructor, not the learner or the curriculum'.

Traditional BLS/AED courses are instructor-led and last about 3½ hours for BLS (Hoke & Handley 2006) and 2¾ hours for AED (Hoke et al 2006). They are costly of both time and money.

DEVELOPMENT OF SELF-INSTRUCTION

One of the earliest proponents of self-instruction in CPR was Peter Safar, who tested school children in the late 1970s. He found that those who were given a manual and a manikin, and asked to practise in pairs, ended up with as good knowledge and skill as those who attended a formal, instructor-led, American Heart Association (AHA) course (Eisenburger & Safar 1999).

A number of videos depicting CPR have been developed and have proved successful in teaching or reinforcing skills (Done & Parr 2002). Recently, a very impressive study compared the effectiveness of a 20-minute self-instructional video, together with a simple training manikin, with an instructor-led AHA course. The authors reported that self-instruction resulted in better performance than instructor-led training (Lynch et al 2005), and that this benefit was maintained, at least for 2 months (Einspruch et al 2007).

But it seems that even simpler self-instruction is at least as good as an instructor-led course. For example, Jones and colleagues (2007) used a 5-minute DVD with a training manikin, deVries and Handley (2007) tested an online program with no manikin practice, and deVries and colleagues (2007) used only a poster to train nurses in the use of an AED.

Benefits of Self-instruction

Self-instruction in BLS is an attractive concept, with the advantages that it is cost- and time-efficient, it potentially reaches a wider audience, and the results seem to be better than instructor-led training.

From the evidence we have now, it seems reasonable to conclude that:

- (a) Self-instruction in BLS using a video & manikin is effective, and...
- (b) ...it is at least as effective as instructor-led training.
- (c) It appears that the video can be just a simple demonstration of BLS.
- (d) It seems possible to become competent in the use of an AED (and maybe BLS as well) without practice on a manikin, but this needs further study.

Unanswered Questions

There are, however, a number of unanswered questions, including:

- (1) What is the best programme format?
- (2) How fast do the skills, once learnt, decay?
- (3) Is self-instruction better for initial or refresher training?
- (4) Is self-instruction better for laypeople or healthcare professionals?
- (5) How simple can the video be?
- (6) How long does it take participants to learn by self-instruction?
- (7) How important is practice on a manikin?
- (8) How do we encourage participation?

Until we have the answers to these questions, it is important to consider such training as being in the developmental stage. Self-instruction looks very promising, but it is important that further variations on the methods and target trainees are monitored carefully. It is tempting to read of a successful research project and adopt the method for mass use, only to find that later variations of this form of training are even more effective. Introduced carefully, and with reflection, this may well be the optimum training technique for the future. CPR instructors: you have been warned!

TAKE-HOME MESSAGES

1. BLS is poorly learnt and easily forgotten.
2. Self-instruction, particularly by use of a video and training manikin, has been shown to be effective,
3. Although a promising development for the future, there are a number of unanswered questions that need to be addressed before self-instruction can be recommended for all.

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