Design of an instructional module on Basic Life Support for homeschooled children

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Abstract: Basic Life Support (BLS) can increase a victim's chances of survival when administered promptly and correctly. Cardiac and respiratory arrests occur more frequently when the victim is at home far from clinical support. Hence, prompt action by family members trained in BLS can save the victim's life. In this study, the requirements for the design of a module for teaching BLS as an important life skill to homeschooled children is investigated using Taba's model of curriculum design. The Fuzzy Delphi technique was used to obtain consensus among 10 experts for the design, content, strategies, activities and assessment for the instructional module. The experts agreed that BLS should be taught to children above 15 years, with content focusing on the techniques of proper chest compression, rescue breath and rescue of drowning victims. The findings indicate that the preferred strategies were observation of demonstrations and hands-on return demonstrations with activities using manikins to simulate emergency scenarios. The preferred methods of assessment were practical demonstrations, multiple choice questions and online assessment. The findings provide insights for the design of a BLS module which could be developed for homeschooled children.

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PUBLIC INTEREST STATEMENT
This article is useful for determining aspects of knowledge, skill and delivery of instruction for Basic Life Support (BLS) and cardiopulmonary resuscitation (CPR) which may be taught to children outside of the school context. This is a necessary life skill which will enable students to save the lives of adults requiring this emergency procedure. This research can provide input for parents, curriculum developers, educational institutions, members of the public and other stakeholders on important aspects such as the age when BLS should be taught to children, and the components, strategies, activities and assessment approaches which are appropriate to be taught.
1. Introduction

Injuries and life-threatening incidents are always unexpected. The failure to take prompt action may escalate an emergency situation and lead to the mortality and morbidity of the victim. However, early intervention may be effective in preventing further deterioration of the patient’s condition, and may even reverse the life-threatening condition (Savastano & Vanni, 2011). Basic Life Support (BLS) is an emergency procedure required for victims of cardiac arrest, respiratory arrest and foreign-body airway obstruction (Smith, Cronenwett, & Sherwood, 2007). Prompt administration of BLS increases the patient’s chances of recovery. It is believed out-of-hospital mortality could be significantly reduced if at least 15% of the population had knowledge of BLS (Maconochie, Simpson, & Bingham, 2007).

Cardiopulmonary resuscitation (CPR) is a main component of BLS. After a catastrophic injury, CPR allows for temporary circulatory support for the continuous delivery of oxygen to the brain so that there is a better chance of survival. According to the American Heart Association (AHA) Guidelines, early recognition and response to a sudden cardiac arrest can improve the chances of survival by as much as 50% (Travers et al., 2010). However, the situation is normally chaotic and confusing when a sudden cardiac arrest occurs and a rescuer who is not adequately skilled in BLS may not be effective in saving the victim’s life. The rescuer’s confusion may delay the emergency response required for CPR (Travers et al., 2010). On the other hand, increased knowledge results in increased confidence by the rescuer when attempting resuscitation (Colquhoun, 2012). Training more lay people in BLS could reduce mortality rates as there would be more people prepared to respond in emergency situations (Assar et al., 1998). Hence, it is important to train members of the public in BLS in order to save lives.

In Malaysia, homeschooling is an alternative form of education that emphasises quality education based on beliefs in inculcating moral values and strong family ties in a community (Alias, Abdul Rahman, & Siraj, 2014). In 2002, it was estimated that there were 5,000 homeschooled children in Malaysia with the number increasing at an exponential rate in the last 20 years (Alias, Siraj, Abdul Rahman, & DeWitt, 2013; Goh, 2013). There are essentially three variations of homeschooling in Malaysia: parents tutoring their children at home; a few families meeting together to teach their children in a casual setting; and a teaching centre which applies the homeschooling approach and syllabus (Alias et al., 2014). Technology enables homeschooled children to acquire knowledge while away from the traditional school environment. Curriculum materials for online learning such as blogs, webquests, videos and digital stories delivered on the internet can be utilised in teaching and learning activities for homeschooled children (Alias, Abdul Rahman, Siraj, & Ibrahim, 2013).

BLS should be taught to homeschooled children as children who are homeschooled are constantly surrounded by older adults. The chances of being exposed to emergency conditions such as cardiac arrests at home are high. Travers et al. (2010) reported that 88% of the 383,000 out-of-hospital sudden cardiac arrests a year happen at home. Most cases are unexpected as victims would appear healthy, without any history of heart-related ailments. Immediate provision of BLS often determines whether the victim survives or has an early death (Savastano & Vanni, 2011). Hence, BLS is an essential life skill which needs to be learnt by lay people in order to handle emergency situations effectively.

Many countries incorporate BLS as part of the school curriculum. The Resuscitation Council of the United Kingdom’s (2010) call for CPR to be made mandatory was addressed when BLS was made part of the National Curriculum in England. However, learning CPR is not compulsory in Malaysia. BLS was introduced in 1998 in primary and secondary schools as an extracurricular activity for developing students’ confidence. At present, the Malaysian Red Crescent Society is one of the organisations...