



The Forgotten Role of Bystander CPR to Improve Out of Hospital Cardiac Arrest Outcomes in Oman

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The collapse of a young healthy adult in the workplace or on a football field, or the collapse of a senior family member at home are not uncommon events in the Omani community. Out of hospital cardiac arrest remains the most common cause of death worldwide. Those victims require an immediate response from a bystander because they suffer immediate hypoxic brain injury due to ineffective cerebral perfusion. The events are time-dependent and if not responded to immediately may result in permanent brain damage and death. Bystander cardiopulmonary resuscitation (CPR) offered to those victims has the potential to reverse such changes and may result in favorable outcomes. The American Heart Association¹ and European guidelines¹ state the importance of immediate recognition of victims of cardiac arrest, early activation of emergency medical services, early CPR, and early defibrillation in its chain of survival metaphor.² Early CPR could be offered by trained laypeople or through dispatch-assisted CPR. Bystander CPR offers many survival advantages: it is associated with a two- to three-fold increase in survival when compared to victims who had no CPR before the arrival of emergency medical services personnel.³ Furthermore, it is associated with lower long-term brain injury and nursing home admissions at one year.⁴

Despite the proven long- and short-term survival benefits, bystander CPR offered to cardiac arrest victims remains at its lowest rate globally with only 50% of victims receiving CPR from a bystander at best.⁵ Many nations including the USA, Denmark, and Japan have recognized the magnitude of this problem. Nationwide campaigns involving different stakeholders resulted in a major

increase in CPR performed by bystanders.⁶ Lay providers listed many concerns stopping them from providing CPR. These included lack of training, legal implications, socioeconomic factors, and fear.⁷ People feared performing the wrong action, contracting an infectious disease from mouth-to-mouth resuscitation, the patient's response, and above all the fear of legal consequences of performing such measures outside the hospital settings. These concerns could be mitigated by training laypeople across the country, which would provide education about the low likelihood of contracting infectious diseases⁸ and the effectiveness of hands-only CPR without the need to perform mouth-to-mouth resuscitation.⁹ In 2006, Japan adopted a program of hands-only CPR training, which resulted in wide adoption of CPR across the country and survival benefits for their people.⁶ Many countries have passed 'The Good Samaritan law', which protects lay providers in cases of unsuccessful CPR attempts.

A cross-sectional survey conducted in Oman revealed that awareness of the importance of CPR is low, and 60% of laypeople surveyed did not know how to perform CPR.¹⁰ As voiced in this month's Letter To The Editor, Oman as a developing nation is no different. Cardiovascular diseases is among the top leading causes of death in the country and the majority of cardiac arrest occurs out of hospital, yet awareness of CPR and its application is at its lowest rate.¹¹

What is the way forward? First, we should join initiatives such as 'Kids Save Lives', which educates school children in CPR and is endorsed by several international organizations such as the World Health Organization.¹² Although some small-scale initiatives in private schools exist that teach CPR, it

is logical to pass a law that mandates school training.⁶ Additionally, it is of paramount importance to adopt a national program to train the public in CPR. Simplified educational programs that use awareness campaigns involving the public and social media would alleviate the fear and concerns that stop laypeople from providing CPR. Telephone-assisted CPR through our national rescue number (9999) would assist individuals providing CPR and remove any concerns of legal implications. The law in Oman supports laypeople providing CPR. In fact, as part of the civil obligations, individuals may end up in litigation if they abstain from offering required assistance. We are in desperate need to establish a registry and database to assess outcomes and interventions for out of hospital cardiac arrest victims. I believe bystander CPR is a health intervention that has the potential to save more lives in Oman.

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