



ELSEVIER

Contents lists available at ScienceDirect

## Resuscitation

journal homepage: [www.elsevier.com/locate/resuscitation](http://www.elsevier.com/locate/resuscitation)

## Clinical paper

# Basic life support training into cardiac rehabilitation programs: A chance to give back. A community intervention controlled manikin study<sup>☆</sup>

Violeta González-Salvado<sup>a,b,\*</sup>, Cristian Abelairas-Gómez<sup>b,c,d</sup>, Carlos Peña-Gil<sup>a,b</sup>,  
Carmen Neiro-Rey<sup>a</sup>, Roberto Barcala-Furelos<sup>b,c,e,f</sup>, José Ramón González-Juanatey<sup>a,b</sup>,  
Antonio Rodríguez-Núñez<sup>b,c,g,h,1</sup>

<sup>a</sup> Cardiology Department, University Clinical Hospital of Santiago, Universidade de Santiago de Compostela, Santiago de Compostela, Spain

<sup>b</sup> Institute of Health Research of Santiago (IDIS), Spain

<sup>c</sup> CLINURSID Research Group, Universidade de Santiago de Compostela, Santiago de Compostela, Spain

<sup>d</sup> Faculty of Educational Sciences, Universidade de Santiago de Compostela, Santiago de Compostela, Spain

<sup>e</sup> Faculty of Education and Sport Sciences, Universidade de Vigo, Pontevedra, Spain

<sup>f</sup> REMOSS Research Group, Universidade de Vigo, Pontevedra, Spain

<sup>g</sup> Paediatric Emergency and Critical Care Division, University Clinical Hospital of Santiago, Universidade de Santiago de Compostela, Santiago de Compostela, Spain

<sup>h</sup> School of Nursing, Universidade de Santiago de Compostela, Santiago de Compostela, Spain

## ARTICLE INFO

## Keywords:

Basic life support  
Cardiac rehabilitation  
Resuscitation  
Laypeople  
Bystander  
Cardiac arrest  
Learning

## ABSTRACT

**Aim:** Early basic life support is crucial to enhance survival from out-of-hospital cardiac arrest but rates remain low, especially in households. High-risk groups' training has been advocated, but the optimal method is unclear. The CARDiac REhabilitation and BASIC life Support (CAREBAS) project aims to compare the effectiveness of two basic life support educational strategies implemented in a cardiac rehabilitation program.

**Methods:** A community intervention study including consecutive patients enrolled on an exercise-based cardiac rehabilitation program after acute coronary syndrome or revascularization was conducted. A standard basic life support training (G-Stan) and a novel approach integrating cardiopulmonary resuscitation hands-on rolling refreshers (G-CPR) were randomly assigned to each group and compared. Basic life support performance was assessed by means of simulation at baseline, following brief instruction and after the 2-month program.

**Results:** 114 participants were included and 108 completed the final evaluation (G-Stan:58, G-CPR:50). Basic life support performance was equally poor at baseline and significantly improved following a brief instruction. A better skill retention was found after the 2-month program in G-CPR, significantly superior for safety and sending for an automated external defibrillator. Confidence and self-perceived preparation were also significantly greater in G-CPR after the program.

**Conclusions:** Integrating cardiopulmonary resuscitation hands-on rolling refreshers in the training of an exercise-based cardiac rehabilitation program is feasible and improves patients' skill retention and confidence to perform a basic life support sequence, compared to conventional training. Exporting this formula to other programs may result in increased numbers of trained citizens, enhanced social awareness and bystander resuscitation.

## Introduction

Although early cardiopulmonary resuscitation (CPR) and defibrillation are crucial for improving outcomes and survival of out-of-hospital cardiac arrest (OHCA) [1–3], less than half of victims receive bystander assistance [4,5]. Shortening the time to advanced care is also critical, which implies performing the sequence of actions that comprise the basic life support (BLS) sequence as part of the chain of survival [6].

Most of OHCA occur at home, with particularly low reported rates of survival [7] and bystander BLS [8] compared to other settings. Patients with a cardiac history – especially of coronary disease – are at increased risk of adverse events, including sudden cardiac death [5,9,10]. BLS training among patients and their families has been encouraged [11,12] but scarcely applied. Cardiac rehabilitation programs have demonstrated to improve quality of life after myocardial infarction and reduce readmissions, cardiovascular events and cardiovascular

<sup>☆</sup> A Spanish translated version of the abstract of this article appears as Appendix in the final online version at <https://doi.org/10.1016/j.resuscitation.2018.03.018>.

\* Corresponding author at: Cardiology Department, University Clinical Hospital of Santiago, A Choupana s/n. 15706, Santiago de Compostela, A Coruña, Spain.

E-mail address: [violeta.gonzalez.salvado@sergas.es](mailto:violeta.gonzalez.salvado@sergas.es) (V. González-Salvado).

<sup>1</sup> SAMID-II Network, Spain, ISCIII-Sub-Directorate General for Research Assessment and Promotion and the European Regional Development Fund (ERDF), ref. RD12/0026.

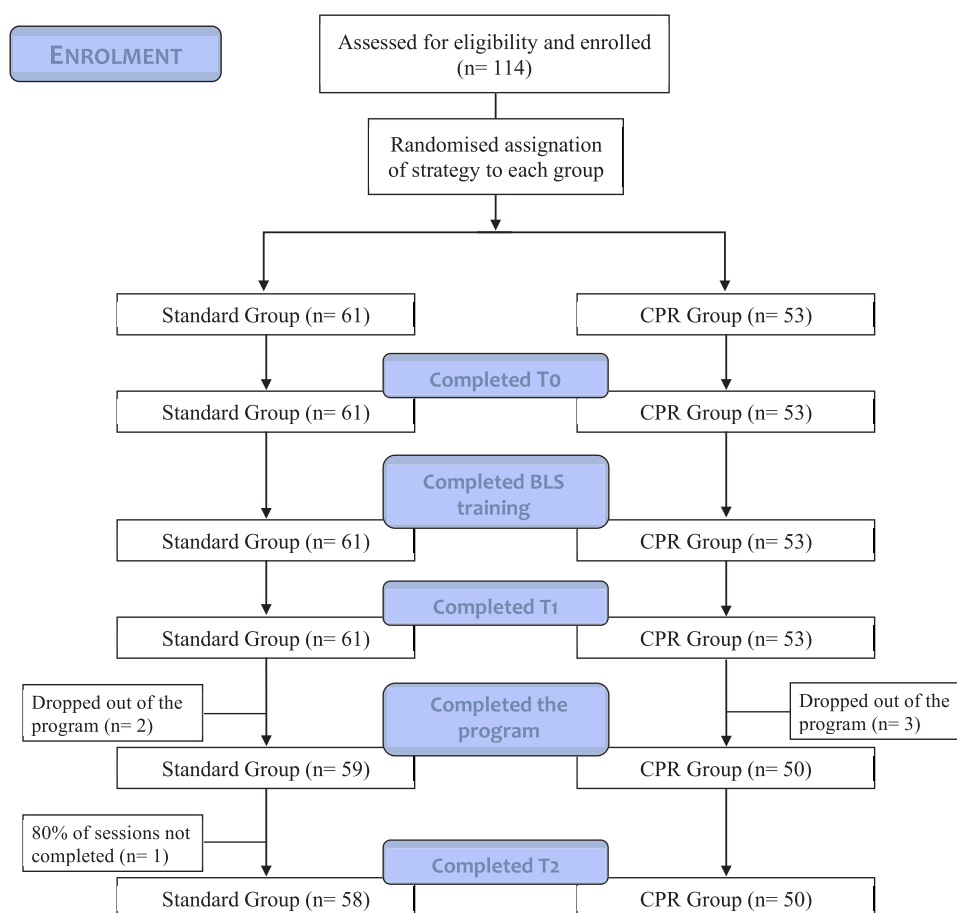


Fig. 1. Participants' flow and study completion.

Abbreviations: BLS: basic life support. CPR: cardiopulmonary resuscitation.

mortality. With a comprehensive approach including risk factor modification, medication adherence and physical exercise, they have been recognized as an essential component of care [13]. Moreover, they provide a valuable educational setting for patients and ability to disseminate knowledge in their familiar and social environment. Even if they appear to be a safe and feasible frame to implement such training [14], the optimal method is unclear.

The Cardiac REhabilitation and Basic life Support (CAREBAS) project is rooted in this concern for improving outcomes of OHCA by implementing BLS learning in a cardiac rehabilitation program at a tertiary University hospital. Even if the effectiveness of CPR rolling refreshers to achieve psychomotor competence by healthcare staff has been well characterized [15–18], no previous studies have assessed their usefulness to remind the complete BLS sequence. This 6-month project aims to compare a new training formula integrating these CPR refreshers to a standard course regarding performance, retention and self-perceived preparation in BLS depending on the strategy assigned.

## Methods

The project is conducted in the frame of an exercise-based cardiac rehabilitation program at a single centre in Santiago de Compostela, Galicia (Spain). The study complies with the Declaration of Helsinki and was approved by the Clinical Research Ethics Committee of our hospital.

### Setting

The hospital serves around 500000 inhabitants in a scattered

population area. It comprises 750 beds of which 64 are dedicated to cardiology, including 10 beds at the coronary care unit. A mean of 3000 patients per year are admitted in the cardiology department, with 1200 angioplasties performed per year.

The Cardiac Rehabilitation Unit is run by one cardiologist, one endocrinologist, two rehabilitation doctors, two nurses, one physiotherapist and one psychologist. A mean of 225 patients per year enrol on the exercise-based program, mainly after suffering acute coronary syndromes. Inpatient phase I comprises individualized advice for risk factor modification and adherence to medication. Patients meeting inclusion criteria for phase II are comprehensively evaluated within 4 weeks after discharge to assess their lifestyle, psychological state, functional capacity and overall risk. Phase II consists of an outpatient structured educational program and supervised exercise training at the hospital gym, along 24 sessions distributed over 8 weeks (3 sessions/week) in groups of 6 patients. Patients' families often attend the educational module.

### Participants

All patients who joined the exercise-based cardiac rehabilitation program between February 2016 and February 2017 and their families were invited to participate in the study. Eligible participants were those aged > 18 years, medically stable and physically and psychologically able to participate in the training. All subjects gave their written consent to participate.

Demographic characteristics, previous training in BLS and experience in witnessed OHCA were assessed at baseline, and anthropometric and functional features were collected before and after the program.

Download English Version:

<https://daneshyari.com/en/article/8675614>

Download Persian Version:

<https://daneshyari.com/article/8675614>

[Daneshyari.com](https://daneshyari.com)